10th Annual Canadian Pharmacy Education and Research Conference

Association of Faculties of Pharmacy of Canada

Association des facultés de pharmacie du Canada

CPERC 2019

76th Annual Meeting of AFPC

Sutton Place Hotel, Edmonton, Alberta | June 11-14, 2019

AFPC

75 YEARS
Since 1944

CO-HOSTED BY

UNIVERSITY OF ALBERTA

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CPERC 2019 Resources on AFPC Website
www.afpc.info/content/conference-program

1. CPERC 2019 Sessions Information: document includes details on the following sessions:
   a. Roundtable Sessions: overviews and discussion questions
   b. Abstracts for Mini-Sessions
   c. Abstracts for Special Interest Group (SIG) Education Sessions

2. CPERC 2019 Poster Abstracts: 65 abstracts of posters presented by pharmacy faculty members and students, under the categories of pharmacy education (PE), pharmacy practice (PP) and pharmaceutical science (PS).

3. AFPC 2019 Award Winners: names and bios of faculty and student award winners.

Welcome to CPERC 2019

On behalf of the Faculty of Pharmacy and Pharmaceutical Sciences, University of Alberta; Faculty of Pharmaceutical Sciences, University of British Columbia; and the College of Pharmacy and Nutrition, University of Saskatchewan, we are very pleased to welcome you to Edmonton for the 10th Annual CPERC conference and 75th Anniversary of AFPC. By co-hosting CPERC, we are supporting AFPC's commitment to creating partnerships among our faculties.

The conference will open with a welcome reception on Tuesday evening, followed by a get-together at a local pub, hosted by the University of Alberta. On Wednesday evening we look forward to celebrating with the AFPC award winners at the Awards Banquet at the stunning Art Gallery of Alberta.

The opening keynote is by the authors of "How to be a Happy Academic", Dr. Alexander Clark and Ms. Bailey Sousa (University of Alberta). Dr. Todd Sorensen, University of Minnesota, will present on preparing pharmacy graduates to succeed in a value-driven health system. In a leadership session, 3 Associate Deans will share their thoughts and reflections on academic leadership. Back by popular demand is a session devoted to faculty updates, with each school giving a brief presentation on innovative approaches to pharmacy education. Additional sessions will include 8 roundtables, 8 mini-sessions, 15 SIG education sessions and an AFPC Townhall session. Be sure to take time to see the 65 poster presentations and talk to the authors about their research and innovative pharmacy education approaches. CPERC 2019 will close with a keynote reflecting on AFPC's 75th anniversary, from AFPC's President Dr. Jamie Kellar, on how the past informs the future with regards to pharmacy teaching and practice. Post-CPERC, there's an Indigenization Symposium: Truth and Reconciliation in Canadian Pharmacy Education. To wrap up CPERC, the University of Alberta is hosting a pub night on Thursday.

This year's conference program was planned by the 2019 CPERC Working Group, chaired by Nese Yuksel, with guidance from the AFPC Education Committee. Many thanks to the Working Group members for their ideas and hard work: Ann Thompson, Christine Hughes, Nese Yuksel, Ed Krol, Jason Perepelkin, Kerry Wilbur, Fong Chan, Cynthia Richard, Gilles Leclerc, Julie Méthot, Beverly FitzPatrick (see page 5). In addition, we would like to express our sincere gratitude to AFPC staff, Janet Cooper, Executive Director, and Doreen Sproule, Administrative Assistant, for their substantial work in organizing the conference.

We trust that you will enjoy the conference, have a wonderful time reconnecting with friends and meeting new colleagues, and leave with lots of innovative ideas to take back to your faculties.
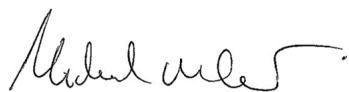
Sincerely,

Jamie Kellar, RPh, BSc HK, BScPhm, PharmD
Acting Director, PharmD Program
Assistant Professor – Teaching Stream
Leslie Dan Faculty of Pharmacy
University of Toronto
President, AFPC Board of Directors

Neal Davies, BSc(Pharm), PhD, RPh
Professor and Dean
Faculty of Pharmacy and
Pharmaceutical Sciences
University of Alberta
Vice Chair, AFPC Council of Deans

Kishor M. Wasan, RPh, PhD,
FAAPS, FCSPS, FCAHS
Professor and Dean
College of Pharmacy and
Nutrition
University of Saskatchewan

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Professor and Dean
Faculty of Pharmaceutical Sciences
University of British Columbia
Treasurer, AFPC Board of Directors

Nese Yuksel, BScPharm, PharmD, FCSHP, NCMP
Professor
Faculty of Pharmacy and Pharmaceutical Sciences
University of Alberta
Chair, CPERC 2019 Working Group

AFPC Board, Councils and CPERC Working Group

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University of Manitoba

Julie Méthot
Université Laval

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Beverly FitzPatrick
Memorial University

CPERC 2019 WORKING GROUP MEMBERS

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Chair, AFPC Research
Committee

Janet Cooper
Executive Director, AFPC

Program-at-a-Glance

TUESDAY, JUNE 11	
0830-1700 h	AFPC Meetings (Board of Directors & AGM, SIG Business Meetings)
1830-2030 h *Rutherford*	**Opening Reception**
2030 h *10013 101A Ave*	**University of Alberta Host Night @ CRAFT Beer Market**

WEDNESDAY, JUNE 12		
0700-0830 h *Foyer & Ballroom*	**Poster Viewing & Breakfast**	
0830-0845 h *Ballroom*	**Welcome & Opening Remarks from Host Universities**	
0845-1000 h *Ballroom*	**Opening Keynote: The Smartness Myth – the Real Secret to Success and Happiness in Your Academic Career** *Dr. Alexander Clark, University of Alberta & Effective Academic Inc.* *Ms. Bailey Sousa, University of Alberta & Effective Academic Inc.* *(authors of "How to be a Happy Academic")*	
1000-1030 h *Foyer & Ballroom*	**Poster Viewing & Morning Break**	
1030-1110 h	**Mini-Session #1 – Alternatives to Didactic Lecturing** *Ballroom*	**Mini-Session #2 – Evidence and Competency Make for Quality** *Winterlake*
1115-1215 h *Ballroom*	**Keynote: Are We Preparing Pharmacy Graduates to Succeed in a Value-Driven Health System?** *Dr. Todd Sorensen, University of Minnesota*	
1215-1300 h *Foyer & Ballroom*	**Buffet Lunch**	
1300-1330 h *Ballroom*	**AFPC Annual Business Meeting & Townhall**	
1330-1515 h *Ballroom*	**Roundtable Sessions: Current Topics in Pharmacy Education** 1. Preparing students for value-based practice 2. Gamification in pharmacy education 3. Scholarship of Teaching and Learning 4. Keeping curriculum current: incorporating hot topics 5. Graduate student/research trainee supervision 6. Entrustable Professional Activities 7. Addressing new CCAPP accreditation standards 8. Stigma training	
1515-1600 h *Foyer & Ballroom*	**Poster Viewing / Judging & Afternoon Break**	
1600-1700 h	**SIG Education Session #1** **Truth & Reconciliation SIG** *Ballroom*	**SIG Education Session #2** **Program Evaluation and Educational Assessment SIGs** *Winterlake*
1800-2200 h *2 Sir Winston Churchill Square*	**AFPC Awards Reception & Banquet @ Art Gallery of Alberta**	

THURSDAY, JUNE 13	
0700-0830 h *Foyer & Ballroom*	Poster Viewing & Breakfast
0830-1010 h *Ballroom*	Faculty Updates on Innovation in Education
1010-1040 h *Foyer & Ballroom*	Poster Viewing & Morning Break
1040-1125 h *Ballroom*	Pharmacy Academic Leadership Session: Thoughts and Reflections from Associate Deans Using policies to guide graduate program management *Dr. Scot Simpson, University of Alberta* Leadership in the design of a new curriculum *Dr. Yvonne Shevchuk, University of Saskatchewan* Managing from the middle *Dr. Sandra Jarvis-Selinger, University of British Columbia*

1130-1210 h	SIG Education Session #3 PEP-C Experiential Education SIG and Self Care Therapeutics & Minor Ailments SIG *Ballroom*	SIG Education Session #4 Medicinal Chemistry SIG *Winterlake*
1210-1300 h *Foyer & Ballroom*	Buffet Lunch	
1300-1400 h	SIG Education Session #5 Informatics SIG and Skills Lab SIG *Ballroom*	SIG Education Session #6 Social & Administrative Pharmacy SIG *Winterlake*
1410-1450 h	Mini-Session #3 – A Panoramic View of Two Educational Initiatives *Ballroom*	Mini-Session #4 – Complexities in Learning and Teaching *Winterlake*

1450-1510 h *Foyer*	Afternoon Break
1510-1610 h *Ballroom*	Closing Keynote: Reflections on AFPC's 75th Anniversary: How the Past Informs the Future with Regards to Pharmacy Teaching and Practice *Dr. Jamie Kellar, University of Toronto*
1610-1615 h *Ballroom*	Close of AFPC CPERC 2019
1700-2100 h *Rutherford*	Post-CPERC Indigenization Symposium: Truth and Reconciliation in Canadian Pharmacy Education – Session & Dinner *(additional registration fee)*
1800-2100 h *Executive Boardroom*	AFPC Health Informatics Peer Leaders Dinner & Workshop *(by invitation only)*
2030 h *10235 101 St*	University of Alberta Host Wrap-Up Night @ Rose & Crown Pub

FRIDAY, JUNE 14	
0800-1230 h *Rutherford*	Post-CPERC Indigenization Symposium: Truth and Reconciliation in Canadian Pharmacy Education *(additional registration fee)*
0800-1500 h *Executive Boardroom*	AFPC Health Informatics Peer Leaders Workshop *(by invitation only)*

Conference Program

TUESDAY, JUNE 11, 2019

1830 – 2030	Opening Reception	*Rutherford*

2030   **University of Alberta Host Night**   *CRAFT Beer Market*
10013 101A Ave, Edmonton

WEDNESDAY, JUNE 12, 2019

0700 – 0830   Buffet Breakfast and Poster Viewing   *Foyer & Ballroom*

Poster session overview: 65 posters from pharmacy faculty members and students will be displayed, under the categories of pharmacy education (PE), pharmacy practice (PP) and pharmaceutical science (PS). Poster presenters have been asked to be at their posters during breaks to facilitate discussion with their colleagues. All student posters will be judged for the AFPC Whit Matthews poster awards, which will be announced at the awards banquet. See CPERC 2019 Poster Abstracts on AFPC website for further details.

0830 – 0845   Welcome & Opening Remarks   *Ballroom*

Moderator: Nese Yuksel, University of Alberta

Welcome from Host Universities:
University of Alberta: Neal Davies, Dean
University of British Columbia: Michael Coughtrie, Dean
University of Saskatchewan: Ed Krol, AFPC Council of Faculties

0845 – 1000   Opening Keynote: The Smartness Myth – the Real Secret to Success   *Ballroom*
and Happiness in Your Academic Career

Session overview: What matters most: your gifts or your growth? Join our keynote speakers to explore why the factors most people think make for career success actually stop you from realizing your true potential. Drawing on cutting-edge theory and research into implicit theories of intelligence, come to understand why your perceptions of your contributions to work success and failure matter so much. Learn how to more fully tap your growth mindset for sustained and increased performance and better personal wellbeing for both yourself and your teams.

Moderator: Nese Yuksel, University of Alberta

Presenters: Alexander Clark, RN, PhD, FCAHS
Professor and Associate Vice President (Research)
University of Alberta
Co-Founder & Consultant, Effective Academic Inc.

Bailey Sousa, PMP
Director of the Peter Lougheed Leadership College
University of Alberta
Co-Founder & Consultant, Effective Academic Inc.

1000 – 1030	**Poster Viewing & Morning Break**	*Foyer & Ballroom*

1030 – 1110   **Concurrent Mini-Sessions**

Mini-Session #1: Alternatives to Didactic Lecturing   *Ballroom*

Moderator: Ann Thompson, University of Alberta

1. **Using educational games to develop inter-professional collaboration skills**
   Terri Schindel, University of Alberta

2. **Teaching communication skills: straightforward ways to incorporate student made videos into your classroom**
   Lisa Guirguis, University of Alberta

Mini-Session #2: Evidence and Competency Make for Quality   *Winterlake*

Moderator: Beverly FitzPatrick, Memorial University

1. **Basing pharmacy education on evidence: a quality improvement framework**
   Gilles Leclerc, Université de Montréal

2. **Entrustable professional activities: exploring implementation into competency-based assessment of pharmacy experiential learning**
   Samuel Chan, University of Toronto

1115 – 1215   **Keynote: Are We Preparing Pharmacy Graduates to Succeed**   *Ballroom*
in a Value-Driven Health System?

Session overview: Success of all health disciplines in the evolving health care landscape is increasingly dependent on an ability to demonstrate value to decision makers responsible for resource allocation. This reality presents a new and unique set of instructional challenges to pharmacy educators. This session will identify important curricular considerations stemming from the emergence of value-driven health care, outline frameworks that are relevant to demonstrating value from pharmacy services and outline potential strategies for ensuring success of pharmacy graduates in a changing health care system.

Moderator: Cynthia Richard, University of Waterloo

Presenter: *Todd D. Sorensen, PharmD, FAPhA, FCCP*
Professor and Associate Department Head, Department of Pharmaceutical Care & Health Systems, University of Minnesota
Executive Director, Alliance for Integrated Medication Management

1215 – 1300	**Buffet Lunch**	*Foyer & Ballroom*

1300 – 1330   **AFPC Annual Business Meeting & Townhall**   *Ballroom*

Session overview: David Edwards, AFPC Past President, Lalitha Raman-Wilms, President Elect, and Janet Cooper, Executive Director, will present highlights of AFPC's initiatives over the past year, followed by dialogue with members. Todd Sorensen, President Elect of the American Association of Colleges of Pharmacy, will bring greetings on behalf of AACP.

1330 - 1515   **Roundtable Sessions: Current Topics in Pharmacy Education**   *Ballroom*

Session overview: AFPC's roundtable discussions are informal platforms designed to allow for interactive information exchange on current topics in pharmacy education. They provide a venue to meet colleagues with similar interests and with varying perspectives. The session will be a "speed-dating" format of dialogue, networking and collaboration, with two discussion facilitators at each table. Participants take a seat at a table of their interest and share their experiences, ideas, concerns, solutions, and learn about what others are doing or thinking around the topic. Participants will rotate to different tables at 30-minute intervals, for a total of three rotations. See CPERC 2019 Sessions Information document on the AFPC website for details and discussion questions for each roundtable.

Moderator: Christine Hughes, University of Alberta

Table #1: Preparing students for value-based practice
Facilitators: Natalie Kennie-Kaulbach, Dalhousie University & Todd Sorensen, University of Minnesota

Table #2: Gamification in pharmacy education
Facilitators: Renette Bertholet, University of Alberta & Marie Rocchi, University of Toronto

Table #3: Scholarship of Teaching and Learning
Facilitators: Simon Albon, University of British Columbia & Kristin Janke, University of Minnesota

Table #4: Keeping curriculum current: incorporating hot topics (e.g. cannabis, opioid crisis, deprescribing)
Facilitators: Kelly Grindrod, University of Waterloo & Julie Méthot, Université Laval

Table #5: Graduate student / research trainee supervision
Facilitators: Beverly FitzPatrick, Memorial University & Ed Krol, University of Saskatchewan

Table #6: Entrustable Professional Activities
Facilitators: Andrea Cameron, University of Toronto & Kerry Wilbur, University of British Columbia

Table #7: Addressing new CCAPP accreditation standards
Facilitators: Isabelle Lafleur, Université de Montréal & Lavern Vercaigne, University of Manitoba

Table #8: Stigma training (e.g. mental health, STBBIs)
Facilitators: Christine Hughes, University of Alberta & Jason Perepelkin, University of Saskatchewan

1515 – 1600   **Poster Viewing / Judging & Afternoon Break**   *Foyer & Ballroom*

1600 – 1700   AFPC Special Interest Group Concurrent Sessions   *Ballroom*

Truth & Reconciliation SIG

Moderator: Jaris Swidrovich, University of Saskatchewan

1. Co-developing a transformative indigenous health practicum in community
Presenter: Larry Leung, University of British Columbia

2. The pharmacy experience of embedding an interprofessional UBC health-wide
   indigenous cultural safety curriculum
Presenter: Jason Min, University of British Columbia

3. The state of indigenization in Canadian pharmacy programs
*Presenters: Jaris Swidrovich, University of Saskatchewan &
Elaine Lillie, University of Waterloo*

Program Evaluation SIG and Educational Assessment SIG   *Winterlake*

Moderator: George Pachev, University of British Columbia

1. Evidence of practice-readiness for culminating practice experience: from documentation
   describing program policy and design to indicators of competency achievement
*Presenters: Isabelle Lafleur, Université de Montréal &
Aleksandra Bjelajac Mejia, University of Toronto*

2. Evaluating the impact of additional PharmD bridging curriculum on The Pharmacy
   Examining Board of Canada (PEBC) licensing exam results
Presenter: Ken Cor, University of Alberta

3. Continuous Quality Assurance Frameworks in Pharmacy Education
*Presenters: Isabelle Lafleur, Université de Montréal & Anne Marie Whelan, Dalhousie
University & Robert Renaud, University of Manitoba*

1800 – 2200   AFPC Awards Reception & Banquet   *Art Gallery of Alberta*
Join your colleagues at the stunning Art Gallery of Alberta   *2 Sir Winston Churchill Square*
to celebrate the 2019 AFPC faculty and student award winners.
Dinner will begin at 7 pm, followed by the award presentations.

THURSDAY, JUNE 13, 2019

0700 – 0830   **Poster Viewing and Buffet Breakfast**   *Foyer & Ballroom*

0830 – 1010   **Faculty Updates on Innovation in Education**   *Ballroom*

Session overview: Each faculty of pharmacy across Canada will provide a brief update on an innovative initiative at their university.

Moderator: Ed Krol, University of Saskatchewan

1. Pharmacy students providing education as communicators and health advocates
Presenters: Lisa Bishop & Mike Chong, Memorial University

Pharmacy students embraced their roles as communicators and health advocates to increase public and professional knowledge about optimal healthcare. Second year pharmacy students developed and organized a Health Fair for students, staff and faculty of Memorial University. Third year students developed and produced podcasts for pharmacists and other healthcare professionals.

2. The use of videos for modeling skills to enhance learning
Presenters: Natalie Kennie-Kaulbach & Kim Sponagle, Dalhousie University

Our Skills Lab team identified a need for explicit models of well-executed pharmacist-patient consultations to enhance student learning. Specifically, the team identified a need for demonstration of the integration of communication strategies within the modified Calgary Cambridge Interview and Dalhousie Patient Care Process. A Teaching and Learning Enhancement Grant funded video development. This presentation will briefly discuss the development, implementation and evaluation of videos modeling communication skills as a teaching tool within the Skills Lab setting.

3. Ethical issues for pharmacy students in Laval's PharmD program
Presenter: Julie Méthot, Université Laval

Ethical issues for pharmacy students in our Pharm.D. will be presented. The learning activities and evaluation will be discussed.

4. Program evaluation at the Faculty of Pharmacy, University of Montreal
Presenter: Ema Ferreira, Université de Montréal

Program evaluation has become a priority at the University of Montreal. To implement a program evaluation plan several steps were undertaken and will be presented.

5. Implementation of high-fidelity mannequin simulations in a physical assessment course
Presenter: Natalie Crown, University of Toronto

The ability to both perform physical assessment and interpret physical findings is a core patient assessment skill necessary to equip pharmacy graduates for full scope of Canadian pharmacy practice. We will describe our experience introducing simulation using a high fidelity manikin to the physical assessment course at the Leslie Dan Faculty of Pharmacy, University of Toronto. The goal was to enable PharmD students to practice their physical assessment skills in a safe environment, and provide the opportunity to appreciate both normal and abnormal physical findings.

6. An intraprofessional OSCE with pharmacy students and pharmacy technician students

Presenter: *Cynthia Richard, University of Waterloo*

Pharmacists and pharmacy technicians work closely together in practice upon graduating, but have limited opportunities to learn together. We offered a pilot intraprofessional event for pharmacy students and pharmacy technician students that included a practice OSCE and case discussion. Event structure and feedback will be discussed in this update.

7. Ongomiizwin Institute for Health and Healing: opportunities for education and research

Presenter: *Lavern M. Vercaigne, University of Manitoba*

This presentation will describe the Ongomiizwin Institute for Health and Healing at the University of Manitoba and opportunities for collaboration in undergraduate education and research with the College of Pharmacy.

8. Patient assessment in clinical pharmacy: a comprehensive guide

Presenter: *Sherif Mahmoud, University of Alberta*

A practical tool targeting pharmacy students and pharmacists regardless of their practice setting. Authored by more than 30 Canadian pharmacists and academics, this essential textbook provides an innovative approach to patient assessment ranging from the basic skills to the more advanced specialized assessments.

9. Virtual patients

Presenter: *Karen Dahri, University of British Columbia*

Eight virtual patient cases have been implemented in the Entry-to-Practice Doctor of Pharmacy curriculum at the University of British Columbia in an effort to help students develop their clinical reasoning skills and better prepare them for experiential rotations. Evaluation has occurred to determine students' perceptions related to the benefits of using the cases, the optimal timing of the cases, the changes in their thought process as they work through multiple cases and the cases impact on students' experiential rotations experiences.

10. Hospital pharmacy practice in a simulated environment

Presenter: *Ed Krol, University of Saskatchewan*

This activity exposed students to hospital pharmacy practice in a simulated environment where students could practice the nuances of entering a patient's hospital space, gathering history and discussing medications while a patient is gowned, not feeling well, laying in a curtained off hospital bed. The space that we use replicates the hospital experience down to the linen. This activity was completed before the student's hospital experiential learning rotation, orientating them to the patient care process and building their confidence before they saw patients admitted to hospital.

1010 – 1040   **Poster Viewing & Morning Break**   *Foyer & Ballroom*

1040 – 1125 **Pharmacy Academic Leadership Session: Thoughts and Reflections** *Ballroom*
from Associate Deans

Moderator: Nese Yuksel, University of Alberta

Presenters:

Using policies to guide graduate program management
Scot Simpson, University of Alberta

Leadership in the design of a new curriculum
Yvonne Shevchuk, University of Saskatchewan

Managing from the middle
Sandra Jarvis-Selinger, University of British Columbia

1130 – 1210 **AFPC Special Interest Group Concurrent Sessions**

PEP-C Experiential Education SIG and *Ballroom*
Self-Care Therapeutics & Minor Ailments SIG

Moderator: Kenneth Manson, University of Waterloo

1. Peer assisted learning in experiential placements: the perspective of pharmacy students
Presenter: *Michelle MacDonald, University of Alberta*

2. Empowering students in the classroom to raise the bar for practical patient self-care in the community
Presenter: *Nardine Nakhla, University of Waterloo*

Medicinal Chemistry SIG *Winterlake*

Moderator: Ed Krol, University of Saskatchewan

1. Teaching drug metabolism – a tale of two courses
Presenter: Ed Krol, University of Saskatchewan

2. Why should I care? – student snapshots of learning medicinal chemistry in a PharmD program
Presenter: *Simon Albon, University of British Columbia*

1210 – 1300 **Buffet Lunch** *Foyer & Ballroom*

1300 – 1400 **AFPC Special Interest Group Concurrent Sessions**

Informatics SIG and Skills Lab SIG *Ballroom*

Moderator: Theresa Charrois, University of Alberta

1. Using technology to promote interprofessional learning about informatics
Presenters: *Lisa Bishop, Memorial University & Marie Rocchi, University of Toronto*

2. Using gamification in practice skills lab: implementation and value in student learning
Presenter: *Renette Bertholet, University of Alberta*

3. Using a fictional malpractice case to build documentation skills
Presenters: *Kelly Grindrod & Cynthia Richard, University of Waterloo*

Social & Administrative Pharmacy SIG
Winterlake

Moderator: Jason Perepelkin, University of Saskatchewan

1. A novel way to engage students in experiential preventive health education at a university-owned, pharmacist-led patient care clinic
Presenter: Jamie Yuen, University of British Columbia

2. It's all about the BASE: a new approach to teaching social, administrative and information sciences across the entry to practice
Presenter: Lisa Guirguis, University of Alberta

1410 -1450 **Concurrent Mini-Sessions**

Mini-Session #3: A Panoramic View of Two Educational Initiatives
Ballroom

Moderator: Ann Thompson, University of Alberta

1. Marijuana content in Canadian undergraduate pharmacy programs: a national survey
Kerry Wilbur, University of British Columbia

2. Small but mighty: the current state of educational scholarship and SoTL in academic pharmacy
Simon Albon, University of British Columbia

Mini-Session #4: Complexities in Learning and Teaching
Winterlake

Moderator: Jason Perepelkin, University of Saskatchewan

1. Stress-o-meter: understanding pharmacy student anxiety
Gilles Leclerc, Université de Montréal

2. Curriculum design, workload, and learning: a conundrum seeking for time
Gilles Leclerc, Université de Montréal

1450 – 1510 **Afternoon Break** *Foyer*

1510 – 1610 **Closing Keynote: Reflections on AFPC's 75th Anniversary – How the Past Informs the Future with Regards to Pharmacy Teaching and Practice** *Ballroom*

Session overview: Professional identity formation – the development of professional values, actions and aspirations – is gaining momentum as a movement for professional and educational reform in the health professions. In spite of this, research suggests that identity formation in pharmacy has been neglected. Historically the pharmacist's professional identity has been contested: are they merchants or health care professionals? This presentation will explore pharmacists' professional identity over the last century in pharmacy education in North America. It will examine key identity discourses in North American pharmacy and how they may impact the evolution of the profession in the 21st century.

Moderator: Lalitha Raman-Wilms, University of Manitoba

Presenter: *Jamie Kellar, RPh, BScHK, BScPhm, PharmD, PhD(c)*
Acting Director, PharmD Program
Assistant Professor – Teaching Stream
Leslie Dan Faculty of Pharmacy, University of Toronto
President, AFPC Board of Directors

| 1610 – 1615 | Close of AFPC CPERC 2019 | *Ballroom* |
| | ***Closing Remarks:*** *Jamie Kellar, University of Toronto* | |

| 1700 – 2100 | Post-CPERC Indigenization Symposium: Truth and Reconciliation in Canadian Pharmacy Education | *Rutherford* |
| | **Session & Dinner:** see program on page 20 (additional registration fee) | |

| 1800 – 2100 | AFPC Health Informatics Peer Leaders Workshop
Dinner & Workshop (by invitation only) | *Executive Suite* |

| 2030 | University of Alberta Host Wrap-Up Night | *Rose & Crown Pub*
10235 101 St, Edmonton |

FRIDAY, JUNE 14, 2019

| 0800 – 1230 | Post-CPERC Indigenization Symposium: Truth and Reconciliation in Canadian Pharmacy Education | *Rutherford* |
| | **Session:** see program on page 20 (additional registration fee) | |

| 0800 – 1500 | AFPC Health Informatics Peer Leaders Workshop
Workshop (by invitation only) | *Executive Suite* |

CPERC 2019 Plenary Sessions
Presenter's Biographies

Alexander Clark, RN, PhD, FCAHS
Professor and Associate Vice President (Research)
University of Alberta
Co-Founder & Consultant, Effective Academic Inc.

Bailey Sousa, BA (Hons), PMP
Director of the Peter Lougheed Leadership College
University of Alberta
Co-Founder & Consultant, Effective Academic Inc.

Alex Clark and Bailey Sousa, founders of The Effective, Successful, Happy Academic, share a passion for effectiveness, teamwork and aspiration in work and workplaces. Drawing on their work on professional and work skills, they have led hundreds of interdisciplinary workshops worldwide on research, leadership, personal effectiveness, writing and academic work – and have been featured in the Guardian, Times Higher and numerous professional journals. Alex, a health services researcher by background, is Professor and Associate Vice President (Research) at the University of Alberta, and is a World Economic Forum Young Global Leader / Young Scientist. Bailey is the Director of the Peter Lougheed Leadership College at the University of Alberta – a lifelong entrepreneur, she was recognized as Edmonton's Avenue Magazine's 'Top 40 Under 40' for her contribution in her work and to her city.
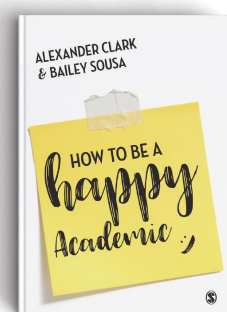
How to be a Happy Academic by AM Clark & BJ Sousa
(SAGE Publications, London: 2018)

Relevant to all types of academic work and career stages, Alex Clark and Bailey Sousa's book, "How to be a Happy Academic" has received international acclaim. Building on your personal values, the book's unique integrative approach supports readers to develop and build their own personalized values-driven map to achieve their success indicators. Using a unique approach to interconnected skills, the book will then help you harness the power of your "Core" – to meet all your career challenges. Honing your skills and helping you to focus on 'the right work' – this book can help everyone to be more effective, successful, and happy.

Todd D. Sorensen, PharmD, FAPhA, FCCP
Professor and Associate Department Head,
Department of Pharmaceutical Care & Health Systems
University of Minnesota
Executive Director, Alliance for Integrated Medication Management

Dr. Sorensen is Professor and Associate Head, Department of Pharmaceutical Care and Health Systems at the College of Pharmacy, University of Minnesota. He also serves as the Executive Director of the Alliance for Integrated Medication Management, a non-profit organization that engages health care institutions in practice transformation activities that support improved medication use.

Dr. Sorensen's work concentrates on identifying strategies that facilitate clinical practice development and developing change management and leadership skills in student pharmacists, pharmacy residents and practitioners. His research and service activities have focused on working with health care organizations to implement strategies that improve health outcomes associated with chronic illness, specifically identifying leadership strategies that allow organizations to integrate and sustain medication management services delivered by pharmacists within interprofessional teams. This work has been greatly influenced by ten years of experience participating in and leading national quality improvement collaboratives for health systems seeking to optimize medication use in outpatient settings.

Yvonne Shevchuk, BSP, PharmD, FCSHP
Associate Dean Academic
College of Pharmacy and Nutrition
University of Saskatchewan

I have been the Associate Dean Academic at the University of Saskatchewan since July 2010 and a Professor in the Division of Pharmacy. Along with Associate Dean duties I teach infectious diseases in both the old and new curriculum. My major area of interest is in optimal drug use, in particular antibiotics. Until recently I had a clinical practice in infectious diseases at the Royal University Hospital. I am still a member of the Antimicrobial Utilization Subcommittee and remain active in stewardship activities. I am also a committee member of AMMI, Canada's Antimicrobial Stewardship and Resistance Committee. My general interest and expertise in optimal drug use has led to appointments with the CADTH Canadian Drug Expert Committee (CDEC) and the Drug Advisory Committee of Saskatchewan (DACS).

I am the Director of RxFiles – an Academic Detailing program now a part of the College of Pharmacy and Nutrition at UoS. Another interest I have is in interprofessional education and I currently chair the IPEAC at the University of Saskatchewan (Interprofessional Education Advisory Committee). I have recently been nominated to the Buffalo Circle group which is an indigenous allyship group at UoS. I have a husband, 4 grown children, 1 grandson, 1 cat and 1 cat on an extended vacation with me.

Scot H. Simpson, BSP, PharmD, MSc
Professor and Assistant Dean, Graduate Studies
Faculty of Pharmacy and Pharmaceutical Sciences
University of Alberta

I received my Bachelor of Science in Pharmacy from the University of Saskatchewan, and completed a hospital pharmacy residency at the Regina General Hospital. Following this, I worked as a staff pharmacist at the Yorkton Regional Hospital in Yorkton, Saskatchewan for three years. I then returned to school and completed a Doctor of Pharmacy degree at the University of Toronto, and a post-doctoral fellowship and Master of Science degree with Dr. Ross Tsuyuki at the University of Alberta.

In 2004, I joined the Faculty of Pharmacy and Pharmaceutical Sciences, University of Alberta as a tenure-track Assistant Professor. I served on our Faculty's Graduate Studies Committee for several years and became the Director of Pharmacy Practice Graduate Education & Research in 2011. In September 2013, I accepted an invitation to become the Associate Dean, Research and Graduate Studies. Under this administrative portfolio, I was responsible for coordinating our graduate program and managing key aspects of the Faculty's activities related to research until March 2019. This administrative portfolio was recently split and I now focus my attention on the Faculty's graduate studies program. In this role, I have the privilege of working with representatives from across our faculty, graduate students and administration to develop and implement policies and procedures that help run our graduate program.

Sandra Jarvis-Selinger, PhD
Professor & Associate Dean, Academic
Faculty of Pharmaceutical Sciences
University of British Columbia

Dr. Jarvis-Selinger is the Associate Dean, Academic in the Faculty of Pharmaceutical Sciences. She is a PhD-trained developmental psychologist and researcher in the area of Human Learning, Development and Instruction. In addition to her UBC administrative and faculty roles, she is also the educational faculty member for the American Academy of Orthopaedic Surgeons' annual course for Orthopaedic Educators and for the American Orthopaedic Association.

Dr. Jarvis-Selinger's work and scholarship focuses on educational innovation, which specifically includes: 1) developing teaching excellence, 2) curriculum design, development and evaluation, and 3) using technology to support education. Through knowledge translation, innovative pedagogical approaches and respectful research partnerships, her research addresses positive curricular change, effective lifelong learning, and supporting professional identity formation. In 2015, she was awarded the Association of Faculties of Medicine of Canada's (AFMC) award for Outstanding Contribution to Faculty Development in Canada.

Jamie Kellar, RPh, BScHK, BScPhm, PharmD, PhD(c)
Acting Director, PharmD Program
Assistant Professor – Teaching Stream
Leslie Dan Faculty of Pharmacy, University of Toronto
President, AFPC Board of Directors

Dr. Jamie Kellar is an Assistant Professor – Teaching Stream and Acting Director of the Doctor of Pharmacy Program at the Leslie Dan Faculty of Pharmacy, University of Toronto. She received an Honors Bachelor of Science degree in Human Kinetics (BScHK) from the University of Guelph, followed by a Bachelor of Science in Pharmacy (BScPhm) and Doctor of Pharmacy (PharmD) degree, both from the University of Toronto. Currently, she is a PhD candidate in the School of Health Professions Education, Maastricht University, Netherlands, where she is using Foucauldian Critical Discourse Analysis to study Pharmacist Professional Identity. In addition to her education, she is a licenced pharmacist in Ontario. Professor Kellar's practice area is in the field of mental health.

At the Leslie Dan Faculty of Pharmacy, Jamie teaches a variety of courses including the pharmacotherapy of neuropsychiatry and a mental health and addiction elective course. She has also taught medication therapy management and health systems. Jamie is actively involved in numerous student initiatives, including serving as the Faculty Advisor for the Initiative for Mental Health Awareness in Pharmacy (IMHAP) club. In this role, Jamie provides talks on various mental health topics throughout the year and leads "Mental Health and Chill" movie nights each semester for students, faculty and staff. The movie nights screen films and documentaries on mental health topics and are followed by a facilitated discussion. The sessions aim to increase dialogue and reduce stigma associated with mental illness.

Post-CPERC Indigenization Symposium

Truth and Reconciliation in Canadian Pharmacy Education

June 13 (evening) & June 14 (morning) *(additional registration required)* *Rutherford*

SYMPOSIUM DESCRIPTION:

This event is hosted by AFPC's Truth & Reconciliation Special Interest Group. This symposium is an informative, hands-on symposium that will not only inspire you but give you practical tools to help you Indigenize your curriculum. You will:

- Engage in steps for reconciliation by listening to Indigenous elders and knowledge-keepers
- Learn from healthcare practitioners and educators willing to share the lessons they have learned on their Indigenization journey
- Understand what it means to be a valued Indigenous ally
- Be invited to participate in an authentic ceremony
- Brainstorm with your colleagues across the country as we work together to create national and faculty-specific initiatives that respond to the Truth and Reconciliation Commission's Calls to Action
- Receive a toolkit with learning guides, implementation options and other useful resources.

Whether you're just getting started or have already made significant progress, this session will energize and inform your Indigenization efforts.

SYMPOSIUM PROGRAM:

Thursday Evening Session *Rutherford*
June 13, 5 pm to 9 pm

Confronting our Truth with a Blanket Exercise

What? – Blanket Exercise

- This 90-minute active learning exercise frames Canada's history from an Indigenous perspective. As land and rights are stripped away through legislation and treaties, the impact on Indigenous peoples is the devastating truth we face today. A talking circle follows where participants share their reflections on the exercise, what they learned and how it affected them.

What's in it for Participants?

- Participants will physically be part of a history lesson, as the experiences of Indigenous people are acted out. First-timers are often shocked as a brutal history unfolds. While saddened and often angered about what they did not know and were not taught, they are also energized to make change and move forward in truth and reconciliation.
- Each experience is authentic and unique. Something new is always gleaned and the richest learning often comes in the talking circle and reflection. The insights others share enlighten one's own, renewing energy and restoring resolve. Our leader has been facilitating exercises for more than 10 years and encourages those who have attended an activity such as this before to join us again, to learn from peers and to share new learning.

ReconciliACTION: Tools for Indigenizing

What?

- Ceremony and opening remarks by Elder Gilman Cardinal

- Dr. Cindy Blackstock sets the stage, sharing wisdom about Indigenous children and youth
  – Dr. Blackstock is a member of the Gitksan First Nation with more than 25 years of social work experience. As a result of her work as a tireless advocate for the rights of Indigenous children and youth, she has received numerous national and international honours, including the Amnesty International Ambassador of Conscience Award and the Canadian Labour Congress' Award for Outstanding Service to Humanity. She worked with other Indigenous leaders in developing the United Nations' General Comment on the Rights of Indigenous children. Dr. Blackstock is currently a professor at McGill University and the Executive Director First Nations Child and Family Caring Society. (https://fncaringsociety.com/)

- Becoming an ally
  – Dr. Jill Konkin is the Associate Dean of Community Engagement at the Faculty of Medicine and Dentistry, University of Alberta. She will be sharing insights regarding her experience as an ally, and her leadership in Medicine to enhance education and student attitudes.
  – Dr. Yvonne Shevchuk will also share her story of allyship and highlight the University of Saskatchewan's Buffalo Circle program to acknowledge allies.
  – Perspective on what it means to be a good ally and how to cultivate and nurture allyship at your institution.

- How to talk about traditional healing to students immersed in evidence-based medicine.

- Resource guide with how-to-use hints.

What's in it for participants?

- The focus here is on practical tips and considerations whether you are just starting, or well on your way.

CPERC 2019 POSTERS

PHARMACY EDUCATION

PE01   The importance of experiential education facilitators to institutional pharmacy practicum sites in British Columbia: assessment

PE02   AFPC's response to the Joint Statement of Action to Address the Opioid Crisis in Canada

PE03   Healthcare student competence and confidence with prescribing: a cross-sectional study

PE04   Pharmacist and physician competence and confidence with prescribing: a scoping review

PE05   Special populations - a proposed framework incorporating pediatrics and geriatrics

PE06   Curriculum mapping: implementation and acceptability of a curriculum mapping tool

PE07   Curriculum mapping: representation of interprofessional education in pharmacy and physical education

PE08   A call to act: Indigenization of pharmacy programs

PE09   Lessons learned by sabbatical

PE10   Partners in pharmacy: an intraprofessional OSCE with pharmacy and pharmacy technician students

PE11   The value of peer assessment in the education of healthcare professionals

PE12   Tools utilized to measure characteristics associated with pharmacist success in students of health profession programs

PE13   Distributed preceptor development and self-efficacy

PE14   The use of on-line video capture interviews for admissions at the University of Alberta

PE15   Design and implementation of a writing-intensive course in a Canadian accredited Middle Eastern pharmacy program

PE16   Students' satisfaction of an academic coach program

PE17   Evaluation of peer tutoring at Université de Montréal

PE18   Refocusing the grading system of an assessment-intensive programme on competencies

PE19   Implementing and evaluating a train-the-educator program for pharmacy practice educators

PE20   Development of a housing and regional information resource to support students relocating for pharmacy practicums

PE21   Implementing a personal health record at the UBC Pharmacists' Clinic - a narrative review of the pragmatics

PE22   Preparing students for tomorrow's practice - exploring pharmacy and technician students' digital health literacy and impact on curricula

PE23   Evaluation of the course "writing a scientific paper" in the master's program in advanced pharmacotherapy

PE24   Ethical issues in the entry-level Doctor of Pharmacy degree

PE25   Preceptor experiences with novel student-preceptor models in pharmacy education: a qualitative analysis

PE26   Novel student-preceptor models in pharmacy education: a qualitative analysis of the PharmD student experience

PE27   Use of virtual interactive cases in a 2nd year pharmacy skills lab

PE28   Connecting a simulated virtual patient program with real-life clinical placements: perspectives from year 3 students at UBC

PE29   Experiential opportunity: student intra-professionalism and mentoring in a community practice placement site

PE30   Pharmacy curriculum in Newfoundland and Labrador: 1971-2016

PE31   Development, implementation and evaluation of videos for modelling pharmacists' consultation skills

PE32   Clinical simulation pilot project for fourth year pharmacy students at the Université de Montréal

PE33   Nonprescription medications and minor ailment education across North American pharmacy schools

PE34   Admissions variables as predictors of academic performance in a post-baccalaureate Doctor of Pharmacy program

PE35   Teaching pharmacy students to prescribe: evaluating the relationship between motivation, student engagement and self-efficacy during an innovative lab activity

PE36 Pharmacy prerequisites associated with interactive and non-interactive OSCE performance

PE37 Exploring students' experience of learning during practicum

PE38 Service learning and AFPC competencies: assessment of a course revision

PE39 Implementation and evaluation of immersions for year one PharmD students at the University of Saskatchewan

PE40 The SIMpathetic program: implementing simulation stethoscopes in an E2P PharmD program at the University of British Columbia

PE41 Engagement of pharmacy students in practice based research

PE42 Putting the pieces together - implementation of a jigsaw classroom to teach pharmacy students

PE43 Implementation of an academic teaching practicum for program year 4 entry-to-practice PharmD students

PE44 The evolution of a national online educational resource for informatics

PE45 Pill counter, businessperson or health care provider? A discourse analysis of professional identity in pharmacy education

PE46 Pharmacy student and patient educator perceptions on a patient-centred care activity in a lecture theatre

PHARMACY PRACTICE

PP01 Indigenous community-driven clinical pharmacists' services

PP02 Pharmacists perceptions towards their preparedness to participate in medical assistance in dying

PP03 Formation of a collaborative interprofessional primary health care deprescribing research team in Nova Scotia

PP04 Successful implementation of clinical pharmacy services: lessons from the field

PP05 Implementation of pharmacist care planning services in Alberta: a step in the right direction?

PP06 Using a patient panel approach to identify patients for pharmacist referral and the impact of pharmacist intervention on the management of uncontrolled type 2 diabetes

PP07 Impact of collaboration between the UBC Pharmacists Clinic and a neurologist in the management of headache patients

PP08 Patient experiences and perceptions of a university affiliated pharmacist-led clinic

PP09 Understanding the efficacy and safety of cannabis use in women's health: a scoping review

PP10 What characteristics are associated with success in healthcare practitioners? A scoping review

PP11 Quantitative exploration of atrial fibrillation patients' knowledge gaps: a systematic review and meta-analysis

PP12 Assessment of atrial fibrillation patients' education needs from patient and clinician perspectives: a qualitative descriptive study

PP13 Persistence of use of pharmaceutical cannabinoid agents in Manitoba, Canada: a population-based cohort study

PHARMACEUTICAL SCIENCE

PS01 Predictability of capillary blood spot toward venous whole blood sampling for therapeutic drug monitoring of tacrolimus in solid organ transplant recipients

PS02 Guiding therapy for BRAF/MEK inhibitor combinations for BRAF mutated melanoma

PS03 Early childhood antibiotic use and autism spectrum disorders: a population-based cohort study

PS04 Regulation of cardiac automaticity by 17ß-estradiol during pregnancy

PS05 New evidence on the kinetic solubility profiles of indomethacin amorphous solid dispersions in water-insoluble hydrogel carriers

PS06 Commercially available North American phenytoin formulations and possible excipient interactions and food effects

AFPC 2019 Award Winners

See AFPC Website for Award Winner details.

STUDENT AWARDS

AFPC / Merck Canada Inc. Postgraduate Pharmacy Fellowship Award
Courtney Lawrence, University of Manitoba

AFPC / Canadian Foundation for Pharmacy Graduate Student Award for Pharmacy Practice Research
Shahrzad Salmasi, University of British Columbia

AFPC / Council for Continuing Pharmaceutical Education Graduate Student Research Award
Amani Hamad, University of Manitoba

AFPC / Council for Continuing Pharmaceutical Education Student Research Poster Awards
Valérie Long, Université de Montréal
Giovanna Madeiros Schver, University of Toronto
Wajd Alkabanni, University of Manitoba

AFPC Whit Matthews Graduate & Undergraduate Student Poster Awards
Sponsored by the Council for Continuing Pharmaceutical Education
(Posters to be judged at CPERC)

FACULTY AWARDS

AFPC New Investigator Research Award
Mary De Vera, University of British Columbia

AFPC / Pfizer Research Career Award
Ping Lee, University of Toronto

AFPC / Janssen Award for Innovation in Education
Marie Rocchi, University of Toronto

AFPC National Award for Excellence in Education
Jamie Kellar, University of Toronto

AFPC Honoured Life Membership
Jean Lefebvre, Université Laval

AFPC Past President Award
Jamie Kellar, University of Toronto

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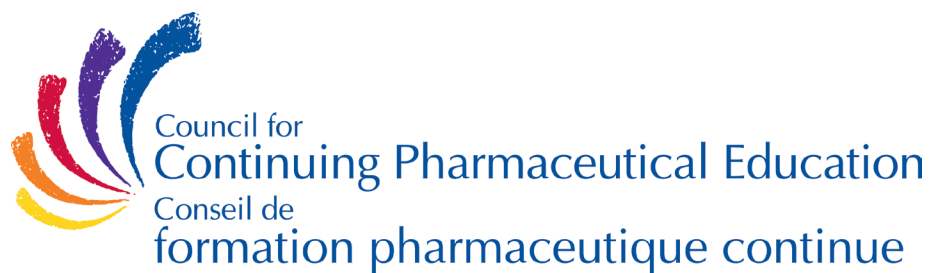
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CPERC 2019
Sessions Information

Roundtable Sessions

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ROUNDTABLE SESSIONS
Current Topics in Pharmacy Education

Session overview: AFPC's roundtable discussions are informal platforms designed to allow for interactive information exchange on current topics in pharmacy education. They provide a venue to meet colleagues with similar interests and with varying perspectives. The session will be a "speed-dating" format of dialogue, networking and collaboration, with 1-2 discussion facilitators at each table. Participants take a seat at a table of their interest and share their experiences, ideas, concerns, solutions, and learn about what others are doing or thinking around the topic. Participants will rotate to different tables at 30-minute intervals, for a total of three rotations.

Moderator: Christine Hughes, University of Alberta

Table #1: **Preparing students for value-based practice**

Facilitators: Natalie Kennie-Kaulbach, Dalhousie University
Todd Sorensen, University of Minnesota

Table #2: **Gamification in pharmacy education**

Facilitators: Renette Bertholet, University of Alberta
Marie Rocchi, University of Toronto

Table #3: **Scholarship of Teaching and Learning**

Facilitators: Simon Albon, University of British Columbia
Kristin Janke, University of Minnesota

Table #4: **Keeping curriculum current: incorporating hot topics (e.g. cannabis, opioid crisis, deprescribing)**

Facilitators: Kelly Grindrod, University of Waterloo
Julie Méthot, Université Laval

Table #5: **Graduate student/research trainee supervision**

Facilitators: Beverly FitzPatrick, Memorial University
Ed Krol, University of Saskatchewan

Table #6: **Entrustable Professional Activities**

Facilitators: Andrea Cameron, University of Toronto
Kerry Wilbur, University of British Columbia

Table #7: **Addressing new CCAPP accreditation standards**

Facilitators: Isabelle Lafleur, Université de Montréal
Lavern Vercaigne, University of Manitoba

Table #8: **Stigma training (e.g. mental health, STBBIs)**

Facilitators: Christine Hughes, University of Alberta
Jason Perepelkin, University of Saskatchewan

Roundtable 1   Preparing students for value-based practice

Facilitators: **Natalie Kennie-Kaulbach, BSc(Pharm), ACRP, PharmD, RPh**
University Teaching Fellow
Coordinator, Skills Lab II
College of Pharmacy, Dalhousie University

Todd D. Sorensen, Pharm.D., FAPhA, FCCP
Professor and Associate Department Head
Department of Pharmaceutical Care and Health Systems
College of Pharmacy, University of Minnesota

Overview:

We are in the midst of an era where the factors that influence decision makers with respect to distribution of resources associated with the delivery of health and compensation for services is shifting. The previous model of restricting eligibility to provide certain health care services to specific providers and simply providing payment for the delivery of that service is dissipating. New models of care and compensation are seeking to align the most effective and efficient provider with the opportunity to deliver services. "Value-based care" is a principle that is driving changes in health care delivery in today's marketplace. As a result, pharmacists must focus on delivering services through which they can produce more value in the health system than other health care personnel.

In preparing pharmacists for the health care workforce, educators must consider how students understand and convey the unique value they bring to a health care team. The purpose of this roundtable discussion is to explore educational strategies, opportunities and current efforts to prepare graduates who understand the dynamics of value-based decision making in health care and are able to articulate the manner in which pharmacists create value.

Discussion Questions:

1.   To what degree do graduates of your program understand what value pharmacists contribute to health care in Canada? How well can new graduates present a compelling case of value for services delivered by pharmacists to non-pharmacist administrator?

2.   How does your program help students understand the unique elements of a pharmacist's patient care process compared to other health disciplines?

3.   To what degree is there consistency across Canadian schools of pharmacy in teaching a common patient care process that can clearly differentiate the patient care work of pharmacists from other health disciplines?

4.   What examples of value-based decision making in health care making are present in your province? How is this affecting pharmacy practice or how might it affect it in the future?

5.   What role should experiential education plan in preparing students for practice in a health system that is becoming more focused on the value that disciplines provide?

Roundtable 2   Gamification in pharmacy education

Facilitators: **Marie Rocchi B.Sc.Phm., M.Ed.**
Associate Professor, Teaching Stream
Academic Director, International Pharmacy Graduate Program
Leslie Dan Faculty of Pharmacy
University of Toronto

Renette Bertholet, BScPharm, PharmD
Associate Clinical Professor
Faculty of Pharmacy and Pharmaceutical Sciences
University of Alberta

Overview:

Evidence has shown that active learning promotes social skills, general knowledge and practical competencies (Umbach & Wawrzynski, 2005). Gamification is one type of active learning and has emerged in recent years as a learning strategy with great potential for motivating millennial learners. In pharmacy education, the Academic Affairs Committee of AACP recommended the development of "serious games" (the use of game principles for learning, skill acquisition and training) in US colleges and schools.

Discussion Questions:

1. Have you considered using games or gamification as an active learning strategy in your course/faculty/school?   If so, what motivated you?   What did you consider in the development of your activity? Can you explain the "game(s)"? What were the results?

2. What do you consider as potential benefits of using gamification? What are the barriers or risks you might or have encountered? What strategies did you use to seek buy-in? Implement? Assess the activity?

3. Now that we have explored gamification, do you think this strategy will play a significant role in higher education in the years to come?   Are you considering incorporating elements of gamification in your course or program?

Roundtable 3   Scholarship of Teaching and Learning

Facilitators: **Simon Albon, PhD**
Professor of Teaching
Faculty of Pharmaceutical Sciences
University of British Columbia

Kristin Janke, PhD
Professor, Pharmaceutical Care & Health Systems
Director, Wulling Center for Innovation & Scholarship in Pharmacy Education
College of Pharmacy
University of Minnesota

Overview:

Evidence suggests that educational scholarship and the Scholarship of Teaching and Learning (SoTL) are gaining traction in academic pharmacy in Canada and the US. In the past two years for example, both AFPC and AACP have sponsored events aimed at advancing the quality of pharmacy education through educational scholarship and research, the Rx Writing Challenge offered twice a year now attracts well over 1000 participants in Canada, the US and beyond, new funding opportunities have appeared (AACP's SoTL grant program) and a broader national and international conversation has emerged about the importance of the field in academic pharmacy reflected, in part, by conference keynote addresses, panels, presentations, and posters. While all positive signs of growth and interest, emerging pharmacy education researchers often feel isolated, require more training and support, and don't know who to turn to for help. In short, the field is still in its infancy.

This roundtable discussion intends to explore these issues with the intent of moving the field forward. Following a series of guiding questions, we hope to gather success stories, establish needs and set a game plan for advancing educational scholarship and SoTL in academic pharmacy. Lessons learned, challenges and current strategies for success will be an important part of the conversation. Themes generated will be shared with roundtable participants and during large group discussions.

Discussion Questions:

1. How are you advancing the quality of pharmacy education in your school through educational scholarship and research? What areas of curriculum and pedagogical practice have you focused on? What are your research success stories?

2. What are some of the most promising areas for education related inquiry in pharmacy education today? What teaching-learning challenges keep you up at night? What are your students most struggling to master in your disciplinary area? How will this research focus help advance the quality of pharmacy education and practice?

3. What would you most like to learn that would strengthen your ability to engage in and contribute to education-related scholarship? What skills are you actively building/acquiring? If you are not currently involved but would like to, what is holding you back?

4. What conditions and capacity-building strategies within Faculties/Schools are allowing people to be successful educational researchers? How did you make these happen?

5. What suggestions do you have for moving the field forward? Where should we focus our energies?

Roundtable 4 Keeping curriculum current: incorporating hot topics (e.g. cannabis, opioid crisis, deprescribing)

Facilitators: **Kelly Grindrod, BScPharm, PharmD, MSc**
Associate Professor
School of Pharmacy
University of Waterloo

Julie Méthot, BPharm, PhD
Professeure agrégée,
Directrice du programme de Maîtrise en pharmacothérapie avancée
Faculté de pharmacie
Université Laval

Overview:

The pharmacy profession is constantly evolving. With each change, the curricula must also change, often with very little notice. For example, pharmacists' scopes of practice are expanding, as are the scopes of practice for students and technicians. From a clinical standpoint, new and emerging topics that have been important for pharmacists in recent years have included the opioid crisis, deprescribing, and the legalization of both cannabis and medical abortion. Pharmacists are also becoming frontline public healthcare professionals and need to be trained to provide a growing number of vaccinations and harm reduction services. The purpose of this roundtable discussion is to explore strategies, opportunities and current efforts to keep content current in our entry-to-practice curricula.

Discussion Questions:

1. Which topics have you added to your curriculum over the last 5 years?

2. How has your own program managed to adapt to the changes? How quickly were you able to add a new topic?

3. Sometimes when something is added, something else must be removed. How does your program decide what you will focus on in the coming year?

4. Think back to the last time your program was a bit slow in adding a new and emerging topic. What held you back the most? What helped?

5. Can you think of any examples of out-dated content that we continue to teach in pharmacy?

6. Over the next 5 years, which topics should we consider adding to our curricula?

Roundtable 5   Graduate student / research trainee supervision

Facilitators: **Beverly FitzPatrick, PhD**
Assistant Professor
School of Pharmacy
Memorial University

Ed Krol, PhD
Professor
College of Pharmacy & Nutrition
University of Saskatchewan

Overview:

Pharmacy schools have traditionally offered graduate programs in science, drug discovery, and health outcomes. More recently, a few Schools are including the scholarship of teaching and learning. Faculty members in the science streams of our pharmacy schools have PhDs and strong research backgrounds. They are experienced in research methodologies and methods, and prepared to supervise Masters and PhD students. But what about many of our clinical faculty who have PharmDs? Many are expected to supervise graduate students, but do they have the academic backgrounds to do so? Is this a reasonable requirement? What can be done to help faculty who want to supervise graduate students but do not have the pre-requisite skills?

Discussion Questions:

1. What academic and experiential backgrounds should faculty have to supervise a Masters or PhD student? Should there be criteria?

2. What are the responsibilities of a supervisor of a graduate student, Masters or PhD, in a School of Pharmacy?

3. How do supervisors determine which applicants would be an appropriate fit for graduate studies in their group?

Roundtable 6   Entrustable Professional Activities

Facilitators: **Andrea Cameron, BScPhm, MBA**
Associate Professor, Teaching Stream
Leslie Dan Faculty of Pharmacy
University of Toronto, Toronto, ON

Kerry Wilbur BSc(Pharm), ACPR, PharmD, MScPH, FCSHP
Associate Professor & Executive Director | Entry-to-Practice Education
Faculty of Pharmaceutical Sciences
The University of British Columbia, Vancouver, BC

Overview:

Entrustable professional activities (EPAs) represent a relatively new assessment framework first proposed and adopted internationally by graduate medical education; it is now garnering interest in other healthcare professions, including pharmacy. CCAPP accreditation standard criterion 1.2 now describes aspects of a program's EPAs as examples of evidence supporting student demonstration of practice-readiness (CCAPP 2018).

The premise of this concept is that the competencies possessed by a health professional trainee must be those applied in clinical contexts. An EPA has been defined as "a unit of professional practice" that, according to the opinion of leaders in the respective health professional field, must be assessed and approved during training (ten Cate 2013). An EPA is therefore a discrete collection of tasks that a clinical supervisor entrusts to a student with unsupervised responsibility once the student has demonstrated the necessary competence.
The purpose of this roundtable discussion is to engage participants in a pragmatic exploration of why and how pharmacy educators should be familiar with the concept.

Discussion Questions:

1. What are the origins and rationale for entrustable professional activities as a workplace-based assessment strategy in health professions education?

2. Has your school begun to explore EPAs? How?

3. How can schools collaborate nationally on EPA initiatives/approaches to workplace-based assessment?

Roundtable 7   Addressing new CCAPP accreditation standards

Facilitators: **Isabelle Lafleur, M. Sc.**
Assistant to vice-deans (Academic)
Faculté de pharmacie
Université de Montréal

Lavern Vercaigne, BSc(Pharm), PharmD
Associate Dean (Academic)
College of Pharmacy
Rady Faculty of Health Sciences
University of Manitoba

Overview:

The new CCAPP accreditation standards were effective in January 2018. The focus of the new accreditation standards is on continuous quality assurance of the program with an organized educational framework that facilitates development of graduates. Since CCAPP considers evaluation of accredited pharmacy programs to be a continuous process, schools need to put structures in place to support this. Schools of pharmacy have developed different strategies, tools and methods to address the new standards. How is your school addressing the new CCAPP accreditation standards? Come to our roundtable in order to share your experience and hear ideas from other schools.

The purpose of this roundtable discussion is to explore different ways to address new CCAPP accreditation standards.

Discussion Questions:

1. The new standards introduce the demonstration of practice-readiness in Criterion 1.2. Have you thought of examples of evidence to support this new criterion? Are you planning to utilize entrusted professional actiities for your curriculum?

2. Standard 22 requires that governance structures are in place to conduct regular systematic reviews of the curricular content, structure, process and outcomes. What structures do you have in place to address this requirement for program evaluation and continuous quality improvement? Do you need to review your governance structures? If yes, how are you planning to do that?

3. Wellbeing of students is becoming more and more important in universities. CCAPP standards address this in Standard 23: "Students are supported and have a positive, safe, inclusive, non-discriminatory, inspiring experience while enrolled in the professional program of pharmacy". Do you have an increase in accommodations for students? If so, what types of accommodations are most common? What are you doing to support the wellbeing of students in your school?

4. The new standards may require more resources (e.g. human, financial and time). What resources do you have in place at your school to help support faculty in addressing these standards? Can you provide some examples?

Roundtable 8   Stigma training (e.g. mental health, STBBIs)

Facilitators: **Christine Hughes, BScPharm, PharmD**
Professor
Faculty of Pharmacy and Pharmaceutical Sciences
University of Alberta

Jason Perepelkin, BA, BComm, Msc, PhD
Associate Professor
College of Pharmacy and Nutrition
University of Saskatchewan

Overview:

Stigmatization of people living with mental illness, substance use, as well as those living with or vulnerable to sexually transmitted and blood-borne infections (STBBIs) is common, including in the healthcare environment. Stigma is well recognized as a barrier to patient care, both in terms of individuals seeking care as well as continuing treatment. Research has shown that additional training on reducing stigma within the undergraduate pharmacy program as well as post-graduate training programs can reduce negative attitudes and improve comfort level when providing patient care.

Pharmacists are increasingly providing expanded pharmacy services that may be particularly valuable for vulnerable populations that may have stigmatized illnesses and complex health needs. However, pharmacists' lack of awareness of stigma can not only impact patient care, but also impact learners who observe stigmatizing behaviour. Thus, both the formal curriculum and "hidden" curriculum are important in shaping future pharmacy professionals.

Are students adequately prepared in the entry-to-practice program to provide care for patients with stigmatized illnesses? What about other populations that experience stigma based on sexual orientation, gender identity, ethnicity, or religion?

The purpose of this roundtable discussion is to explore strategies, opportunities and current efforts to incorporate stigma training in our entry-to-practice curricula.

Discussion Questions:

1. Has stigma training been added to the entry to practice curriculum at your university? If so, is training provided within a specific area or context? (e.g., mental illness, HIV, substance use, LGBTQ2S, etc)

2. How is stigma training delivered in the curriculum at your university? (e.g., teaching methods). Are there specific curricular outcomes or does each instructor decide what to cover on their own?

3. To what degree do you think graduates of your program are prepared to deal with stigmatized populations?

4. How do you think graduates of your program could be better prepared to deal with stigmatized populations?

5. Are there any resources or tools that you have found useful for providing education/training on stigma?

MINI-SESSION ABSTRACTS

Mini-Session #1: Alternatives to didactic lecturing

Moderator: Ann Thompson, University of Alberta

1. Using educational games to develop inter-professional collaboration skills
   Terri Schindel, University of Alberta

2. Teaching communication skills: straightforward ways to incorporate student made videos into your classroom
   Lisa Guirguis, University of Alberta

Mini-Session #2: Evidence and competency make for quality

Moderator: Beverly FitzPatrick, Memorial University

3. Basing pharmacy education on evidence: a quality improvement framework
   Gilles Leclerc, Université de Montréal

4. Entrustable professional activities: exploring implementation into competency-based assessment of pharmacy experiential learning
   Samuel Chan, University of Toronto

Mini-Session #3: A panoramic view of two educational initiatives

Moderator: Ann Thompson, University of Alberta

5. Marijuana content in Canadian undergraduate pharmacy programs: a national survey
   Kerry Wilbur, University of British Columbia

6. Small but mighty: the current state of educational scholarship and SoTL in academic pharmacy
   Simon Albon, University of British Columbia

Mini-Session #4: Complexities in learning and teaching

Moderator: Jason Perepelkin, University of Saskatchewan

7. Stress-o-meter: understanding pharmacy student anxiety
   Gilles Leclerc, Université de Montréal

8. Curriculum design, workload, and learning: a conundrum seeking for time
   Gilles Leclerc, Université de Montréal

Using educational games to develop interprofessional collaboration skills

Theresa J. Schindel [1], *Jill Hall* [1], *Teresa Paslawski* [2]

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Interprofessional collaboration is recognized as an important strategy in health care. It is associated with efficiencies in healthcare, quality outcomes for patients, and greater satisfaction for care providers. As the focus of health professionals' roles shift to emphasize interprofessional collaboration, effective instructional strategies are needed to meet educational requirements for collaboration as a core competency in pharmacy programs. Various teaching approaches have been delivered through interprofessional education, laboratory, simulation, and experiential education. However, additional strategies for delivery in the classroom are needed to prepare students for collaboration. Games have been associated with enhancing student engagement, increasing motivation, and supporting the learning process. The use of games also provides opportunities for critical thinking and problem solving. Educational games have potential in teaching teamwork and collaboration skills in the classroom setting. The purpose of this presentation is to describe our experiences using educational games to further develop the skills required for effective collaboration including teamwork, leadership and communication. We based our approach on the work of academic clinicians representing three health professions (Lake, Berg & Paslawski, 2015) directed towards a uni-professional audience in the Doctor of Pharmacy programs at the University of Alberta. The games were delivered through interprofessional collaboration of instructors that modeled collaboration in the clinical setting. Descriptions of the educational games, our approach to teaching, adaptations for small and large groups, the process and importance of debriefing, and students' experiences will be highlighted.

Summary: As the focus of health professionals' roles shift to emphasize interprofessional collaboration, effective teaching approaches are needed to meet educational requirements for collaboration as a core competency in pharmacy programs. Descriptions of the educational games, our approach to teaching, adaptations for small and large groups, the process and importance of debriefing, and students' experiences will be highlighted.

Teaching communication skills: straightforward ways to incorporate student made videos into your classroom

Lisa M Guirguis

Faculty of Pharmacy and Pharmaceutical Sciences, University of Alberta

Goals: 1) To share easy low tech and low budget approaches to using student-made videos to rehearse communications skills. 2) Illustrate a layered debriefing structure and 3) Share resources that are adaptable to other pharmacy learning environments.

Description: This presentation will share three examples of a student-driven approach to using videos to teach communication skills. Today's students do not require you to provide a video camera - it's in their back pocket - nor instructions on how to make, edit, or post videos. These activities were all conducted in under two hours, with time for group work in teams of eight followed by a large group debrief. Students were provided with a case stem and specific communication skill. Each group produces one video under three minutes in length, typically featuring a pharmacist and patient. Creativity, humour, and full group participation in the video are encouraged, but not required. Students share links with the entire class by posting links to their videos in the class online learning management system using google drive or host site of their choice. Before the large group debrief, students exchange videos and feedback with another group a guided feedback form. In the large group debrief, a selection of videos are reviewed with "expert" feedback providing the consistency students crave and usually quite a few laughs. I will share examples using empathy, patient education, and shared decision-making skills as the focus. The patient situations include using eye drops, choosing a coffee shop or becoming a new parent.

Relevance to Pharmacy Education: Students require practice and feedback to develop strong communication skills. However, large class sizes and limited teaching resources can make it challenging to engage students in multiple opportunities to rehearse their skills. This student-driven approach allows for practice and tailored feedback before students encounter more resource intensive lab simulations or experiential education.

Session summary: How do we provide sufficient opportunities for our students to develop strong communication skills with limited resources? This session will illustrate three examples of using student-made videos in your classroom to provide tailored class feedback in less than two hours. You will be provided with materials to adapt to your learning environments including learning objectives, assignment instructions, and debriefing tools.

Basing pharmacy education on evidence: a quality improvement framework

Gilles Leclerc [1], Isabelle Lafleur [1], Nathalie Letarte [1,2,3], Ema Ferreira [1,4]

[1]_Faculté of Pharmacie- Université de Montréal,_
[2]_CHUM - Centre hospitalier de l'Université de Montréal_
[3]_CRCHUM – Centre de recherche du CHUM_
[4]_CHU Ste-Justine_

Goals: Curriculum governance constantly struggles with constraints, demands and resource availability in order to adapt the pharmacy curriculum to the current educational and professional standards. Our assumption is that efficient information gathering provides support to evidence-based decisions in pharmacy education. How the University of Montreal, Faculty of Pharmacy plans to use evidence for curriculum quality improvement will be presented in this session.

Description: Evidence must inform academic decision makers and drive educational interventions just as it has done in clinical practice. Academic institutions have a duty to consider proper evidence and, in their absence, to generate, store and communicate such evidence in order to support sound educational decision-making processes. The University of Montreal Faculty of Pharmacy Quality improvement Framework (UMFP-QIF) binds to these principles and plans to put into contribution data with high probity level in program evaluation. The UMFP-QIF will be presented. The challenges and benefits of using high probity data in program evaluation will be outlined. The current availability of such data in pharmacy education will be discussed.

Relevance to Pharmacy Education: Though Faculties of Pharmacy across Canada may be struggling with some specific local issues, they are undoubtedly facing common challenges, sharing many goals, and looking to achieve similar outcomes. Reflecting further on the benefits and challenges of evidence-based quality improvement decision making will guide Canadian Faculties of pharmacy toward the implementation of quality improvement programs adapted to their educational and professional needs.

Session Summary: Continuous quality improvement is of growing importance in pharmacy education. Our assumption is that evidence must inform academic decisions makers and drive educational interventions. How the University of Montreal, Faculty of Pharmacy plans to use evidence for curriculum quality improvement will be presented in this session.

Entrustable professional activities: exploring implementation into competency-based assessment of pharmacy experiential learning

Samuel C. Chan, _Andrea J. Cameron_

Leslie Dan Faculty of Pharmacy, University of Toronto, Toronto, Ontario, Canada

Goals: Entrustable professional activities (EPAs) represent a relatively new assessment framework first proposed and adopted internationally by graduate medical education; it is now garnering interest in other healthcare professions, including pharmacy. This session will introduce the concept of EPAs, briefly review current evidence of EPAs in pharmacy education, and highlight its benefits and criticisms. Within the context of the University of Toronto's experiential program, an example of how EPAs could be implemented into experiential assessments will also be provided.

Project Description: A literature search was conducted to find relevant articles reviewing EPAs and studies implementing an EPA assessment framework into pharmacy experiential learning. Using insights from other programs and consultation with course coordinators, an example of how EPAs could be integrated into existing experiential assessments was developed. The proposed EPA framework would focus on assessing patient care processes, such that it functions as a developmental roadmap for learners by identifying discrete assessment outcomes for task-oriented professional activities, creating value to both students and preceptors. Implementing EPAs in concert with an existing broader competency-based assessment tool should increase the likelihood of developing graduates that can complete specific professional tasks, yet also embody the profession itself.

Relevance to Pharmacy Education: The need to ensure that students graduate with specific minimum competencies is important in order to maintain the established public trust between pharmacists and patients. This is especially true amidst the current landscape in Canada where pharmacists are increasingly expected to assume more clinical responsibilities. With Canadian pharmacy schools all adopting the Doctor of Pharmacy curriculum, which has a stronger component of experiential learning, having a solid competency framework for experiential assessment is critical to developing pharmacy graduates able to meet educational outcomes.

Session Summary: To maintain a high level of public trust, pharmacy programs must ensure that learners graduate with a minimum level of competency in the stated educational outcomes. The entrustable professional activities (EPAs) assessment framework is increasingly being adopted by healthcare professional programs. The goals of this presentation are to review the EPA concept and provide an example of how it can be implemented into an existing competency-based assessment of pharmacy experiential learning.

Marijuana content in Canadian undergraduate pharmacy programs: a national survey

Garrett Tang, Jonathan Schwarz, Karen Lok, Kerry Wilbur

University of British Columbia - Faculty of Pharmaceutical Sciences

Background: The *Cannabis Act* marks marijuana's transition from a largely illicit substance to a publicly available product presenting new responsibilities for pharmacists in Canada. However, in existing studies students and practitioners self-report poor knowledge and low confidence in patient and interprofessional encounters associated with marijuana. We conducted a national survey of pharmacy programs to inventory curricular content in any way related to marijuana in order to further guide approaches to overcome such deficits.

Methods: Key informants at each of the 10 faculties were identified and emailed a questionnaire. The items were informed by a literature search and included questions pertaining to the types of courses where content might be delivered, the focus of topic coverage, instructional modality and devoted time. Respondents were asked to offer their own views of perceived barriers to marijuana incorporation in their curriculum and any future plans. Questionnaire data was submitted through a web-based platform and the findings anonymized and aggregated.

Results: We received responses from all ten faculties and nine identified marijuana content in their curriculum. Rank order topics included: pharmacology and associated therapeutic and adverse effects; evidence for current indications; dosage formulations; patient counseling; regulation and access; and societal implications. Instructional time was often lecture-based (52%) within required courses and ranged from 0.5 to12.5 hours. Most key informants indicated plans to add or increase future content. Reported barriers were inadequate time available in the curriculum (60%), perceived lack of strong therapeutic evidence (40%), absence of local content expert (20%), and uncertainty regarding evolving legislation and policy (20%).

Conclusions: Our survey of marijuana content in Canadian undergraduate pharmacy education found disparity across current program curricula. Despite challenges associated with an unfolding regulatory framework and perceived lack of instructor expertise, greater integration of communication and commercial topics to complement existing emphasis on cannabis pharmacologic properties and effects is likely warranted as programs continue to revise content.

Small but mighty: the current state of education scholarship and SoTL in academic pharmacy

Simon P. Albon,[1] _Kristin K. Janke_ [2]

[1]_University of British Columbia Faculty of Pharmaceutical Sciences_
[2]_University of Minnesota College of Pharmacy_

Goals/Intent of the Presentation: This oral presentation will report on participant feedback collected from the AFPC CPERC 2018 Symposium and 2017 AACP Institute on educational scholarship. Findings from pre-event and 6-month follow-up surveys will provide Canadian and US perspectives on the current state of educational scholarship and SoTL in academic pharmacy as well as recommendations for strengthening the field.

Description of the Project: Education scholarship and the Scholarship of Teaching and Learning (SoTL) are gaining traction in academic pharmacy as legitimate forms of scholarly activity. Recognizing the intellectual work of teaching as scholarship and growing expectations for context-specific, evidence-based and research-informed curriculum decision-making are driving interest and engagement in the field. Improvements in student achievement, curriculum and pedagogical practices, and the student experience are important aspects of the emerging research agenda. Recently, both AFPC and AACP have sponsored events aimed at supporting and building capacity for educational scholarship and SoTL in academic pharmacy. Attracting small but enthusiastic groups of faculty with varying backgrounds, research experience, and understanding of educational scholarship and SoTL, these events have provided a window into the energy and commitment faculty are bringing to their scholarly endeavors, what they are struggling with, and the faculty development needs and institutional supports required to improve. This oral presentation will report on findings from pre-event and 6-month follow-up surveys collected from participants in the AFPC CPERC 2018 Symposium and 2017 AACP Institute on educational scholarship. Canadian and US perspectives on the current state of educational scholarship and SoTL in academic pharmacy will be shared along with recommendations and strategies for continued growth of the field. Audience members will be encouraged to join the conversation.

Session Summary for Conference Program: Are you interested in educational scholarship? Do you ever wonder how much traction the Scholarship of Teaching and Learning has in academic pharmacy? Are you looking to improve your knowledge and skills as an educational researcher? This presentation will report on participant feedback collected from the AFPC CPERC 2018 Symposium and 2017 AACP Institute on educational scholarship. Findings from pre-event and 6-month follow-up surveys will provide Canadian and US perspectives on the current state of educational scholarship and SoTL in academic pharmacy as well as insights and recommendations for strengthening the field.

Stress-O-Meter: Understanding pharmacy student anxiety

Gilles Leclerc [1], _Myriam Grefford_ [1], _Antoine Marquis_ [1], _Nathalie Letarte_ [1,2,3], _Isabelle Lafleur_ [1], _Ema Ferreira_ [1,4]

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Goals: Issues about stress, anxiety, and mental health are becoming more prevalent in higher education. Student well-being is now an unavoidable driver of policy making, program development, service delivery and resource allocation in academic institutions. Such actions aim to create a more inclusive environment and supportive climate in order to help students cope and manage stress, anxiety or mental issues. Several initiatives have been undertaken by the University of Montreal, Faculty of Pharmacy to better understand the stakes of this issue in pharmacy education and to eventually adapt the learning experience accordingly. In this session, one initiative, the Stress-o-meter (SOM), will be presented.

Description: The SOM is an initiative, developed and managed by the Faculty of pharmacy in collaboration with the pharmacy student association. This web-based tool was initially designed to capture in real time the intensity, the circumstances, and the causes of pharmacy students' stress but it has also been used to provide a free round-the-clock access to self-managed stress preventive resources. It was made available as a pilot project to Pharm. D. students and to the International Pharmacists Program Students during the Fall 2018 and Winter 2019 semesters. This session will display the SOM and will present its implantation process, the evaluation protocol and the pilot project results. Furthermore, the interest shown in this resource by other faculties, the challenges of its implementation and the next upcoming steps will be discussed and outlined.

Relevance to Pharmacy Education: This session offers pharmacy educators the opportunity to better understand the challenges of student stress, anxiety, and mental health in pharmacy education, and to reflect on a promising approach easily implementable in all academic environment.

Session Summary: Issues about stress, anxiety, and mental health are becoming more prevalent in higher education. Many initiatives have been undertaken by the University of Montreal Faculty of pharmacy to better understand the stakes of this issue in pharmacy education. One of them, the Stress-o-meter (SOM), will be presented.

Curriculum design, workload and learning: a conundrum seeking for time

Gilles Leclerc [1], _Isabelle Lafleur_ [1], _Nathalie Letarte_ [1,2,3], _Ema Ferreira_ [1,4]

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[4]_CHU Ste-Justine_

Goals: Students' time spent studying is an undeniable predictor of learning. When delivering a curriculum, making a fair fit between workload and allocated study time is essential. A measurement tool implemented to initially raised awareness and eventually guide the adjustment of course workload and its allocated time has been developed. The implementation process, evaluation protocol and examples of workload calculation will be presented.

Description: Pharmacy curricula are demanding and often perceived as overloaded. In a field where the body of scientific and clinical knowledge is constantly growing and evolving, where new scientific disciplines and learning domains are emerging, such situation could be considered unavoidable. With students' wellbeing issues drastically increasing in higher education due to stress, this overloading of curriculum should be addressed and avoided. Insofar as the interaction between workload and study time has been defined as critical for learning, simply recognizing that time is needed for learning is not sufficient. Actions must be taken. Determining sufficient time and proper conditions supportive of in-depth learning and effective knowledge integration is imperative but must be done carefully. Inspired by the Determining Study Time Model of the University of Oulu (Finland), the University of Montreal, Faculty of Pharmacy has developed a Course Workload Measuring Tool (CWMT). The CWMT has been tested, reviewed and is being implemented.

Relevance to Pharmacy Education: The CWMT will provide professors, program managers and curriculum designers' insight into proper course and program workload estimation. Its implementation will give a portrait of the student workload and advocate for proper learning conditions and sufficient study time. It is hypothesized that it will contribute in enabling in-depth learning of the curriculum core components, support professional development in pharmacy education and improve student wellbeing.

Session Summary: Students' time spent studying is an undeniable predictor of learning and curricular achievement. When delivering a curriculum, balancing between workload and allocated study time is essential but difficult. A measurement tool developed to estimate the program workload and to guide curriculum adjustment will be presented.

SIG EDUCATION SESSION ABSTRACTS

Truth & Reconciliation SIG

Moderator: Jaris Swidrovich, University of Saskatchewan

1. Co-developing a transformative indigenous health practicum in community
   Presenter: Larry Leung, University of British Columbia

2. The pharmacy experience of embedding an interprofessional UBC health-wide indigenous cultural safety curriculum
   Presenter: Jason Min, University of British Columbia

3. The state of indigenization in Canadian pharmacy programs
   Presenter: Jaris Swidrovich, University of Saskatchewan & Elaine Lillie, University of Waterloo

Program Evaluation SIG and Educational Assessment SIG

Moderator: George Pachev, University of British Columbia

4. Evidence of practice-readiness for culminating practice experience: from documentation describing program policy and design to indicators of competency achievement
   Presenters: Isabelle Lafleur, Université de Montréal & Aleksandra Bjelajac Mejia, University of Toronto

5. Evaluating the impact of additional PharmD bridging curriculum on The Pharmacy Examining Board of Canada (PEBC) licensing exam results
   Presenter: Ken Cor, University of Alberta

6. Continuous Quality Assurance Frameworks in Pharmacy Education
   Presenters: Isabelle Lafleur, Université de Montréal & Anne Marie Whelan, Dalhousie University & Robert Renaud, University of Manitoba

PEP-C Experiential Education SIG

Moderator: Kenneth Manson, University of Waterloo

7. Peer assisted learning in experiential placements: the perspective of pharmacy students
   Presenter: Michelle MacDonald, University of Alberta

Self-Care Therapeutics & Minor Ailments SIG

Moderator: Kenneth Manson, University of Waterloo

8. Empowering students in the classroom to raise the bar for practical patient self-care in the community
   Presenter: Nardine Nakhla, University of Waterloo

Medicinal Chemistry SIG

Moderator: Ed Krol, University of Saskatchewan

9. Teaching drug metabolism – a tale of two courses
    Presenter: Ed Krol, University of Saskatchewan

10. Why should I care? – student snapshots of learning medicinal chemistry in a PharmD program
    Presenter: Simon Albon, University of British Columbia

Informatics SIG

Moderator: Theresa Charrois, University of Alberta

11. Using technology to promote interprofessional learning about informatics
    Presenters: Lisa Bishop, Memorial University & Marie Rocchi, University of Toronto

Skills Lab SIG

Moderator: Theresa Charrois, University of Alberta

12. Using gamification in practice skills lab: implementation and value in student learning
    Presenter: Renette Bertholet, University of Alberta

13. Using a fictional malpractice case to build documentation skills
    Presenters: Kelly Grindrod & Cynthia Richard, University of Waterloo

Social & Administrative Pharmacy SIG

Moderator: Jason Perepelkin, University

14. A novel way to engage students in experiential preventive health education at a university-owned, pharmacist-led patient care clinic
    Presenter: Jamie Yuen, University of British Columbia

15. It's all about the BASE: a new approach to teaching social, administrative and information sciences across the entry to practice
    Presenter: Lisa Guirguis, University of Alberta

Co-developing a transformative indigenous health practicum in community

Larry L. Leung,[1] _Jason Min,_[1] _Gilly Lau,_[1] _Glenda Phillips_ [2]

[1]_Faculty of Pharmaceutical Sciences, University of British Columbia_
[2]_Hailika'as Heiltsuk Health Centre Society_

Description: In response to the Truth and Reconciliation Commission of Canada Calls to Action and the shared desire to create more immersive learning opportunities, UBC's Pharmacists Clinic, Office of Experiential Education and Indigenous community partners have collaborated to create a novel 4-week elective practicum in Indigenous Health. This presentation will focus on our key learning lessons in the co-development of this practicum.

In this practicum, students travel to Bella Bella and Mount Currie, Indigenous communities in British Columbia, to work alongside the Hailika'as Heiltsuk Health Centre Society and Lil'wat Health and Healing in the delivery of culturally-safe care. Through intensive community engagement, students will be impactful participants and experience the importance of knowledge keepers and community contexts in the understanding of pharmacy practice. Students will gain an appreciation for Indigenous perspectives on health and healing and explore the significance of working respectfully and collaboratively with Indigenous people.

The presenters will share their experiences and process in building this practicum and discuss the following learning lessons:
1) Fostering meaningful partnerships based on mutual respect and trust to address community-identified needs.
2) Preparing students with appropriate community-identified resources, readings and cultural safety and humility training.
3) Collaborating with community to build learning objectives and activities that reflect community values.

The presenters will also share student, preceptor, and community perceptions of their experiences and provide specific examples of the unique and transformative learning opportunities available.

Goals: 1. Discuss key learning lessons in fostering meaningful collaboration and partnerships with Indigenous community partners. 2. Describe practicum learning objectives and activities. 3. Share student, preceptor, and community perceptions of the 4-week Indigenous health elective practicum.

Relevance to education: As pharmacy schools across Canada modify curricula to include greater indigenous health content, meaningful application in experiential education is an important component that comes with different pedagogical opportunities. This presentation will share the lessons learned of a practicum that can be translated and utilized by faculties across Canada.

Session summary: The UBC Faculty of Pharmaceutical Sciences' Pharmacists Clinic and Office of Experiential Education has partnered with two Indigenous communities to build a 4-week experiential practicum in Indigenous health. Presenters will share learning lessons in building this experiential learning opportunity and student, preceptor and community perceptions of the transformative experience thus far.

The pharmacy experience of embedding an interprofessional UBC health-wide indigenous cultural safety curriculum

Jason Min [1], _Larry Leung_ [1]

[1]_Faculty of Pharmaceutical Sciences, University of British Columbia_

Description: In alignment with Institutional strategic priorities for enhanced interprofessional education and impactful response to the Truth and Reconciliation Commission of Canada Calls to Action, this presentation will describe the development and implementation of a 6-part, Indigenous Cultural Safety (ICS) curriculum at the University of British Columbia (UBC).

This innovative curriculum was a collaboration between internal and external Indigenous knowledge keepers, and all 13 health discipline programs at UBC, including pharmacy, medicine, and nursing. ICS spans 11.5 hours of instruction and consists of two different learning environments: (i) two face-to-face interprofessional workshops co-facilitated by one Indigenous knowledge keeper and one trained faculty member, and (ii) four online interactive learning modules. Topics covered included cultural safety, Indigenous people and land, and allyship.

The presenters will share the process, lessons-learned and measured impact on student learning throughout the process from conceptualization to implementation. Specifically, the content development, pilot testing, facilitator training, integration in to existing curricula, and impact on students will be reviewed.

In this interactive session, the presenters will demonstrate some of the activities that students experience and will challenge participants to be advocates in advancing their institution's process of reconciliation. Cross collaboration and sharing of ideas will be encouraged.

Goals:
1. Discuss key learning lessons in the development and implementation of an Indigenous Cultural Safety curriculum
2. Walk-through a sample of the activities and resources to immerse participants in the student experience
3. Describe how this content fits with existing PharmD curricula, how future content could be built, and student feedback

Relevance to pharmacy education: As pharmacy schools across Canada modify curricula to include greater indigenous and cultural safety content, barriers of time, Faculty expertise, integration with pharmacy topics, and the interprofessional aspect of this learning persists. This presentation will share the foundations and lessons learned as an example of how these barriers can be overcome and stimulate discussion on how similar content can be utilized meaningfully by faculties across Canada.

The state of Indigenization in Canadian pharmacy programs

Jaris P. Swidrovich [1], _Elaine Lillie_ [2]

1. College of Pharmacy and Nutrition, University of Saskatchewan
2. School of Pharmacy, University of Waterloo

Indigenizing education has become a national priority. The Truth and Reconciliation Commission of Canada called on educational institutions and programs, including health professions programs, to respond meaningfully and in transformative ways to their Calls to Action. Universities Canada lists Indigenous Education as one of its five major priorities and the Association of Faculties of Pharmacy of Canada (AFPC) published a special note regarding the Truth and Reconciliation Commission of Canada's Calls to Action in its 2017 publication of the AFPC Educational Outcomes for First Professional Degree Programs in Pharmacy in Canada.

By implementing the AFPC Educational Outcomes 2017, the AFPC endorses that "every Canadian first professional degree in pharmacy program curriculum will place a high priority on advancing the process of reconciliation with Canada's First Nations, Métis and Inuit peoples by incorporating curriculum content in the first professional degree in pharmacy program, minimally to include "…Aboriginal health issues, including the history and legacy of residential schools, the United Nations Declaration on the Rights of Indigenous Peoples, Treaties and Aboriginal rights and Indigenous teachings and practices." (Truth and Reconciliation Commission of Canada, 2015). To the greatest extent possible and practical, curriculum will emphasize "skills-based training in intercultural competency, conflict resolution, human rights and anti-racism." (Truth and Reconciliation Commission of Canada, 2015) in relation to the key and enabling competencies defined in the AFPC Educational Outcomes 2017."

This concurrent session will share the results of a national survey conducted by the Truth and Reconciliation Special Interest Group (TRC SIG) regarding the state of Indigenization in Canadian pharmacy programs and will update delegates on the current and future plans of the TRC SIG.

Evidence of practice-readiness for culminating practice experience: from documentation describing program policy and design to indicators of competency achievement

Isabelle Lafleur [1], Aleksandra Bjelajac Mejia [2], Lachmi Singh [2], Gilles Leclerc [1], Kerry Wilbur [3], George Pachev [3], Kerry Alcorn [4], Yvonne Shevchuk [4], Ken Cor [5]

1 Faculté de pharmacie - Université de Montréal
2 Leslie Dan Faculty of Pharmacy– University of Toronto
3 Faculty of Pharmaceutical Sciences– University of British Columbia
4 College of Pharmacy and Nutrition– University of Saskatchewan
5 Faculty of Pharmacy and Pharmaceutical Sciences– University of Alberta

Goals: The Canadian Council for Accreditation of Pharmacy Programs (CCAPP) updated its standard in the *Accreditation standards for Canadian first professional degree in pharmacy programs* in January 2018. A new criterion (Standard 1, criterion 1.2.) specifies, «*Students demonstrate practice-readiness that enables them to provide patient care as collaborative member of a care team before starting culminating direct patient care required practice experience*». Faculties are now required to generate evidence to support that students demonstrate practice readiness prior to starting culminating practice experiences. The goal of the presentation is to describe the different approaches used at five schools of pharmacy across the country to generate evidence in support of the practice ready standard.

Description: From the development of indicators on the achievement of competencies to documentation about program design as well as descriptions of relevant program policy, schools will share their differing approaches to generating evidence. This initiative arose out of discussion in the AFPC Program Evaluation Special Interest Group (SIG) that identified a need to support collaboration on how to generate evidence for ongoing program evaluation based on the CCAPP accreditation standards. The presentation will include brief summaries of the approaches employed at Université de Montréal, University of Toronto, University of British Columbia, University of Saskatchewan and University of Alberta along with a summary of similarities and differences.

Relevance to pharmacy education: This presentation will benefit the whole pharmacy education community by illustrating various approaches complying with the standards of the Canadian Council for Accreditation of Pharmacy Programs.

Session Summary: The presentation compares five different approaches to generate evidence that students demonstrate practice readiness prior to starting their culminating practice experiences. The session includes a brief summary of each school's approach and highlights the similarities and differences.

Evaluating the impact of additional PharmD curriculum on The Pharmacy Examining Board of Canada (PEBC) licensing exam results

M. Ken Cor, Dion Brocks, Ravina Sanghera

Faculty of Pharmacy and Pharmaceutical Sciences, University of Alberta, Edmonton Alberta

Background: The University of Alberta (UofA) offers the only PharmD for Bachelor of Science Students (PBS) program in Canada. This program provides students an option to acquire a PharmD degree after having completed the first three years of the Bachelor of Science program. The PBS program adds 16 weeks of practice experience, two seminars, and replaces two options and three specialty electives with one specialty elective and three required courses titled: _Critical Analysis of Evidence_, _Patient Assessment_, and _Advanced Therapeutics, Collaboration, and Professional Learning_. There is a need to evaluate the impact of this curriculum on student performance.

Goals: The session demonstrates a method to evaluate the impact of curriculum change on student performance based on PEBC licensing exam results. Using the context of the new UofA PBS program, the session will explain how aggregate overall and competency-based PEBC licensing exam results for two sub-sets of students who graduated in consecutive years were used to assess impact of the PBS curriculum on student performance. The session will explain how comparison groups were created using admissions criteria along with methods to identify differences in overall and competency-based PEBC performance across the two groups. Results that detail differences in the strength of identified impacts will be presented. Limitations on inferences that can be drawn based on the analysis will also be described.

Relevance to Pharmacy Education: Evaluating the impact of large-scale curricular change on student learning is a challenging but necessary part of ongoing program evaluation efforts. The PEBC licensing exam offers a reliable and standardized outcome that can be used to support this type of evaluation. By demonstrating how PEBC licensing exam results were used to evaluate the impact of the UofA PBS program on student performance, this session provides a model for other schools of pharmacy across Canada to potentially conduct similar types of analyses.

Summary of Session: This session demonstrates a method to evaluate the impact of curriculum change on student performance based on PEBC licensing exam results. Using the context of the new University of Alberta PharmD for Practicing Pharmacists program, the session explains how aggregate overall and competency-based PEBC licensing exam results for two sub-sets of students were used to assess impact of the PBS curriculum on student performance.

Continuous quality assurance frameworks in pharmacy education

Isabelle Lafleur [1], *Anne Marie Whelan* [2], *Gilles Leclerc* [1], *Ruby Grymonpre* [3], *Robert Renaud* [3]

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Background: The Canadian Council for Accreditation of Pharmacy Programs (CCAPP) has placed greater emphasis on continuous quality assurance (CQA) in the *Accreditation standards for Canadian first professional degree in pharmacy programs* (January 2018). The continuous quality assurance of pharmacy programs involves regular systematic reviews of curriculum content, structure, process and outcomes. In order to achieve this, most Faculties of pharmacy are developing and implementing a framework for CQA.

Objectives: The goal of this presentation is for three Canadian Faculties of Pharmacy to each present their current CQA approach and to identify plans for an expanded program evaluation framework.

Description: This initiative came from members of the AFPC Program Evaluation Special Interest Group (SIG) following discussion of these CQA CCAPP Standards at SIG meetings. Specifically, this presentation will include a brief summary of the CQA approaches and frameworks applied by Université de Montréal, Dalhousie University and University of Manitoba. This will include, as appropriate, approaches to developing the framework as well as major components (such as evaluation questions, indicators, data sources, data collection methods and timelines). The presentation will also include a comparison of the three CQA approaches to identify similarities and differences.

Relevance to pharmacy education: Excellence in pharmacy education must go beyond annual course specific feedback from students. Effective evaluation requires not only ongoing and comprehensive review of curriculum content, structure, process and outcomes but also development and implementation of improvement strategies to improve noted weaknesses. This is not an easy task. By hearing the various approaches to CQA, this presentation promises to stimulate discussion around best practices in compliance with the CCAPP standards

Session Summary: The presentation will explore frameworks for continuous quality assurance from three pharmacy programs across Canada. The session includes a brief summary of each framework and highlights the similarities and differences between the frameworks.

Peer assisted learning in experiential placements: the perspective of pharmacy students

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With the implementation of PharmD programs, expanding experiential education placements is required. Peer-assisted learning (PAL) has become an important, expanding preceptor model utilized in experiential education to grow capacity, enhance student learning, and allow preceptors to expand their precepting practice and skills. Approximately 20% of placements offered to pharmacy students in Alberta utilize this model. There is little information available describing pharmacy students' perspectives and feedback on the use of PAL. This presentation will review the findings of a research project to explore student perspectives of PAL. The primary objective is to describe what pharmacy students have identified as the advantages and challenges of participating in PAL placements. Secondarily, students were asked to provide feedback regarding how to optimize future peer assisted learning experiences. Students from the University of Alberta pharmacy program, who participated in peer-assisted learning placements in the past 2 years, were provided a survey with questions to address the primary and secondary objectives. A summary of findings from this research will be presented, outlining student perspectives that may enhance the delivery and participation within these models.

Summary: Does your pharmacy program use peer assisted learning in experiential placements? Is this preceptor model being used with increasing frequency to expand capacity? This presentation will share research findings on the pharmacy student perspective of this model, and provide suggestions for optimizing its use.

Empowering students in the classroom to raise the bar for practical patient self-care in the community

Nardine Nakhla, Paul Malik

University of Waterloo School of Pharmacy

Session Description: We will present strategies for increasing the practical value of course content for students while simultaneously advancing practice standards in self-care. The opportunity to impact professional practice from the classroom motivates students not only toward better learning outcomes but also toward innovation, inspiring a sense of belonging in the classroom and in the profession. We demonstrate the application and evaluation of an infographic assignment which recognizes the diversity and creativity of students in the classroom.

Presentation Goals: To discuss solutions to the following thematic questions:
- *How can we increase the practical value of clinical course content for students?*
- *How can practice innovations in the classroom be shared with the broader pharmacy world?*
- *What teaching and community-building strategies can increase students' sense of belonging?*
- *How can we recognize the diversity of learners?*

Project Description: We empowered upper-year students to develop and publish innovative tools that will shape the standards of the retail pharmacy practice that they are about to enter. In the "Spotlight on Self-Care" assignment, each student was assigned one condition that would typically be treated from the self-selection area of the pharmacy. Each student created a two-page magazine infographic, a patient-friendly handout and a practice companion checklist to guide pharmacists in innovative, evidence-based and financially sustainable ways of providing medical care on that topic. A special emphasis was placed on practicality.

Relevance to pharmacy education: The diverse spectrum of assignments submitted spoke volumes to how each learner in the classroom took unique ownership over their topic and expressed how they personally envisioned the future of pharmacy practice. The top assignments are set to be published in issues of the Pharmacy Practice and Business magazine. The possibility for tangible impact on the profession stirred enthusiasm in students that has never been seen before by the course instructors. Following completion, the practice tools were collated into one document covering over 20 minor ailments and distributed to students for use in their professional futures.

Teaching drug metabolism – a tale of two courses

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In 2014, a new medicinal chemistry course (PHAR 310) was created for the second year of the BSP program at the University of Saskatchewan. The course was designed to encourage students to take control of their learning in a subject area that few students value. Students were required to come prepared to classes by reading specific material in advance. Several activities and assessment methods were then used to ensure that the students could demonstrate their understanding of each learning module. Student evaluations generally indicated that they found this approach to be very helpful in learning the material and in preparing for assessments.

In contrast, a new first year course (PHAR 122, Introduction to the Pharmaceutical Sciences) was created in 2017 for the PharmD program at the University of Saskatchewan. Many of the learning modules from PHAR 310 continued in the PHAR 122 curriculum and although different teaching methods were utilized, pre-reading of course material was not an expectation. In 2018, pre-reading of material for the module on drug metabolism was introduced along with activities and assessments. Student evaluations were almost universally negative, with many focusing on the volume of material to be learned. There was no difference in the amount of material to be learned in this module between the two courses, the 2017 and 2018 delivery or the amount of time given to learn the material. There are several potential reasons for this change in perception some of which include the level of learner engagement, clarity of expectation from the instructor, student educational maturity and knowledge synthesis skill. I will review these reasons for the difference in perceptions and propose strategies to improve the student's learning experience.

Why should I care? Student snapshots of learning medicinal chemistry in a PharmD program

Simon P. Albon, *Kane Larson, Adam Frankel*

UBC, Faculty of Pharmaceutical Sciences

Goals/Intent of the Presentation: This oral SIG presentation will share the findings and curriculum enhancement implications of a study exploring student's perceptions of learning medicinal chemistry in Year 1 of UBC's new PharmD program.

Description of the Project: The UBC Faculty of Pharmaceutical Sciences introduced a new entry-to-practice Doctor of Pharmacy (PharmD) degree program in September 2015. One of the foundational sciences in the program is medicinal chemistry, a subject students often find challenging and irrelevant in their training. To address this issue, we designed a study during the 2017W session with two aims: 1) to evaluate student's perceptions of learning medicinal chemistry in the first medicinal chemistry module in the new program, and; 2) to enhance the medicinal chemistry curriculum and teaching practices in the module where necessary. Three surveys, called Snapshots, comprising two numeric response and four written comment questions were developed and administered at the beginning, middle and end of the Term 1, 2017W session (September-December). FluidSurveys® was used for survey administration and generating descriptive statistics; student comments were analyzed for codes, themes, data discrepancies and critical quotes using the constant comparative method. Study findings (response rate: 92%; 207/224) indicated that the medicinal chemistry curriculum and teaching practices in the module were well received. Approximately 95% of students "agreed" or "strongly agreed" that medicinal chemistry was relevant to their education as pharmacists, scoring 4.4 on a 5 point scale (strongly disagree to strongly agree); 64% of students felt the medicinal chemistry curriculum and teaching practices had positively impacted their perceptions about the importance of the subject in their education (3.9 on a 5 point scale). For approximately 2% of students (5/224) learning medicinal chemistry was irrelevant. Analysis of student comments indicated that initial anxiety and nervousness about learning medicinal chemistry shifted towards a positive perception of its relevance and usefulness in their understanding of drugs, education and future careers. The curriculum design and emphasis, practice problem sets and in-class active learning strategies were cited as particularly useful for student engagement and learning. Findings remained constant throughout the Term.

Session Summary for Conference Program: Are you struggling to find meaningful connections between medicinal chemistry and pharmacy practice in your teaching? Do issues of irrelevance seem permanently etched in your teaching and course evaluations? Inspite of your best efforts, are you feeling your students just don't care about learning medicinal chemistry? If you answered yes to any of these questions this session might be for you. The findings and curriculum enhancement implications of a study exploring student's perceptions of learning medicinal chemistry in Year 1 of UBC's new PharmD program will be shared. Participants will leave this session with promising strategies for teaching medicinal chemistry in their own contexts and institutions.

Using technology to promote interprofessional learning about informatics

Lisa D Bishop [1], _Marie A Rocchi_ [2], _Janet M Cooper_ [3], _Harold G Lopatka_ [3], _Seema Nayani_ [4]

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[3] _Association of Faculties of Pharmacy of Canada_
[4] _Canada Health Infoway_

Description of session: The session will begin with an overview of the AFPC informatics project, highlighting the new interprofessional chapters: e-medication reconciliation and e-prescribing. The session will include a tour of the new e-Learning for Healthcare Professionals platform and a discussion about how it can be used for interprofessional learning.

Description of project: AFPC has partnered with Canada Health Infoway on several successful pharmacists-in-training projects over the past seven years. Their current work is a component of the Digital Health Faculty Associations Content & Training Solutions (FACTS) initiative, aimed at improving graduate's preparedness for work in technology-enabled environments by integrating digital health into curricula on a pan-Canadian level.

A national, online, competency-based, educational resource has been created, called e-Learning for Health Care Professionals (http://elearnhcp.ca/). It is designed to advance digital health in education by developing informatics competencies and associated resources to support clinical faculty and students in Canada. Effective marking/promotion will be key to encouraging the uptake of the resource by medicine, pharmacy, and nursing students. Feedback from these students will be essential for evaluating the content for future modification.

Relevance to Pharmacy Education: This initiative will help prepare graduates to work in technology-enabled environments. It is a tool that can help pharmacy faculties meet AFPC's educational outcome around the importance of using health informatics to improve the quality of care, manage resources, and optimize patient safety. Recognizing the importance of this outcome, AFPC produced a document outlining national entry-to-practice competencies for pharmacists related to information and communication technology. The e-Learning platform is a tool that can be used by faculties as a way to help meet these competencies and influence future clinicians through e-learning approaches that are both highly engaging and educational.

Summary for conference program: As faculty members, we must prepare our students to work collaboratively in technology-enabled environments. The session will highlight the advantages of interprofessional learning, how the use of technology can be used to educate students about information and communication technology, and will include a tour of an e-Learning for Healthcare Professionals platform that can be used for interprofessional learning.

Using gamification in practice skills lab: implementation and value in student learning

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Description of the session: There is interest in games as an active learning strategy; however, there is limited published information on their use in pharmacy education. Three "low tech" games were created for the practice skills lab to engage and encourage students to work together to problem solve practice issues.

Goals of the presentation: To briefly review the evidence on the impact of gamification on student motivation and learning. To describe implementation of game activities in a practice skills lab. To illustrate the value of games based on an evaluation project undertaken to assess student engagement.

Description of initiative and relevance to pharmacy education: There is increasing evidence that gamification in health sciences education leads to better student motivation and achievement. Adding games to the practice skills lab was thought to be a worthwhile strategy to employ with the second year cohort of approximately 130 students to increase student engagement. The lab was conducted in two half day sessions, with half the class in each session. Three sequential games, "The Amazing $R_X$ace", "Who's Drug Is It Anyways" and "Jeopardy" were created and students were tasked to complete each game for points. On completion of the first game students were given the instructions or "clues" to the next game. The group with highest number of points were the "winners". This lab activity has been run across 3 consecutive academic years.

Although this is a "low tech" activity, it required time to set up for the two lab times. Anecdotal and verbal feedback seemed positive. To evaluate if this activity provided value to student learning in a practice skills environment, a student in the Pharm D for Practicing Pharmacist program (completing an experiential elective rotation) conducted a survey to solicit student feedback. This presentation will discuss evidence for gamification and the games in more detail. High level evaluation results will be discussed with the details presented in a separate poster. (Le, K et al)

Summary: Does a gamification strategy engage students in learning more effectively? This presentation will discuss how gamification impacts student motivation and learning, and the development and implementation of three low-tech games, in a second year practice skills lab.

Using a fictional malpractice case to build documentation skills

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University of Waterloo

Background: Our final skills lab/course is focused on problem solving and documentation. The course includes a 2-hour weekly lecture and a 2-hour weekly lab. Students write weekly SOAP notes and receive periodic peer and instructor feedback using a documentation rubric. Over the last five years, the course evaluations have indicated that students feel this level of documentation is inconsistent with "real world" practice. Thus, a 2-week lecture/lab activity was developed to demonstrate the medico-legal value of documentation.

Objective: To describe a novel method of teaching documentation using a fictional medical malpractice case.

Description of activity: The 2-week activity occurs mid-way through the term. It begins with a 90-minute interactive lecture on the elements of documentation. Students are then provided with a fictional invitation letter from a lawyer to be an expert witness in a malpractice case involving a patient who died from a drug-related cause. The students generate a list of questions for the lawyer to ask the fictional pharmacist defendant in a discovery interview. The next day in lab, students are provided with a package that includes a discovery interview transcript, prescription hard copy (including documentation typical of community practice), photo of the dispensed product, coroner's report, and patient dispensing history. The students review the material and use the NAPRA standards of practice to identify which standards the pharmacist breached. The following week, malpractice lawyers provide a 2-hour overview of the elements of a malpractice lawsuit. The students then complete a 2-hour "apology" lab to develop strategies for apologizing for errors made in the pharmacy.

Conclusion: The described malpractice activity has been useful for engaging students in building stronger documentation skills that align with the standards of practice. It targets student ambivalence about documentation by shifting the student focus from a lack of time for clear documentation to a clear example of the ways documentation is used in practice.

A novel way to engage students in experiential preventive health education at a university-owned, pharmacist-led patient care clinic

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Description: The practice of pharmacy in BC includes promoting health and preventing diseases. Student pharmacists at UBC have few real-world opportunities to develop preventive health skills. A novel collaboration between the Pharmacists Clinic, Health Wellbeing and Benefits unit and student pharmacist volunteers brings preventive health services to UBC employees while supporting student learning.

Goals/Intent of Presentation: The goal of this presentation is to provide inspiration and practical strategies for other Canadian faculties of pharmacy to achieve the dual goals of improving the health of fellow employees while providing student pharmacists with experiential preventive health education.

Project/Initiative: The Clinic team coordinates several preventive health initiatives for the UBC employee population including: immunization clinics, smoking cessation services, naloxone training and kit distribution, health screening and awareness events, educational seminars and workshops, and pharmacist-led cardiovascular risk reduction services. Over the past 5 years, student pharmacists have helped provide over 4500 preventive health services to UBC employees and employees have become educated, engaged and activated to optimize their lifestyle choices and behaviours to prevent disease.

Relevance to Pharmacy Education/Research: Participant feedback shows that they are receiving services from pharmacists and pharmacy students in the workplace that are not available elsewhere, the services are highly valued, they are having success implementing positive health behaviours, they want to contribute to student learning and they have a greater appreciation of pharmacist roles.

Student feedback shows that participation in structured preventive health initiatives for UBC employees improves their competence and confidence providing preventive health services, conversing with patients, managing time during a patient interaction, and applying classroom learnings with real patients.

Summary: A novel collaboration between the Pharmacists Clinic, Health Wellbeing and Benefits unit and student pharmacist volunteers brings preventive health services to UBC employees while supporting student learning. This presentation provides inspiration and practical strategies for other Canadian faculties of pharmacy to achieve the dual goals of improving the health of fellow employees while providing student pharmacists with experiential preventive health education.

It's all about the BASE: a new approach to teaching social, administrative and information sciences across the entry to practice PharmD curriculum

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Goals: 1) To describe a new approach to integrate social, administrative and information sciences across the pharmacy curriculum, 2) To compare the design of the original and redesigned courses.

Description: In the BScPharm Program at the University of Alberta, there were 10 courses (18 credits) focused on social, administrative, and information sciences. Over half of the credits were taught in the first year which limited integration and opportunities for building on concepts over the curriculum. The redesign introduced six integrated BASE courses with one delivered each semester for three years (6 courses; 18 credits) in four content streams, Behavioural (i.e., professional identity, communication, and leadership), Administrative (i.e., healthcare systems, dispensing, law, ethics, management), Social (i.e., biopsychosocial models, social determinants of health), and Evidence-based (i.e., informatics, evidence-based clinical practice, and pharmacoepidemiology) pharmacy practice. Each BASE course incorporates the four content streams and employs team teaching to allow for scaffolding of topics. Each BASE course considers issues facing pharmacy and society through a different lens. The first year starts with a personal focus on pharmacists and interpersonal interactions. In the second year, the focus will be broadened to include pharmacies, professional groups, hospitals, and the communities. The third year focuses on societal issues and the role of policy in creating health. Future evaluation of BASE courses will examine the influence of the redesign on the achievement of student competencies in the AFPC Educational Outcomes for First Professional Degree Programs.

Relevance to Pharmacy Education: The knowledge, skills and attitudes developed in BASE underly a larger proportion of the Educational Outcomes for First Professional Degree Programs in Pharmacy. A coordinated approach to teaching the social, administrative and information sciences will provide a strong foundation (or may we say BASE) for pharmacy education in Canada.

Summary: It's all about the BASE - the new Behavioural, Administrative, Social and Evidence-Base Pharmacy Courses at the University of Alberta. This session will highlight our approach to teaching the social, administrative and information sciences pharmacy courses to facilitate more thoughtful pharmacist practice that reflects personal, community and societal perspectives.

CPERC 2019
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PE01

The importance of experiential education facilitators to institutional pharmacy practicum sites in British Columbia: assessment of the role and associated stakeholder perceptions

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Background: The Experiential Education Facilitator (EEF) role was created to provide on-the-ground pharmacist support to practice educators (PEs) and learners with the intent of optimizing student learning and assisting sites in managing clinical workload.

Objective: To assess the role of the EEF and associated PE and learner perceptions.

Methods: Daily logs were collected from seven EFFs over a 16-week period to determine their time spent on various tasks. Prospective surveys were simultaneously disseminated to PEs and learners to determine the perception of their experiences with the EEF during their institutional practicums.

Results: 386/539 (72%) of the daily logs disseminated to the EEFs were completed. EEFs spent most of their time organizing activities for learners, supporting PEs, evaluating learners and facilitating teaching sessions. Of the 85 surveys disseminated, 20 (24%) PEs and 14 (16%) learners responded. PEs stated the most supportive tasks provided by EEFs were orienting the learner to the site, organizing the practicum structure, providing workload relief, determining learning activities, and working with challenging learners. Learners found EEFs most helpful with site orientations, reviewing practicum assignments and cases, and facilitating therapeutic discussions, and 12 (87%) noted feeling more confident in their clinical skills after working with the EEF. The majority of PEs (75%) and learners (61%) did not experience challenges in their interactions with the EEFs. The most frequently cited issue was the unavailability of support when the EEF was away from the site due to vacation leave or committed to other non-EEF activities (e.g. patient care responsibilities).

Conclusion: EEF support was perceived positively by both PEs and learners. Conversely, the absence of EEF support was noted to be a challenge by both stakeholders. EEFs enhance practicum experiences for both PEs and learners by augmenting educational opportunities, providing another avenue of support, and acting as an advisor to students and PEs when needed.

PE02

AFPC's response to the Joint Statement of Action to Address the Opioid Crisis in Canada

Beth A Sproule

Leslie Dan Faculty of Pharmacy & Department of Psychiatry, University of Toronto, and the Centre for Addiction and Mental Health, Toronto, on behalf of the AFPC Opioid Working Group

At the 'Joint Statement of Action to Address the Opioid Crisis in Canada' summit in 2016, AFPC committed to conducting an environmental scan to identify the extent to which current curricula address pain management, opioid use and misuse, as well as to adapt draft competencies for health professionals in pain management and opioids to pharmacy practice. A working group was created consisting of representatives from each of the 10 Faculties of Pharmacy in Canada. The working group conducted a curricular scan to delineate and summarize the state of undergraduate pharmacy programs with respect to content in this area. Key information was collected and summarized for each course that included content related to pain management or opioids. A framework was developed encompassing competency statements related to pain, opioids, opioid overdose and opioid use disorder, and cross-cutting themes.

This work resulted in the following recommendations:

1. The most common approach to delivering content related to pain and opioids has been to embed it within courses across the curricula. Therefore, each AFPC Faculty should systematically review their courses to ensure content is delivered consistently across their program, in a coherent manner, without contradictory messaging or redundancies.
2. AFPC Faculties that are missing key pain and opioid topic areas should take steps to incorporate them.
3. AFPC Faculties should review their content in the area of opioid use disorder in particular, to ensure appropriate and adequate coverage.
4. AFPC Faculties should utilize the competency framework for pharmacists in both undergraduate and continuing professional development programs.

The terms of reference for the opioid working group have been revised to now focus on the dissemination and uptake of the recommendations. The final report from this work has been submitted to the federal Opioid Response Partners secretariat.

PE03

Healthcare student competence and confidence with prescribing: a cross-sectional study

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Objective: Previous research has shown that prescribing competence is poorly correlated with prescribing confidence, and has questioned whether undergraduate programs adequately prepare interns and junior practitioners for safe and rational prescribing. The goal of this project is to investigate whether prescribing competence and perceived prescribing confidence of fourth year pharmacy and medicine students at the University of Alberta are correlated.

Methods: A cross-sectional design will be used to quantitatively measure prescribing competence using five prescribing case scenarios, and qualitatively explore prescribing confidence using a survey. All fourth year pharmacy and medicine students at the University of Alberta are eligible to participate. Answers to the cases will be graded based on therapeutic appropriateness and inclusion of all legal requirements. The confidence survey will assess confidence of both assessment and prescribing skills, and consists of a four-point confidence scale. The cases and survey were pilot tested by practicing pharmacists and a physician.

Results: Recruitment is currently underway, and results are expected by March 2019. Currently, 23 assessments have been completed in full, 15 by pharmacy students and 8 by medicine students. To assess the internal consistency of competence scores and self-perceived confidence ratings, cronbach's alpha will be used. The Spearman correlation coefficient (r) will be used to determine the correlation between prescribing competence and confidence for both cohorts independently. Significance will be defined as $P < 0.05$. The overall level of prescribing competence and self-perceived confidence will be calculated and compared between the two cohorts of students.

Conclusion: This project will gauge the level of prescribing competence and confidence of future prescribers graduating from the University of Alberta, which may guide curriculum changes or improvements.

PE04

Pharmacist and physician competence and confidence with prescribing: a scoping review

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Objective: Prescribing is a growing scope of practice for pharmacists. The objective of this scoping review is to assess of the literature related to pharmacist and physician competence and confidence with respect to prescribing.

Methods: Online databases MEDLINE (1946 to present via OVID), EMBASE, and Global Health were used to identify articles from inception to October 2018. Peer-reviewed articles describing either the competence or confidence of physician, pharmacist or student prescribing, including inappropriate prescribing and prescribing errors were included. Abstracts, research protocols, literature reviews and letters were excluded. Articles that focused on patient perspectives, an intervention related to prescribing or prescribing education, a specific medication class or medical condition or other health professional prescribing were also excluded. No limits for language were set.

Results: After applying the inclusion and exclusion criteria, 32 eligible articles remained. Sixteen articles were reviewed in full from hand searching, one being added to the final selection, resulting in a total of 33 articles included. Of these, 16 were published in the United Kingdom, 22 studied medical prescribing, 9 studied pharmacy prescribing, and two studied both. Many studies demonstrate that medical students and junior doctors are not competent in prescribing when they enter practice, although their perceived confidence is often higher than their assessed competence. While fewer studies investigate pharmacist competence and confidence, those that do describe competent prescribers lacking confidence in their prescribing knowledge. Additional emergent themes included self-awareness, lack of education and educational improvements, prescribing errors and resources, prescribing culture and barriers to prescribing, gender differences and benefits to prescribing.

Conclusion: There is little consensus from the outcomes of these studies related to prescribing competence or confidence, while most of the research focuses on junior doctors prescribing. While some reflect positively on prescribing competence and confidence, others show major deficits in competence and lack of confidence. Further research needs to be done to evaluate pharmacist competence and confidence with respect to prescribing.

PE05

Special populations – a proposed framework incorporating pediatrics and geriatrics

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Objective: When developing a new Doctor of Pharmacy curriculum, the transition of a pediatrics and geriatrics course from the B.Sc. program was reassessed. The purpose of our research was to prepare a framework that defined and outlined special and vulnerable populations, highlighting where geriatrics and pediatrics are represented.

Methods: A literature search was conducted through Medline, including terms 'geriatrics, pediatrics, vulnerable, special population' (inception to December 2018). Professional and educational bodies from Medicine and Pharmacy were consulted for publications regarding special or vulnerable populations.

Results: Definitions of special populations were not universally agreed upon, but we defined special population' as being outside the typical adult population, requiring a unique approach or additional knowledge and/or skills to provide care to. Vulnerable populations are included in special populations, but were defined in the literature and by professional bodies based on social determinants of health. Pediatrics and geriatrics falls under special populations, but these patient groups also have aspects of vulnerability.

Conclusion: A framework was developed that defined vulnerable populations consistent with the literature. A new group of special populations was identified that included geriatrics and pediatrics, which have unique aspects of care, but also overlap with vulnerable populations. The framework can be used to guide design and implementation of pharmacy curricula.

PE06

Curriculum mapping: implementation and acceptability of a curriculum mapping tool

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Objective: The purpose of our study was to use a syllabus creation tool to support curriculum mapping across 2 faculties at the University of Alberta. Our objectives were to (1) demonstrate functionality of the syllabus tool for creating course syllabi and starting to map curriculum, and (2) to report results of an evaluation of user acceptability from a University of Alberta pilot.

Methods: With support from University of Alberta Information Services Technology (IST) eClass team, a new moodle based syllabus creation tool was developed. Use of the tool was piloted with the Faculty of Pharmacy and Pharmaceutical Sciences (FPPS) and the Faculty of Kinesiology, Sport, and Recreation (KSR). Courses in the undergraduate programs that were considered mandatory were included. Syllabi were created in FPPS with research assistant support, while the KSR staff had an information seminar but entered their own data. A cross-sectional survey design was used to collect data about the user experience with a focus on acceptability and promotion of course design principles.

Results: The tool assisted in creating course syllabi and mapping information. There were n = 64 (of 87 possible participants) instructors in KSR, and in FPPS n=12 (of 38 possible participants). They evaluated the prepatory seminar and online resources as adequate (M=3.5 – 4.0 on a 6 point scale), and showed acceptance of functionality associated with entering general course information (M = 4.33) but lower acceptance when using the tool to input session information (M = 3.26). They reported that the tool enhanced some reflection about their teaching. The primary concern identified was time commitment for the first data entry, and flexibility of output as a key area for improvement.

Conclusion: The tool was implemented at 2 different faculties and showed functionality in creating a syllabus. The users found it somewhat acceptable, with suggestions for improvement and efficiencies.

PE07

Curriculum mapping: representation of interprofessional education in pharmacy and physical education

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Objective: The purpose of our study was to apply the interprofessional education (IPE) framework developed at the University of Alberta (U of A) to the undergraduate pharmacy curriculum, and the physical education curriculum at the University of Alberta.

Methods: The IPE framework chosen was developed at the U of A in 2016, and is based on the interprofessional pathway for health sciences students at U of A, as well as international frameworks previously published. The framework is structured with 6 main competencies. The mapping was done by abstracting course objectives from syllabi of required courses. Content was analyzed descriptively.

Results: There were 140 outcomes from 24 courses that mapped to at least one of the sub-competencies across the 6 core competencies. The majority, 59 (42%) were related to role identification and only 3 (1%) related to conflict resolution. The second year in Pharmacy had the greatest number of IPE competencies, primarily driven by the required interprofessional course, while fourth year, including courses in experiential education, included the fewest competencies. In physical education, 7 courses contained 12 outcomes that were tagged with 16 sub competencies in the 3 core competencies, with the most common being collaborative leadership, and the lowest being interprofessional communication.

Conclusion: The mapping showed inconsistencies across years in the programs, and variability in the 6 competencies covered. The framework was helpful in mapping the IP content, but increased clarity in the course objectives and prospectively considering the framework may assist in documenting IPE across the curricula.

PE08

A call to act: Indigenization of pharmacy programs

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Objectives: The purpose of our scholarly activity was to provide an action plan in response to the Truth and Reconciliation Commission (TRC) of Canada's Calls to Action for indigenization of pharmacy programs in Canada.

Methods: A team of individuals from faculties across Canada collaborated through in-person and remote meetings to integrate information from the TRC, government reports from Canada, and a literature review (Medline, from inception to 2018) into a document to guide pharmacy education leaders in Canada.

Results: A 5-year plan was prepared, with a target audience of the Deans or Directors of Faculties or Schools of Pharmacy in Canada. The plan included steps toward reconciliation and indigenization in each of the 5 years. The groundwork identified for this plan includes an understanding of the history of Indigenous people in Canada, colonialism, and the extraordinary gap in health and living standards between Indigenous and non-Indigenous people in Canada. The need for reflection and preparation was highlighted before any Faculty or School proceeds with indigenization. The 5 year plan focuses on the following priorities, in sequence for each year: (1) faculty development, (2) cultivating cultural safety and respectful engagement with Indigenous communities, (3) recruiting Indigenous learners, (4) integrating Indigenous content into classroom-based learning, (5) promoting engagement with Indigenous communities through experiential learning. Each year has associated goals and evidence when a Faculty or School may have succeeded in reaching that goal.

Conclusions: A structured, goal-oriented, 5-year plan for indigenization was developed for guiding leaders and administrators in pharmacy programs in Canada toward truth and reconciliation.

PE09

Lessons learned by sabbatical

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Objective: To share learnings from a sabbatical experience, and identify practical lessons that clinical faculty members can apply when considering a sabbatical.

Methods: Reflective methodology was used to review the different stages of the sabbatical process, including planning, application, experience, follow-up, future, and planning the next sabbatical. Documentation from the application, during the sabbatical, and follow-up reports were reviewed. Notes from meetings with colleagues were also reviewed. Key learnings were abstracted and categorized.

Results: A sabbatical for a faculty member with clinical responsibilities is rare and challenging. Written and online resources for academics, as well as university policies usually support focused research activities, but there are many practical barriers. Advice from colleagues and leaders across health sciences faculties is valuable, particularly partnerships, location, and duration. Important considerations include what is being left behind (undone), what has to be accomplished during the sabbatical (what is done), and future impact (what will be done). Critical partnerships are necessary, but selection of an accommodating host/supervisor readily available to engage can be difficult for pharmacy practice research. The activities with the potential for greatest long-term success, and the most in-the-moment enjoyment, were primarily related to on-the-spot opportunities, rather than pre-planned structured milestones.

Conclusion: A sabbatical for a clinical faculty member is possible and can be rewarding, but strategic planning, particularly regarding the supervisor, is necessary far in advance. Flexibility throughout the sabbatical to take advantage of learning opportunities can enhance the experience.

PE10

Partners in pharmacy: an intraprofessional OSCE with pharmacy and pharmacy technician students

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Study Objectives: Pharmacists and pharmacy technicians work closely together in practice upon graduating, and share some overlapping roles and responsibilities. However, there are limited opportunities for these individuals to meaningfully interact and learn together prior to graduation. Therefore, it is important to create these opportunities during their training. We introduced a new intraprofessional learning activity for pharmacy students from the University of Waterloo School of Pharmacy and pharmacy technician students from Lambton College. Our research aim was to assess whether the event improved confidence in collaborative practice and provided educational value. In addition, we explored feedback regarding what aspects provided the greatest learning and what suggestions could enhance the experience.

Methods: The 2-hour event entitled "Partners in Pharmacy" consisted of a practice Objective Structured Clinical Exam (OSCE) and case discussion, followed by a facilitated debrief that emphasized roles, responsibilities, communication, and conflict management. Pharmacy and pharmacy technician students worked in pairs or small groups to complete the tasks or cases. OSCE stations included glucometer education, insurance coverage for prescriptions, and prescription checking. The group discussion centered on a methadone compounding error. After the event, students were asked to complete an electronic questionnaire. Results were analyzed using descriptive statistics, and compared between learner groups. Written responses underwent thematic analysis.

Results: Of the 43 students who participated in the event (21 pharmacy students, 22 pharmacy technician students), 21 students completed the questionnaire for a response rate of 49%. The majority of respondents (90% or more) agreed that the session increased their confidence in working collaboratively, and that working in pairs/groups enhanced their learning. Results were similar between learner groups. Respondents indicated that the OSCE was the most valuable component.

Conclusions: An intraprofessional event including an OSCE and case discussion increased reported learner confidence in collaborative practice and was viewed to provide educational value, particularly the OSCE component.

PE11

The value of peer assessment in the education of healthcare professionals

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Objective: In peer assessment, students acquire higher level learning through both receiving and providing feedback to their peers. The aim of this review is to determine the relevance of peer assessment in health professions education and its applicability in a pharmacy curriculum.

Methods: A Medline search was conducted using search terms such as, 'students', 'peer assessment' and 'practice lab'. The search resulted in 181 articles, in which 29 were reviewed. Articles focusing on healthcare professional students, peer feedback and peer assessment were included in the review. Excluded from the review were articles focusing strictly on peer teaching without discussion on assessment.

Results: The majority of the articles discussed medical students (n=15), followed by nursing students (n=6), dentistry students (n=5) and pharmacy students (n=3). Six of the articles focused on peer assessment of communication skills while sixteen articles focused on various clinical tasks (OSCEs, simulations). Some advantages of integrating peer assessment in pharmacy curriculum included reducing faculty member workload and provision of consistent grading criteria. Students reported that peer assessments improved their critical analysis skills, self-reflection skills and confidence. Variability and validity of grades were limitations identified; however, in one study, pharmacy student and faculty feedback indicated agreement.   When disagreements in grades occurred, students were allowed an opportunity to challenge the grade which strengthened agreement between peer assessors and faculty. Overall, students were receptive of peer assessment methods but they identified that peer assessors could provide more constructive feedback.

Conclusion: The literature suggests that peer assessment can be a valuable tool to enhance student learning and alleviate faculty workload if implemented in a pharmacy curriculum. However, there needs to be further research into improving validity of peer assessment and students' abilities to give feedback before widespread integration.

PE12

Tools utilized to measure characteristics associated with pharmacist success in students of health profession programs

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Objective: Although there is growing evidence to support the idea that personal characteristics are important predictors of pharmacist success, how to best measure them remains largely unexplored. The objective of this scoping review was to identify tools that measure these characteristics specifically related to health profession programs and describe whether they predict success.

Methods: A search was conducted in Ovid MEDLINE (1990 – January 2018) to identify articles investigating the relationship between personal characteristics of students applying for or completing a health profession degree and various indicators of success. The search was restricted to English language articles that included at least one measure of academic or professional success. Additional studies that met the inclusion criteria were added from citations in retained articles.

Results: A total of 860 articles were initially retrieved; 75 studies that used 59 tools were included. For each personal characteristic category, tools utilized as measures were identified and compiled as a basis for description. The tools were categorized as measures of: personality (103 relationships to success - RTS; 81% predictive - P), emotional intelligence (57 - RTS; 49% - P), learning style (28 - RTS; 50% - P), work-life balance (54 - RTS; 31% - P), critical thinking (24 - RTS; 75% - P), motivation (10 - RTS; 70% - P), moral judgement (4 - RTS; 57% - P), and other (6 - RTS; 63% - P). The most commonly utilized tool was the NEO Personality Inventory-Revised followed by the Mayer Salovey Caruso Emotional Intelligence Test.

Conclusion: This scoping review identified and described many tools that have the potential to measure personal characteristics that may predict pharmacist's ability to achieve success in practice. This information could also be used to help inform decisions about which tools may be useful in pharmacy school admission processes.

PE13

Distributed preceptor development and self-efficacy

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Objectives: Self-efficacy in teaching relates to positive teaching behaviors and can be influenced by preceptor development. We measured teaching self-efficacy pre and post preceptor workshops delivered at experiential rotation sites (i.e. distributed preceptor development).

Background: To identify gaps in our required online training program, a needs assessment conducted in 2016 identified perceived and unperceived learning needs of preceptors. Key themes included: 1) increasing accessibility of live sessions and 2) valuing the preceptor role by providing advanced training to further develop and support preceptors.

Methods: Customized interactive workshops were developed and focused on advanced training in areas of deficiency frequently cited by preceptors and students: "Giving and Receiving Feedback" and "Working with struggling students". Workshop design was informed by social constructivism and andragogy. Eighty percent of workshops were offered at experiential rotation sites. Perceived self-confidence relating to feedback and students in academic difficulty were measured pre and post workshop using a 5-point Likert scale. Self-efficacy scores were analyzed using descriptive statistics. Narrative comments were grouped into common themes.

Results: Data were evaluated for a 12-month period (Oct 2017-Oct 2018). Of the 320 participants; 43% and 37% had > 10 or < 5 years of preceptor experience, respectively. Mean self-efficacy scores related to identifying, communicating and developing action plans for struggling students were all higher post-workshop. The greatest improvement in self-efficacy was in working with the faculty on student remediation. Mean self-efficacy scores relating to elements of effective feedback and influencing student responsiveness to feedback improved post-workshop. Confidence with delivering positive or negative feedback remained unchanged after the workshops. Aspects participants liked most about the workshops were: 1) challenging case examples; 2) opportunities for peer discussion/networking; 3) role play and small group work. Suggestions for improvement included allowing more time for workshops and customizing case scenarios for specific clinical areas.

Conclusions: Advanced preceptor workshops focused on identified needs and delivered on site were well received. Self-confidence improved immediately following workshop delivery. Future initiatives include building capacity to expand distributed workshop offerings and measuring impact on student performance.

PE14

The use of on-line video capture interviews for admissions at the University of Alberta

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Purpose: Traditionally at the FoPPS the only assessment tools used for admissions were the applicant's grades and a mailed-in written "Letter of Intent". To permit some informative assessment of the applicant's verbal communications skills, an on-line interview process was implemented in 2014. By webcam, students answer a series of video questions related to personal interests, motivation for healthcare, and ethical reasoning. The recordings are later viewed and scored by admissions committee members. Our aim was to assess student perceptions of the use of the interviews, and to seek out relationships between the scoring of interviews and academic achievement in the FoPPS BSc(Pharm) program.

Methods: A survey was developed to measure student perceptions of acceptability, validity, and preference about the online interview process. The questions focussed on in-person vs. the online approach, advantages and limitations of the process. Using academic records, regression analysis was used to assess the strength of relationships between the interview scores and academic achievement (overall and some selected basic or clinical science-based, communications or skills-based).

Results: A total of 206 students (127 Year 1 and 79 Year 4 students) responded to the survey (87% response rate). Students had positive acceptability on the on-line interview. They reported agreeing most strongly that the interviews provided information to assess verbal communication, personal interest, and personal attributes. Students also mostly preferred the use of an on-line process vs. an in-person interview for reasons including cost and convenience. There some modest concern about there being risk of advanced knowledge of the questions. In relating interview scores to performance in Pharmacy, there was only a significant relationship between interview scores and grades in one Practice Skills course (p<0.01), and none between scores and gender or number of prepharmacy years.

Conclusion: Students favourably viewed the on-line interview process. Modifications to the scoring process for interviews, or the interview questions themselves, could potentially lead to higher predictability of performance in grades from interview scores.

PE15

Design and implementation of a writing-intensive course in a Canadian accredited Middle Eastern pharmacy program

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Objective: To describe the design, delivery and impact of a writing-intensive course delivered at a Canadian accredited Middle Eastern pharmacy school to develop pharmacy students' writing, critical appraisal and peer mentoring skills.

Design: The Pharmacy Research, Evaluation and Presentation Skills VI course (PHAR 506) was offered to fourth-year pharmacy students at the College of Pharmacy, Qatar University. In this course, students critically appraised scientific research articles, completed one pre-journal club reflective critique and moderated one journal club session. In addition, students wrote two pharmacy review articles (PRAs) based on an assigned scientific research article. Moreover, the students peer mentored each other's written PRA.

Assessments and Evaluations: Assignments were assessed using grading rubrics developed by the course coordinators. The PRA assignments were evaluated by a College level program learning assessment committee in relation to their adherence to the Scholar and Communicator learning outcomes, two of the seven learning outcomes outlined by the Association of Faculties of Pharmacy of Canada (AFPC) guidelines. The percentage of students who achieved the pre-defined target of 80% in the Scholar and Communicator learning outcomes were 91.3% and 88%, respectively. Moreover, a student self-assessment survey administered at the end of the course identified that 85% of the students thought that they gained the necessary writing skills that will help them in their future careers.

Conclusions: The course improved pharmacy student's scientific writing, peer-assessment and critical appraisal skills. Indeed, further practice is needed to reinforce the skills learned and to strengthen their writing skills.

PE16

Students' satisfaction of an academic coach program

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Background: In the fall of 2018 the Faculté de Pharmacie of Université de Montréal implemented a pilot project offering a program of an academic coach (teacher resource) that recommended tools and study strategies to first year students experiencing academic difficulties early in the semester. The hypothesis was that by offering an early academic support, students would perform better and their level of stress would decrease. The primary objective of this study was to evaluate students' satisfaction of the academic coach program.

Methods: An anonymous survey using the institutional platform was sent to all students participating in the academic coach program. The survey had 30 questions regarding characteristics of participants, program expectations, tools and strategies used and, effects of the program on academic performance, stress level and other variables. Descriptive statistics were used to analyse the data.

Results: In total, 22 students were followed by the academic coach from September to December 2018. A total of 11 (50%) participants responded to the survey. Results showed that 72% of respondents were totally/very satisfied with the program and 82% stated that the program either exceeded or met their expectations. The tools and strategies proposed by the academic coach were totally or very well adapted to the students' needs. 64% of the students said that their academic performance improved and 36% said that their anxiety decreased. The majority of students said that their study strategies improved and that they would be part of the program again if available. Most students would like the academic coach to be more available.

Conclusion: The students are highly satisfied with the academic coach program. It is well adapted and meets students' needs.

Relevance to Pharmacy Education: Offering early academic interventions to pharmacy students could improve their academic performance and reduce stress. The results are favourable to the continuation of the program and to evaluate the possibility to expand the program to other students.

PE17

Evaluation of peer tutoring at Université de Montréal

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Objectives: The Faculté de Pharmacie of Université de Montréal has been financing peer tutoring for several years for undergraduate students Doctorate of Pharmacy (Pharm.D.), Bachelorate in BioPharmaceutical sciences (BSBP) and International pharmacy graduate program (QeP). Peer tutoring consists in group sessions where senior students help junior students prepare for their exams. Thus, the present study's objectives are to evaluate the perceived benefits of peer tutoring, to describe and compare practices between the three programs, to survey students on their satisfaction and to suggest recommendations to improve peer tutoring.

Methods: A descriptive survey sent to 966 students of the Faculté de Pharmacie was conducted from October 29 to November 5, 2018. An electronic survey was available on the institutional platform that contained between 10 and 26 questions depending on participation in tutoring sessions. The lead author observed tutoring sessions in the three programs, met with members of Faculté de Pharmacie as well as members from four others health faculties at Université de Montréal and made a review of the scientific literature.

Results: The participation rate of the survey was 21.5%. The main reason for peer tutoring participation for Pharm.D. and BSBP students was to have «cues» for exams (what type of questions, what to study, …). QeP students attended to guide and organize their studying. The survey revealed that the majority of students agreed that peer tutoring had a positive impact on academic results, helped to decrease their stress before exams and met their expectations. However, peer tutoring is not uniform across programs. For example, the number of sessions is higher in the BSBP program. It is also the only program in the Faculty to keep track of the numbers of participants per session.

Conclusion: Peer tutoring program is relevant and appreciated by students. The Faculté de Pharmacie should continue to finance the project as it has a positive impact on students. Nevertheless, a standardization of peer tutoring practices is recommended for all programs.

PE18

Refocussing the grading system of an assessment-intensive programme on competencies

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Background: An assessment-intensive programme, administered by the Continuing Pharmacy Professional Development faculty at UBC, spans 12 weeks and includes sessions from three pharmacy practice skills areas: Patient Dialogue, Therapeutics, and Pharmacy Practice Lab. Each week the participants in the programme submit assignments in the three areas. Grades in the program are based on the results from the assignments in weeks 9 to 11. A psychometric evaluation of the grading system revealed barely satisfactory precision of the final scores. Modeling studies indicated that both increasing the number of tasks and changing the weights of components in the final score had a limited effect on precision.

Objectives: The goals of this study are: 1. Evaluate the precision of the final scores when the scores are derived from ratings of the competencies included in each task rather than from task specific checklists; 2. Explore the reliability of the final competency scores as derived from the ratings.

Methods: One cohort's twenty anonymized records provided data for the analyses. Rescoring consisted of mapping the checklist items for each task to 6 broad competencies, creating rating scales for each competency, and re-scoring each task using the rating scales. Reliability of final scores as derived from the new task scores was evaluated by means of Cronbach's alpha and Generalizability Theory analyses. For each competency, a final score consisting of all ratings across tasks was derived. Generalizability analyses explored the precision of the final competency score and modeled conditions for optimal reliability.

Results: Using ratings of competencies rather than checklists in deriving the task scores, improved the precision of task, area and final scores, moving them within the acceptable range of reliability. The reliability of the competency scores as derived from the ratings across tasks was acceptable for all but one competency score.

Conclusion: These results would allow for refocussing the assessment decision making in the course on competencies, as well as for designing reporting, performance tracking and feedback systems that would capture specific strengths and weaknesses.

PE19

Implementing and evaluating a train-the-educator program for pharmacy practice educators

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Objective: To implement and evaluate training for pharmacy practice educators in recognizing and supporting students experiencing challenges on practicum.

Methods: An in-person, half-day training workshop held at UBC Vancouver was developed for pharmacist practice educators in collaboration with content experts in student support, experiential education, and educational design. Workshop design incorporated lecture-style teaching, small and large group discussions, and case-based learning, including a video animated case. A train-the-educator model was utilized, whereby practice educators completing this training would then apply the training in precepting students.

To evaluate workshop outcomes, an online survey consisting of open-ended, multiple choice, and rating-scale questions was designed with incorporation of the first two levels of Kirkpatrick's model to assess how participating practice educators received the training and how their confidence addressing challenges changed post-training. This survey was voluntary, however completion was linked to the receipt of continuing education credits.

Results: A total of 27 practice educators participated in the workshop and 23 completed survey responses were evaluated. Of these, 96% of participants agreed they would recommend this workshop to a colleague. Additionally, 96% of participants agreed the teaching and learning methods used were effective. The majority of participants reported high confidence in identifying a student experiencing a challenge (96%), having a conversation with a student experiencing a challenge to discuss their concerns (87%), determining the urgency of the situation (91%), and coming up with an appropriate plan to address the student experiencing a challenge (96%) after completing the workshop. This was an improvement from their level of confidence prior to the workshop, as less than 50% indicated high confidence in any of these same areas prior to training. 96% of participants indicated they were committed to applying their training to precepting students.

Conclusion: This well-received workshop improved the overall confidence and commitment of participant practice educators in recognizing and supporting students experiencing challenges on practicum. This is anticipated to translate to increased support for students on practicum.

PE20

Development of a housing and regional information resource to support students relocating for pharmacy practicums

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Background: In the Entry-to-Practice PharmD (E2P PharmD) program at the University of British Columbia (UBC), students undertake 42 weeks of experiential education during their four-year program. These practicum placements may be located anywhere across the province and students are responsible for finding and organizing their own travel and accommodations.

Objective: To develop a housing and regional information resource to support students as they prepare for their practicums across the province.

Methods: To inform the development of this resource, a needs assessment survey was disseminated to all undergraduate pharmacy students to determine their perceived challenges in relocating for practicums. An environmental scan of the Canadian Faculties and Schools of Pharmacy and the various health and human service programs at UBC was conducted to determine the resources and assistance currently offered to students by other programs for practicums.

Results: 224 students (26%) responded to the survey with 55% of respondents finding short-stay accommodations as the most challenging aspect of preparing for practicums. Students ranked regional information submitted by locals and a listing of transportation options as highly desired features of a resource. Six faculties of pharmacy and five UBC health programs responded to the environmental scan and varying levels of student support were found to be provided by programs. An online resource, the Regional Resources Hub, was then created with 1) a housing database with accommodations submitted by students, practice educators, landlords or others, 2) a regional information database with advice/tips submitted by practice educators and students who have been to or are from the region, and 3) a Piazza® discussion board to encourage student collaboration and information sharing.

Conclusion: The Regional Resources Hub was designed to assist students in preparing for their practicums by providing useful information on transportation, accommodations and the amenities and resources within various regions across the province. Next steps include an evaluation of the resource by soliciting student perceptions on its utility and identified areas for improvement.

PE21

Implementing a personal health record at the UBC Pharmacists Clinic – a narrative review of the pragmatics

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Objectives: The implementation of Personal Health Records (PHRs) have many documented benefits and limitations. The primary purpose was to conduct a narrative review of the evidence on the practical implications of adopting a PHR at a pharmacist-led clinic. With the growth of Faculty-owned pharmacist care practices and the concomitant development of informatics and primary-care curricula, there is a need for clinicians and educators to better understand PHR use and adoption to support best-practices.

Methods: A narrative review was completed to identify scientific and grey literature to better understand: (i) the impact of PHRs on clinical outcomes and patient health behaviours? (ii) the known costs and desirable features of a PHR? and (iII) the current PHR capabilities of community pharmacy software systems? Different vendors were compared in terms of features, costs, interoperability with the OSCAR (Open Source Clinical Application and Resource) electronic medical record systems.

Results: Fifteen articles were analyzed. Three main themes were found for patient-perceived benefits: (i) enhanced patient-provider communication, relationship and trust; (ii) empowered health care decision-making; and (iii) improved quality of care. Three main themes were found for patient-perceived concerns: (i) privacy and security concerns; (ii) confusion and uncertainty with technology; and (iii) erosion of patient-provider relationship. There were conflicting results that limited generalizability on the impact of PHRs on clinical outcomes including physical and psychosocial health indicators. There was a positive association between improved glycemic control and adherence with PHR use. Other health indicators such as blood pressure and anxiety/depression scores were not impacted with PHR use. Available community pharmacy software systems, although changing, scarcely offer features that mimic a PHR.

Conclusions: Although PHRs have been proposed to improve communication, quality of care, and enable patient empowerment, there are a number of patient-perceived concerns that limit their widespread use. The implementation of PHRs in pharmacist practice is supported by limited evidence and further research is needed to evaluate impact on clinical outcomes.

PE22

Preparing students for tomorrow's practice - exploring pharmacy and technician students' digital health literacy and impact on curricula

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Study Objectives: To explore the current state of pharmacy and pharmacy technician students' self-rated digital health literacy, use of technology in student activities, and identify strategic areas for informatics curricular improvements and innovations.

Methods: A mixed methods design using surveys and interviews was conducted over a 4-month period. An online eHEALS survey was deployed to currently enrolled 2nd, 3rd and 4th year pharmacy students at the University of British Columbia (UBC) and pharmacy technician students across 4 different programs in BC. Students were offered to participate in a post-survey interview exploring detailed questions regarding their use of technology in their daily lives and practicums, and possible improvements that could be made in future informatics curricula. Interviews were available either through phone or in-person, and were audio recorded for accuracy. Quantitative and qualitative thematic analysis was done.

Results: A total of 26 pharmacy students and 3 technician students completed the eHEALS survey, with 6 students participating in the interview. 50% of the participants were 2nd year students, 81% of the students were 25 years and younger, 85% were female. Most of the students felt they knew what (88%), where (85%) and how to find (77%) health resources available on the Internet. Less students (77%) rated that they have the skills to evaluate health resources they find on the Internet. 62% of students rated that they feel confident in using information from the Internet to make health decisions.

Conclusions: Overall, respondents self-rated digital health literacy was high. Pharmacy and technician students are aware of the health information available online and have the knowledge of where and how to find them. However, they feel less confident in several other surprising areas. Low respondents from technician students did not allow for meaningful comparisons between the two cohorts. Differences between being digitally literate and digital natives were thematically explored. Results suggest several areas that may be targeted for impactful informatics curricula and future research.

PE23

Evaluation of the course "writing a scientific paper" in the master's program in advanced pharmacotherapy

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Background: In 2011, a new course on scientific writing was introduced in the Master's program in advanced pharmacotherapy. The goal of this course was to provide tools to the residents regarding writing a scientific paper and it required to submit a paper for publication consideration in a peer-review journal. Ultimately, the goal was to promote continued scientific writing beyond graduation.

Objective: The objectives were to: 1- evaluate if pharmacists who previously took the course during their training and graduated continued to publish scientific or professional articles; 2- identify the barriers to publication in the workplace environment and 3- provide objective data on whether this course should be maintained.

Methods: An online survey was e-mailed in December 2018 to the 224 pharmacists who graduated from the Master's program in advanced pharmacotherapy at the Faculty of Pharmacy, University of Montreal between 2011 and 2017.

Results: A total of 89 (39.7%) pharmacists completed the survey. Among the participants, 84.3% mentioned that the course provided them with tools to write and publish an article. A total of 32.6% of respondents published at least one professional article and 43.5% published a scientific article. The majority of respondents (82.3%) identified lack of protected time as a limiting factor to writing articles and 91.0% had no time specifically allowed for this task. Most (84%) of pharmacists mentioned that this course should be maintained in the curriculum.

Conclusion: The writing course met its stated objectives and provided necessary tools and resources to promote scientific or professional publication beyond graduation. The data collected provided the justification to maintain this course in the Master's program. However, lack of protected time from employers requires to be addressed in order to create an environment conducive to publication.

PE24

Ethical issues in the entry-level Doctor of Pharmacy degree

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Background: In 2011, Laval University launched an Entry-Level Doctor of Pharmacy Degree (Pharm.D.). The new program is built around the development of five professional competencies. The teaching and the evaluation of ethical aspects has been improved in the Pharm.D.

Objective: To make students aware of the importance of personal ethical reflection and decision support tools in complex professional situations.

Methods: Ethical issues were incorporated into the Pharm.D. program in years 2 and 3. The learning and assessment were developed with the help of a pedagogical advisor and an ethicist.

Results: In the winter of the second year, students have a theoretical course, given by an ethicist, on ethical decision-making in the pharmacy practice. The ethical issues covered the internal environment (year 2) and the external environment (year 3). After the theoretical course, students become familiar with the decision support grid. Workshops are done in groups of 30 students where two cases are worked in team. Each team will present the important elements of their decision support grid. Following the cases worked in team, an ethical debate takes place with the presence of the person responsible of the course and a pharmacist in practice. Students are invited to share their thoughts and questions. Following the debate, the students review their support grid for ethical decision-making. A workshop using the same steps is done in the summer of Phase 2 to consolidate the achievements related to the grid. During the winter of year 3, more workshops are done, but in the form of an individual reflection using professional practice situation. Students will have to position themselves on two complex situations that include social debates (ex. medical assistance in dying).

Conclusion: The learning activities linked with the ethical aspects were included in the Pharm.D. program. Also, students reported their appreciation with the reflection format of the activities.

Preceptor experiences with novel student-preceptor models in pharmacy education: a qualitative analysis

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Background: Implementation of the Entry-to-Practice Doctor of Pharmacy program has required institutions to host more students for experiential rotations. In response, some institutions have explored novel student-preceptor models: peer-assisted-learning (PAL; ≥2 students of the same educational level), near-peer-teaching (NPT; ≥1 junior student(s) with ≥1 senior student(s)), and co-preceptorship (CoP; ≥2 preceptors).

Objectives: The objectives of this study were to describe the experiences of pharmacy preceptors in novel student-preceptor models and to assess the models using Kirkpatrick's framework for evaluating educational interventions.

Methods: Pharmacists who hosted final-year University of Toronto pharmacy students in novel student-preceptor models in institutional settings were interviewed. Transcripts were coded and analyzed using Kirkpatrick's framework to generate themes about participants' experiences and perceptions of the models.

Findings: Twenty preceptors from 13 institutions were interviewed, and 13 themes were identified. Fourteen preceptors had experience with PAL, nine with NPT, and nine with CoP. Preceptors perceived that NPT and PAL fostered comfortable learning environments that supported students' success; challenges included increased time spent teaching multiple students and completing evaluations. CoP allowed preceptors to balance teaching with clinical duties while broadening students' exposure to different practice settings. Preceptors improved skills in time management, communicating feedback, and adapting to students' learning needs. Novel rotation models allowed preceptors to provide care to more patients and complete projects, thus extending their professional practice. They also perceived that students participating in these models developed a greater sense of responsibility for patient care, and they are primed to work collaboratively with pharmacy colleagues.

Conclusion: Preceptors expressed satisfaction with novel student-preceptor models. The models enhanced the learning, skill development, and professional practice of both preceptors and students. Widespread adoption of these models in pharmacy experiential education would support students' development of knowledge, skills, attitudes, and behaviours essential for their future practice.

PE26

Novel student-preceptor models in pharmacy education: a qualitative analysis of the PharmD student experience

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Objective: To describe students' experiences and perceptions of novel student-preceptor models and evaluate the effectiveness of these models on students' learning.

Methods: Pharmacy students who had experienced at least one novel teaching model in their experiential rotations were invited to participate in semi-structured interviews. Models included peer-assisted-learning (PAL; two or more students of same educational level), near-peer-teaching (NPT; one or more junior students with one or more senior students), and co-preceptorship (CoP; two or more preceptors). Interviews were transcribed, coded, and analyzed for themes. Themes were mapped according to the Kirkpatrick model for evaluating educational training.

Results: Twenty semi-structured interviews were conducted. Forty-three experiences (19 CoP, 14 PAL, 10 NPT) were described from 14 institutions. Many themes overlapped between the three models. In CoP, students described increased preceptor availability and exposure to different patient care approaches. Challenges arose when preceptors had different student expectations. Students overwhelmingly endorsed a multi-learner environment. Both PAL and NPT students felt well supported as collaboration with other learners was readily fostered. Potential challenges in PAL and NPT were difficulties when personalities conflicted and when there was a significant knowledge gap between the learners. All three models allowed for the development of skills including communication and collaboration. Learners reported an enhanced approach to patient care and professional practice including approaches to teaching as new preceptors.

Conclusion: Pharmacy students valued their experiences in novel student-preceptor models. These opportunities had a positive impact on overall learning during the rotations and as new practitioners.

PE27

Use of virtual interactive cases in a 2nd year pharmacy skills lab

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Background: Students struggle with information gathering from patient cases early in their advanced pharmacy practice experience placements. The Virtual Interactive Cases (VIC) software is an innovative, interactive tool for creating simulated patient encounters to facilitate deliberate practice opportunities. Our group implemented the use of VIC cases in the second year Medication Therapy Management (MTM3) lab to enhance opportunities for students to practise information gathering through a simulated hospital patient encounter and electronic health record.

Objectives: 1. To implement a Virtual Interactive Case scenario into one MTM3 lab. 2. To obtain feedback from students and clinical instructors on their experience with VIC in the lab.

Methods: Four different VIC cases were developed for use in MTM3 in the winter term of 2018. Each student was given 20 minutes to work up their assigned a VIC case individually, including gathering pertinent information and identifying drug therapy problem(s). The student then communicated the care plan with the prescriber (role-played by a trained standardized patient actor) while being assessed by a clinical instructor. To familiarize students with VIC, practice cases were provided prior to the lab. A post-lab questionnaire was disseminated to all students and clinical instructors.

Results: Two hundred and twenty seven out of 236 students enrolled in the course participated in the VIC lab. Fifty-five (24%) students and 22 (100%) clinical instructors completed the questionnaire. The majority of students (62%) felt that the allotted time was insufficient. Despite this, most students (70%) had the impression after leaving the session that they performed well and 84% of students received a grade of pass or honours on the lab. Half of the respondents felt that this experience gave them a perspective of hospital practice. Clinical instructor feedback identified knowledge gaps that prevented the standardized patient actors from answering important case questions appropriately.

Conclusions: VIC was successfully implemented into the MTM3 course. Students' perception on time allotted did not translate into poor performance. Students' experience may be improved by utilizing clinical instructors to role-play health care providers in future labs. The impact of VIC lab on information gathering skills requires further assessment.

PE28

Connecting a simulated virtual patient program with real-life clinical placements: perspectives from year 3 students at the University of British Columbia

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Background: In 2017-2018 Virtual Patients (VP) were piloted with Entry to Practice Doctor of Pharmacy students to develop their clinical reasoning skills and better prepare them for experiential rotations. Our evaluation of the pilot found that students felt VP cases were a valuable learning tool. However, whether students found the cases to enhance their inpatient experiential rotations was unknown.

Study Objectives: To examine the impact of VP cases on Year 3 students' inpatient experiential rotations.

Methods: Third year students (N=215) were invited to participate in an online survey that contained both closed and open-ended questions. Survey questions solicited student perspectives on the helpfulness of VP cases in developing their clinical skills and preparing them for their experiential rotations. Quantitative analysis of close-ended survey responses was completed. For the open-ended responses, analytic memos to discern emergent patterns from which first level descriptive codes were generated followed by second level "code mapping" which facilitated refined code categories and identification of central themes.

Results: Forty-three students (response rate = 20%) participated in an online survey following completion of their summer 2-week inpatient rotation. Findings suggest students agreed/strongly agreed (A/SA) that VP cases helped them to develop their clinical reasoning skills (84%). The most commonly identified themes related to this benefit included having to identify necessary information and using a methodological approach. However, students were less likely to state that VP cases helped them to: organize their thought process for patient assessments (51% A/SA); improve their confidence when assessing patients during inpatient experiential rotations (49% A/SA); and feel more prepared for their inpatient experiential rotations (67% A/SA). Student perceptions about how VP cases could be improved were also identified.

Conclusions: Overall, students did not feel that the VP cases improved their confidence and thought process while on experiential rotations. More work needs to be done to translate learning to student performance in real life practice.

PE29

Experiential opportunity: student intra–professionalism and mentoring in a community practice placement site

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Background: First year Bow Valley College (BVC) pharmacy technician students in Calgary are required to participate in an intra-professional half day experience with University of Alberta (UofA) fourth year pharmacy students completing their community practice placements.

Objectives: The goals of the experience are to provide students with an opportunity to learn about the roles and responsibilities of a pharmacist and pharmacy technician. Students interact in a practice based learning environment to gain an appreciation of the scope of practice of other health care professionals providing pharmaceutical care.

Methods: Faculty from UofA and BVC coordinate visits to the community pharmacy sites where fourth year students are completing placements. Technician students provide the pharmacist student with their resume and two questions prior to the visit. Using role playing and patient cases there are planned activities and discussions regarding the roles and responsibilities of technicians and pharmacists in a community pharmacy practice, fundamentals of team work and how to create a professional work environment.

The fourth year students act as preceptors and mentors to the technician students and complete a brief professionalism assessment for the technician students.

Results: UofA student surveys following the experience indicated the experience was overall positive. Comments were used to modify the experience for future students. BVC students completed a written reflection and overall they found the experience useful and insightful. UofA students were asked to reflect on their mentorship and preceptor skills as well as self-awareness of their professional responsibilities such as role modeling.

Conclusion: Both pharmacist and technician students describe involvement in an intra-professional experience in a practice based learning environment allowed them to learn about professional roles and responsibilities. UofA students found this experience insightful regarding their emerging professional identities. The experience involving a real vs simulated environment has many benefits however collaboration of the visits requires collaborative effort by both faculties.

PE30

Pharmacy curriculum in Newfoundland and Labrador: 1971-2016

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Study Objectives: My study explores the history of pharmacy education in Newfoundland and Labrador from the perspective of curriculum changes over time. It describes similarities and differences between program iterations, discusses the role of tradition in shaping curriculum, and suggests considerations for future curricula.

Methods: I obtained annual course calendars from university and college archives based on program dates and then chronologically documented the program structures, entrance requirements, required courses, and course descriptions. I analyzed the data to reveal what was emphasized and taught in the curriculum, while connecting it to perspectives on pharmacy practice during that time period. In particular, I identified commonalities and differences in program organization and curricular topics.

Results: Pharmacy practice and pharmacists' roles have traditional roots, which are subsequently reflected in curriculum. The College of Trades and Technology diploma program started in 1971, followed by the transition to a bachelor's degree program at Memorial University in 1986, and concluded with the 2016 admission cycle, just prior to the introduction of the PharmD curriculum. Foundational sciences, language and communication, pharmacy practice, pharmaceutical sciences, pharmacotherapy, business, research, and health systems are eight recurrent curricular topics. Critically examining curricula provided me the opportunity to think deeply about the selection, and just as importantly, the omission of certain courses and topics, such as the absence of social sciences and humanities. Furthermore, it is an opportunity to consider parallels and divergences with other pharmacy education programs.

Conclusions: As the School of Pharmacy at Memorial University transitions to the Entry-to-practice PharmD degree, and amidst the national conversation around expanding scope of practice, it is useful to look back at the history of pharmacy education in the province so we can reflect on changes that have occurred and where we, as a profession, are heading. Additionally, it is important for both novice and experienced educators to reflect on what and how they teach. These choices represent the values we emphasize for future pharmacists and will ultimately affect what they bring to practice upon graduation.

PE31

Development, implementation and evaluation of videos for modelling pharmacists' consultation skills

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Objectives: To describe the development, implementation and evaluation of instructional videos to model communication skills for pharmacist consultations in the Skills Lab curriculum of a four-year Bachelor of Science in Pharmacy Program.

Methods: Video scripts were written for three pharmacist consultations: New Prescription, Non-Prescription, and Monitoring. The exemplar videos modelled consultations following the _Dalhousie Pharmacist's Patient Care Process_ and _Calgary Cambridge Guide_. Standardized patients and pharmacists were professionally video-recorded playing roles in the Skills Lab setting. Videos were segmented into stages of the interview with commentary added. Two videos (New Prescription and Non-Prescription) were used as part of assigned preparatory materials completed before attending a workshop for second year students. One video (Monitoring) was used as part of a lecture for third year students. Students were invited to participate in a survey containing 5-point Likert and open-ended questions to evaluate their perceptions of the videos for modelling communication skills for pharmacist consultations. Results were compiled and analyzed for themes.

Results: Seven out of 86, 19/86 and 20/89 students completed the survey for each of the three videos, respectively. One hundred percent, 94%, and 84% of respondents for each of the three videos respectively, agreed or strongly agreed that the videos helped them to better understand how to conduct the pharmacy consultation and that the videos were an effective part of the teaching method for introducing communication skills. Students' ratings were lower for questions relating to the videos' effectiveness at demonstrating empathy and physical assessment skills. Students suggested videos could be improved if they were modelling "one good example and one bad example for comparison."

Conclusions: Instructional videos modelling communication skills for pharmacist consultations were implemented as part of teaching methods in the Skills Lab. Students indicated that the videos helped them better understand how to conduct the three types of pharmacy consultations but were less effective at modelling empathy and physical assessment skills. Future videos should consider modelling these specific pharmacist consultation skills.

PE32

Clinical simulation pilot project for fourth year pharmacy students at Université de Montréal

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OBJECTIVE: During their 40 week-community pharmacy and hospital experiential practice, many Pharm.D. students may not be exposed to acute and stressful clinical situations. Clinical simulations using standardized patients are used to train health care professionals. Objective was to assess feasibility of clinical simulations with fourth-year students and to describe their appreciation for this method of teaching (Kirkpatrick level 1).

METHOD: This activity was proposed to the entire cohort of fourth-year pharmacy students and 21 of them volunteered for a half-day clinical simulation. Students were divided in four groups where each student was exposed to 2 scenarios: 1) aggressive patient on methadone; 2) cancer patient with severe pain. Two actors played in each scenario which was followed by a debriefing period lead by clinical pharmacists. Students had to complete three different written questionnaires about anxiety, self-confidence in learning and simulation design scale at various points in time.

RESULTS: A total of 16 and 20 respondents filled out the questionnaires after the first and second simulation respectively. Based on the anxiety scale, students were less anxious and worried after the scenarios when compared to baseline. The students liked the quality of the acting and the debriefing period. After the first and second simulation, 93% and 90% of the students were fully in agreement that the simulations should be offered at least once to all pharmacy students.

CONCLUSION: This pilot project demonstrated the feasibility of clinical simulations in pharmacy. The simulations were appreciated by students. The next phase will encompass half of the fourth-grade cohort (nearly 90 students) with an impact measure of simulations on learning (Kirkpatrick scale level 2).

PE33

Nonprescription medications and minor ailment education across North American pharmacy schools

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Study Objectives: The use of nonprescription medications by the public to manage minor ailments is on the rise, and pharmacists' scopes of practice are expanding to allow minor ailments prescribing to manage these common conditions. Thus, it is imperative that pharmacy students are prepared to care for self-treating patients by conducting thorough assessments, facilitating evidence-based therapy recommendations, and adequately educating on the agreed-upon plan.[1]

Statement of Methods: An environmental scan was carried out in PubMed and Embase that looked at nonprescription medications, minor ailments and self-care curricula in pharmacy schools across the United States. Reports that discussed recommendations to enhance nonprescription medication and self-care education were especially relevant. Key words included nonprescription, minor ailments, education, and pharmacy. The search strategies were limited to English studies and between the years of 2004 to 2018.

Summary of Results: There is a paucity of Canadian literature on the subject of nonprescription medicines and minor ailments education in pharmacy programs. However, such research has been conducted in the United States. A survey distributed to U.S. colleges and schools of pharmacy five times between 2003-2016 highlighted the changes in nonprescription drug therapy instruction over these years. Changes seen in the U.S. illustrate minor ailment education becoming more important in curricula including a decrease in the number of schools that do not require any nonprescription medicine courses in their curricula.[2,3]

Statement of Conclusions: Advising on nonprescription medicines is an integral part of pharmacy practice in Canada. However, there is no clear picture of what minor ailments education looks like across pharmacy curricula in Canada. The research team's next steps are to disseminate an adapted version of the U.S. survey (mentioned in 'Summary of Results') across Canadian pharmacy schools, and conduct follow-up phone calls with academics in each institution to illuminate the current state of nonprescription medicines and minor ailments education in Canada. This research is the first of its kind and part of a larger grant initiative.[4]

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PE34

Admissions variables as predictors of academic performance in a post-baccalaureate Doctor of Pharmacy program

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Background: Elements considered for admission to the PharmD for Practicing Pharmacists (PPP) program at the University of Alberta include applicant GPA, curriculum vitae (CV), cover letter, professional references, and a personal interview. An evaluation of admissions processes and variables is an important component of overall program assessment.

Objective: To examine admissions data from the PPP program for associations with academic performance in didactic coursework in order to determine strongest predictors of success.

Methods: Admissions data was collated from applicants to the on-campus program between 2014 and 2017. Of the admitted students, grades in the four didactic courses were analyzed with their admissions data to determine if one or more of the variables correlated with performance in the academic coursework. Graduation year from the first professional pharmacy degree was also considered in the analysis.

Results: Data from 117 applicants were reviewed. Seventy-one of these were admitted to the program between 2014-2017. There was no apparent difference in the mean GPA of admitted and non-admitted students in the first two cohorts admitted, while the GPA of admitted students was higher in the most recent cohorts. For most other admissions variables, there was a difference in the mean scores of admitted and non-admitted students. A more recent graduation year was correlated with a higher overall admission score. Of those admitted to the program, admissions total score positively correlated with all course grades and overall program GPA. Admission GPA correlated with overall GPA within the PPP program, whereas CV, cover letter, reference letters, and interview did not correlate with grades.

Conclusions: Admission GPA appears to be the most consistent variable predicting academic performance within the PPP program. Future research to examine admissions variables and performance in experiential courses will provide further insight into the value of non-GPA based admissions variables.

PE35

Teaching pharmacy students to prescribe: evaluating the relationship between motivation, student engagement, and self-efficacy during an innovative lab activity

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Objectives: To determine if a gamified lab activity adds value to the student experience. Furthermore, to determine whether outcomes differ between students who are intrinsically versus extrinsically motivated (i.e., focused on mastery versus approval or grades).

Methods: We developed a lab activity based on "The Amazing Race" to engage second-year pharmacy students in rehearsing the skills to assess and adapt an inappropriate prescription for hypertension. We developed a 7-point Likert-type survey consisting of 27 questions by combining subscales of existing instruments (student engagement, self-efficacy, task value, intrinsic motivation, and extrinsic motivation) to evaluate the activity. The survey was available for one week after the lab and data was de-identified prior to analysis.
Students' dominant motivation type was determined from their internal and external motivation scale scores. We analyzed the data using a t-test (p=0.05) to determine whether motivation type influenced engagement and self-efficacy.

Results: 128 students were surveyed and 121 submitted (94.5% response rate). We performed a factor analysis on 27 items and 5 factors were identified: student engagement (α=0.94), self-efficacy toward patient care (α=0.92), self-efficacy toward communication skills (α=0.83), intrinsic motivation (α=0.77), and extrinsic motivation (α=0.77).
65 students were internal dominant, 45 were external dominant, and 10 were neutral. On average, students "agreed" the activity was engaging and were "rather sure" about their skills. No significant difference was observed between intrinsically and extrinsically motivated students for student engagement (5.2 vs 5.0, p=0.52) or self-efficacy towards communication skills (4.5 vs 4.4, p=0.59). Intrinsically motivated students felt significantly more confident performing patient care activities such as adapting a prescription (4.6 vs 4.0, p=0.01).

Conclusion: Gamification adds value to pharmacy skills labs, as both internal and external dominant students rated their engagement relatively high. The next step is to assess self-efficacy with a pre and post-activity study design to evaluate the activity's impact on this outcome.

PE36

Pharmacy prerequisites associated with interactive and non-interactive OSCE performance

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Objective: To identify academic prerequisites associated with interactive and non-interactive OSCE performance in the undergraduate pharmacy program at the University of Saskatchewan.

Methods: Retrospective data consisted of prerequisite grades and OSCE scores of 1183 students admitted to the undergraduate pharmacy program of the U of S from 2003 to 2017. Interactive and non-interactive OSCE scores from four sets of OSCEs in years 3 and 4 of the pharmacy program (Phar 465 and Phar 565) were calculated. Associations between OSCE scores and prerequisites were analysed using Pearson correlation and linear regression. Students were excluded from the analysis if one or more prerequisite courses were completed at another university.

Results: There were few significant correlations seen between the BSP prerequisites and OSCE scores. Although there were a large number of statistically significant correlations found with the Pharm D prerequisites, the strength of the correlations was uniformly weak (0.10 to 0.20). Courses in Nutrition, Physiology, and Microbiology showed the strongest association with interactive OSCEs. The strongest associations with non-interactive OSCEs were seen with Nutrition and Microbiology.

Conclusions: OSCEs assess a range of clinical skills including verbal communication, professional judgement, application of knowledge, and problem solving ability; thus, OSCEs might serve as an important proxy for measuring future clinical success. Our previous research identified a strong association between persistent academic success in the pharmacy program and prerequisites associated with higher-level learning skills such as knowledge organization, skill mastery and knowledge synthesis and application. The weakness of the associations between prerequisites and OSCEs while consistent with other findings in the literature, may point to an important limitation in the scope of important clinical and problem-solving skills currently assessed by OSCEs in this and other pharmacy programs.

PE37

Exploring students' experience of learning during practicum

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The UBC Faculty of Pharmaceutical Sciences' E2P-PharmD curriculum involves 42 weeks of experiential education. Many students enter the program without relevant practice education experience. Therefore, it is important to provide support for student learning in practicum settings. Identifying opportunities for learning is the first step in building the necessary supports. The goal of this study was to identify the situations and conditions conducive to learning in practicum settings. The research questions focused on (1) identifying practicum situations and conditions conducive to effective learning, and (2) the differences in learning between academic and practicum setting, across years and types of practicum (hospital or community).

Nine students from all years of the UBC Pharmacy Program were selected through stratified purposeful sampling and individually interviewed, using qualitative interview methods about their practicum learning experience. Data summarization and transcript coding for themes and categories, analyzed in the tradition of interpretational analyses, was applied.

The practicums were described as conducive to acquiring interprofessional skills, self-assessment skills and feeling of self-efficacy. A "learning script" emerged from the participants' descriptions. Common elements of this script included: a "trigger", which could be a preceptor assigned task, or independently set goal by the student; an iterative process of "practice" involving preparation, looking up necessary information, application of the information, reflection-in-action, self-assessment and looking for feedback; in some cases there was "follow up" and/or "reflection-on-action". Conditions for effective learning when enacting this script included preceptor's support, clearly defined (and accepted by the student) responsibilities, sense of independence, involvement in interaction with patients. A stronger sense of initiative for self-improvement appeared to evolve as students progressed through the years. Differences in the "learning script" emerged across hospital and community settings in the level of students' independence, preceptors' guidance, and the variety of patients.

These data will allow us to build an educational tool about learning how to learn in practicum settings so that students may gain the most out of their practicums.

PE38

Service learning and AFPC competencies: assessment of a course revision

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College of Pharmacy and Nutrition: University of Saskatchewan

Objective: To describe the revision, implementation, satisfaction with, and assessment of a service-learning course.

Background: With a curricular change to a PharmD program in 2017-18, the service-learning course at the University of Saskatchewan was revised in 2018-2019 to conform to AFPC outcomes and to closer integrate with other courses in the curriculum.
To meet course requirements, year one students completed 60 service-learning hours in a community-based organization (CBO) in Saskatoon over two terms (30 hours each term), attended an oral group reflective session, and completed a written reflection. AFPC outcomes of health advocate, professional, and communicator were assessed. Formative, summative, peer, and self-assessment was utilized to assess the students.   Assignments and assessments were revised to align with AFPC outcomes and to ensure competencies were reflected over all components of the course. The evaluation form was reformatted to a rubric with defined criteria that students had to demonstrate to achieve proficiency in the competency.

Methods: Students evaluated the course through a survey.   Faculty met with CBO staff after the course completion to assess satisfaction and obtain feedback about the revised course. Data was gathered and assessed using mixed-methods.

Results: All students, except one, successfully completed course requirements.   The student has since undergone remediation and has completed course requirements. All 73 students completed the course evaluation. Overall, 89% of students felt they were able to achieve the competencies with 100% agreeing that they improved their communication skills. Additional details were gathered through the survey and are available for presentation.
CBO staff felt the course was successful. Suggestions to modify the evaluation form, especially the communication competency, and to have the course extend over two terms as opposed to two separate course offerings were adopted.

Conclusion: The course was deemed valuable by both students and CBOs. Based on feedback, the course was revised in 2018-19 to become a two-term course. The evaluation form was revised to add the collaborator competency and to break up the communicator competency.

PE39

Implementation and evaluation of immersions for year one PharmD students at the University of Saskatchewan

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Objective: To describe the implementation of year one PharmD immersions in community pharmacy, medSask, and Medication Assessment Centre (MAC) settings, and to determine if these settings are effective for students to achieve AFPC competencies of care provider, communicator, professional, and scholar at a year one proficiency level.

Background: The PharmD curriculum at the U of S was designed so that students could begin experiential learning in Year 1 Term 1. These experiences were described as immersions or site visits and began in 2017- 18. Students completed four 3-hour immersions in community pharmacy and two MAC and medSask immersions over two terms. Each site and visit had specific competencies for students to achieve and a unique evaluation form. Students also completed written reflections of the community experience.

Methods: A mixed methods design was used in which qualitative (student and preceptor survey responses, and student reflective assignments) and quantitative (student and preceptor assessments for immersions and mandatory student course evaluations) data were collected and analyzed. Data were collected through student and preceptors surveys following course completion and submission of final grades. Student and preceptor satisfaction with the immersions was assessed and feedback about possible improvements was solicited through the survey.

Results: Overall, 95% of students agreed that they were able to achieve course competencies while 5% remained neutral. Preceptors overall felt the course was successful. Additional details and data were gathered and are available for presentation. The suggestion to have the course extend over two terms as opposed to two separate course offerings was adopted. The evaluation forms were modified, where appropriate, based on feedback from both students and preceptors and to better align with competencies assessed within the immersions.

Conclusion: The course was deemed valuable by both students and preceptors. Based on feedback, the course was revised in 2018-19 to become a two-term course. Future immersion refinement or adjustments will be determined and course revisions will occur as needed.

PE40

The SIMpathetic program: implementing simulation stethoscopes in an E2P PharmD program at the University of British Columbia

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Background: Human patient simulators (HPS) are currently used in our program to help teach physical assessment to Entry-to-Practice Doctorate of Pharmacy (E2P PharmD) students. However, HPS present limited opportunities for live interaction in communication and bedside manner while performing physical assessment. Therefore, during the 2018-19 academic year, the SIMpathetic Program, which combines the use of simulated stethoscopes with standardized patients, will be piloted with Program Year (PY) 1-3 students.

Study Objectives: To describe the implementation of the SIMpathetic program and the preliminary data on its perceived benefits and challenges.

Methods: Students from PY 1-3 will be exposed to two novel cases requiring the use of a simulation stethoscope to assess a standardized patient. Upon completion of the second case, students, facilitators, and standardized patients are asked to complete a survey to assess their experiences with the simulation stethoscope and to provide suggestions for activity improvements. To date, only PY2 preliminary survey data has been completed and available for analysis.

Results: Program Year 2 survey results suggest that 80% (152/189) of students perceive the SIMpathetic program as very/extremely useful to effectively prepare them for physical assessment in future practice. More students report feeling very/extremely confident in conducting physical assessment after using the simulation stethoscope (57/189 = 30%) compared to those who felt very/extremely confident prior to its use (27/189 = 14%). Suggestions for activity improvements include providing more preparatory materials and opportunities to practice, and real-time feedback from facilitators.

Conclusions: The SIMpathetic program was designed to provide opportunities for E2P PharmD students to develop their communication skills and bedside manner in relation to physical assessment. Next steps include completing PY1 and PY3, revising the activity to maximize its benefit, and looking for other areas in our program where simulation stethoscopes could be used to supplement or replace HPS.

PE41

Engagement of pharmacy students in practice based research

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Objective: Pharmacy students completing community practice placements often have unique opportunities to participate in pharmacy practice research projects which allow them to develop research skills while contributing to practice. Yet, student engagement and sustained involvement are common barriers to practice based research. The goal of this study is to describe a peer led model of pharmacy student engagement in practice based research and subsequent recruitment.

Methods: Fourth year pharmacy students completing their 8-week community practice placement (N=45) were invited to participate in a project with the goal of identifying critical inhaler errors in Albertans. Students attended a project presentation and received data collection forms, list of critical inhaler errors and instructions one week prior to their placement starting. To monitor students' progress and address possible questions, a peer student followed up and tracked participants' recruitment via phone calls, Facebook posts and emails. Students were contacted at weeks 2, 4, 5 and 7 and by individual request. Strategies to overcome commonly reported concerns, questions and motivational messages were addressed in emails.

Results: During the first round of phone calls students had recruited 40 patients and reported barriers including lack of familiarity with data collection process, low confidence in completing the asthma action plan and inability to integrate study procedures into pharmacy workflow. By the end of week 4 and 5, the number of recruited patients were N=86 and N=128 respectively. The approximate time to conduct each round of phone calls was five hours. Students were enthusiastic and displayed interest and effort in contributing to practice based research.

Conclusion: Peer support in engaging pharmacy students in practice based research was feasible and supported the robust recruitment of Albertans with asthma and COPD. Frequent communication with a peer was effective in identifying issues that had the potential to jeopardize the study and also proposed their timely solutions.

PE42

Putting the pieces together - implementation of a jigsaw classroom to teach pharmacy students

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Background: The Jigsaw teaching technique (https://www.jigsaw.org/) was implemented into Program Years (PY) 1-3 of a 4-year entry-to-practice PharmD program at the University of British Columbia. A Jigsaw classroom was used to teach Head, Eyes, Ears, Nose and Throat dosage forms in PY1, respiratory dosage forms in PY2, and contraceptives in PY3. Although this technique has been used in elementary and high schools, its use in healthcare education is limited.

Study Objectives: To describe the implementation and evaluation of a Jigsaw classroom into a pharmacy curriculum.

Methods: Prior to the Jigsaw tutorials, students were divided into six smaller groups of 6 students. One student from each group was assigned to be the leader or expert for a particular dosage form or topic. The expert was asked to research and be prepared to teach their topic to their small group. At the beginning of the 3.5 hour tutorial, all the experts for a particular topic met for 30 minutes to solidify their knowledge and discuss teaching strategies. Students then rotated through six stations; during which each expert took turns teaching their topic to their small group. The session concluded with a Faculty member reviewing the key points from each topic with the entire class and students completed an online quiz.

Results: Instructor reflections and feedback from students were reviewed. Students reported the Jigsaw teaching technique reinforced their learning by teaching and working collaboratively with their peers. Suggestions for improvements include more comprehensive preparatory materials and accountability for topic experts to prepare well for the sessions.

Conclusions: Based on Faculty and student feedback, the use of the Jigsaw technique improved the learning experience for students. Next steps include expanding use of this technique to teach other topics, and measuring the impact of the Jigsaw classroom on students' retention of knowledge and skills and their ability to teach.

PE43

Implementation of an academic teaching practicum for program year 4 entry-to-practice PharmD students

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Background: Academic teaching rotations within the Entry-to-Practice (E2P) PharmD program at the University of British Columbia (UBC) have been offered to post-graduate PharmD students and BC Pharmacy Practice residents since September 2015. Building on the success of these rotations an academic teaching practicum was created for Program Year 4 (PY4) E2P PharmD students.

Objectives: To describe the implementation of an academic teaching practicum elective for PY4 E2P PharmD students within an E2P PharmD Program.

Methods: In response to the Faculty's call for non-direct patient care placements, a 4-week academic teaching practicum was created and offered as an elective to PY4 E2P PharmD students. Practicum objectives and activities were developed to align with existing academic teaching rotations being offered and with the Association of Faculties of Pharmacy of Canada (AFPC) Educational Outcomes.[1] A practicum specific manual for students and preceptors was also created to outline the objectives, activities, expectations and assessments specific to the academic teaching rotation.

Results: In the fall of 2018, a 4-week academic teaching practicum elective was launched with a total of four students completing the practicum by the end of the academic year. Four different faculty members participated in the elective and each precepted one student. Over the 4-weeks, students completed various required practicum activities including participating in teaching sessions of various formats for students in PY1 to PY3, developing learning materials and assessments, and evaluating students.

Conclusions: Implementation of the academic teaching practicum provided PY4 E2P students with a practicum opportunity aimed to develop their knowledge and skills in adult learning and pedagogical practices. Next steps include promoting a greater awareness of the elective with PY4 students and refining the practicum based on feedback gathered from this first iteration.

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[1] Educational Outcomes for First Professional Degree Programs in Pharmacy in Canada. Quebec City. Association of Faculties of Pharmacy of Canada (AFPC); 2017.

PE44

The evolution of a national online educational resource for informatics

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Objectives: To improve the quality of the "Informatics for Pharmacy Students" e-Resource to allow relevant and valid teaching and learning about e-health in Canadian schools of pharmacy, and to expand its utility to other health professions

Method: Against a backdrop of electronic health records, digital information resources, and expanded scopes of practice, the e-Resource was developed in 2012 by the Association of Faculties of Pharmacy of Canada with funding by Canada Health Infoway. With the goal of updating and expanding the e-Resource, modifications and reorganization resulted in the release of two subsequent versions. Formal internal evaluations helped inform the directions taken to improve the e-Resource. Content modifications underwent a structured review process through an editorial advisory committee and peer review. Several other sources informed revisions: faculty case reports on integration and curriculum changes, learning management system analytics, and feedback from student users.

Results: Version 3 was released in August 2017 with significant revisions and additional learning activity development. All chapters were enhanced and updated, with improved navigation and formatting for a streamlined learning experience.

To date, over 5000 learners have enrolled (with over 4800 enrolled prior to its launch). User testing revealed little or no technical difficulties and satisfaction with content and platform.
Two chapters were translated into French. Approximately 500 students and faculty have accessed the French version.

An interprofessional version has also been launched, intended for use by medical, nursing and pharmacy students. The topics chosen for development were e-MedRec and e-Prescribing. The platform has been redesigned for greater appeal to other professions: http://elearnhcp.ca/

Conclusion: Continuous improvement and expansion of the e-Resource has resulted in a robust, stable platform about information and communications technology in healthcare for use in health professions education.

PE45

Pill counter, businessperson or health care provider? A discourse analysis of professional identity in pharmacy education

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Background: Professional identity formation - the development of professional values, actions, and aspirations – is gaining momentum as a movement for educational reform in health professions education. Currently, and historically pharmacist identity has been contested: are they merchants or health care professionals? This unformed professional identity may have significant effects on recruitment, retention, acceptance by other healthcare professionals, and approval by society.

Objectives: The objectives of this study were to explore (1) what have been the professional identities in pharmacy education over the last century in North America and (2) which one(s) currently dominate the curricula.

Methodology: A Foucauldian informed historical critical discourse analysis was undertaken to uncover the educational assumptions underpinning pharmacist identity over time. This analysis, allowed for the questioning of the roles of the pharmacist that are taken for granted and assumed as rational and inevitable.

Results: This study identified five prominent discourses in the literature related to the professional roles of pharmacists over the last century. The identities are the "apothecary", "druggist", "merchandiser", "expert advisor" and "health care provider". Each of these discourses constructs the pharmacist's professional role in different ways and as such makes possible certain language, subjects, and objects. An unexpected finding of this research was that over the years there were no clear discursive shifts in the education literature, but rather discursive "pile-ups" of all identities.

Conclusions: Each identified discourse remained present throughout the entire archive. These "discursive pile-ups" suggest that each discourse continues to have relevance to pharmacy educators, and as such competes for space in the curriculum. This likely contributes to the identity challenges pharmacists currently face. This critical discourse analysis reveals that pharmacist identity constructs are not straightforward, self-evident, or progressive. Pharmacy educators must determine the ultimate goal of pharmacy education and begin a formal process of inculcating the ideal identity discourse in pharmacy curricula.

PE46

Pharmacy student and patient educator perceptions on a patient-centred care activity in a lecture theatre

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Objectives: Patient-centred care is a core concept for pharmacy programs; ensuring that patients are put at the forefront of their health and care. While most students work with real patients on experiential practicums, exposure to patients in the curriculum is limited due to challenges with time, space, and available patient educators. The purpose of this study was to evaluate pharmacy student and patient educator perceptions of a patient activity delivered in a lecture theatre.

Methods: A 30-minute activity was piloted in a first-year PharmD course. 222 students were placed into groups of 6 and assigned to 1 of 12 patient educators during a particular time-slot for the activity. Following the activity, electronic surveys were deployed, which included Likert-scale and open-ended questions. Surveys gathered information on student perceptions of important learning points, deployment in a lecture theatre, and value of activity and patient perceptions on additional learning points for future activities. Analysis was conducted based on descriptive statistics.

Results: Surveys were sent to 222 first year pharmacy students and 12 practice educators. Survey completion rate was 99% for students and 100% for the patient educators. Students agreed (18%) and strongly agreed (81%) that the activity was overall enjoyable and valuable. Common learning points from students included the importance of developing a connection with patients and the significant impact pharmacists can play in their lives. Students would have preferred smaller, breakout rooms, but felt the large lecture hall was still an appropriate space. Both students and patient educators would like to see rotating stations in the future to allow groups to interact with more patients.

Conclusions: Pharmacy students and patient educators expressed positive attitudes and value towards actively listening to one another to learn about the importance of fostering meaningful patient-pharmacist relationships. Early exposure and high impact activities like these can be organized and implemented even with limited time and space availability.

PP01

Indigenous community-driven clinical pharmacists services

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Objectives: Our goal is to find ways of fostering meaningful collaboration with Indigenous communities to improve patient care through a new initiative entitled, "Community-driven Clinical Pharmacist Services." This initiative is unique in that it involves partnering with Indigenous communities, the First Nations Health Authority and the University of British Columbia's Pharmaceutical Sciences' Pharmacists Clinic, to co-develop and implement clinical pharmacist services. Strong relationships have been built through mutual respect and a shared vision of fostering an initiative focusing on community-centered and nation-based needs.

Methods: This initiative involves five Indigenous communities and consists of two phases. Phase I explores community needs and priorities for clinical pharmacist services through open conversations. There is a commitment to have conversations with community members, Elders, local healthcare providers, and health directors. Conversations occur through community visits, one-on-one interviews, and/or online questionnaires. Information gathered is then reviewed and a community-specific plan is co-developed detailing recommendations for services. Phase II focuses on implementing sustainable clinical pharmacist services, as identified and developed in Phase I. This could include direct service delivery by the UBC's Pharmacist Clinic or local pharmacists, direct support to local healthcare providers, or other community-identified solutions.

Results: One community has completed Phase I, resulting in the collation of valuable insights into the community's healthcare needs and priorities. Such responses included a desire for pharmacist-led education sessions and one-on-one medication management via in-person and telehealth. Information gathered has allowed design and development of community-specific services to begin through ongoing collaboration between the community and the faculty-run clinic.

Conclusions: This grassroots approach represents the opportunity for reciprocity – learning from expert community members and utilizing university and health authority resources to provide community-driven, nation-based clinical pharmacist services. The communities involved in the initiative express a need for increased and optimized pharmacy services and are open to partnering with the faculty-run clinic and health authority. An opportunity is presented for more partnerships between Indigenous communities and faculty-run clinics to improve culturally safe pharmacist services and most importantly, health outcomes.

PP02

Pharmacist's perceptions towards their preparedness to participate in medical assistance in dying

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Objective(s): To determine Newfoundland and Labrador (NL) pharmacists' willingness to participate in medical assistance in dying (MAiD) and identify potential barriers to their participation.

Methods: An online survey was made available to all pharmacists practicing in NL through the Pharmacists Association of NL. The survey was active from May 25th to July 13th 2018. The questionnaire included multiple choice, Likert-scale, and open-ended questions. Information on pharmacist demographics, views towards MAiD, willingness to participate in MAiD, factors contributing to unwillingness, concerns on participation, perceptions about their knowledge, skills, and ability to interpret provincial practice guidelines was collected. Analysis of data was conducted by descriptive statistics for quantitative data and content analysis for open-ended questions.

Results: A total of 176 valid survey responses were received, which represented approximately 24% of pharmacists in NL. Over 80% of respondents were willing (very willing or probably willing) to participate in the following aspects of MAiD: dispense prescriptions (83.6%), provide drug information to physicians (92.6%), and respond to patients' general inquiries (85.8%). Over 60% of respondents felt they lacked knowledge about the MAiD process, oral/IV medications for MAiD, what information to give patients about MAiD, and the knowledge needed to counsel physicians on MAiD medications. Only 16.5% of respondents had participated in MAiD education and 85.2% felt pharmacists should be required to complete an education program before participating.

Conclusion: The majority of respondents are willing to participate in MAiD. However, there are pharmacists unwilling to participate and their individual rights to exercise conscientious objection should be protected. Despite the majority of respondents being willing to participate there are potential barriers limiting pharmacists' ability and willingness to participate. The survey results suggest there needs to be additional supports (e.g. educational, emotional) developed to assist pharmacists in this new practice area.

Formation of a collaborative interprofessional primary health care deprescribing research team in Nova Scotia

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Study objective: To describe the development of a collaborative interprofessional primary health care deprescribing research team in Nova Scotia.

Methods: Initiated by two College of Pharmacy faculty members, a core group of 6 health care researchers with an interest in forming an interprofessional primary health care deprescribing research team met in 2016. Based on positive feedback, the next steps involved building the team which included 1) creating the team (determination of needed expertise; description of roles and responsibilities); 2) establishing goals/objectives; 3) determining team functioning (leadership, ascertainment of common mission, determining communication strategies and delineating decision-making approaches); and 4) monitoring team outputs (e.g. presentations, publications, grants); and team functioning (e.g. discussions at team meetings, team assessment survey, social network analysis).

Results: The first team meeting was in April 2017, and as of January 2019 the team had expanded to 9 core members with research assistants/students added to the team as necessary. At initial team meetings, the two College of Pharmacy faculty members assumed a co-leadership role, established the overarching goal of the team, set specific objectives and reached a consensus on various aspects of team functioning. The team has received five grants. Eight posters/oral presentations have been presented and two manuscripts are in preparation. A team assessment survey was completed in the spring of 2018 which resulted in changes to communication strategies. A social network analysis is underway.

Conclusions: An interprofessional deprescribing primary health care research team was successfully formed in Nova Scotia. This success has hinged on a team committed to working well together, sharing common goals, effective communication, positivity towards the research and celebrating successes.

PP04

Successful implementation of clinical pharmacy services: lessons from the field

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Background: Despite the positive impact of clinical pharmacy services on resource utilization and patient health outcomes, many community pharmacies have yet to implement these services routinely into daily practice.

Objective: To summarize existing literature on implementation methods and consolidate practical strategies community pharmacies can utilize in their own clinical service implementation process.

Methods: Damschroder et al's Consolidated Framework for Implementation Research (CFIR) was chosen as a theoretical framework to classify the implementation methods and strategies outlined in the literature for this narrative review. Searches were conducted in PubMed, Google Scholar, EMBASE, and selected pharmacy practice and implementation journals. Additional targeted searches provided further insight into general concepts originally identified in the first stages of the search.

Results: A total of sixty-two papers were identified, with the overwhelming majority containing concepts related to the "Inner Setting" CFIR domain. "Process" and "Outer Setting" were highly referenced as well, with "Intervention Characteristics" being the least common. The majority of specific examples extracted from these papers relate to the "Inner Setting" and "Process" domains, yielding thirty-nine and fifteen of the sixty-four total examples, respectively.

Conclusion: Through the use of the CFIR, our paper explored a wide variety of pharmacy services and offers practical implementation examples from the field. The importance of the "Inner Setting" is very apparent and logical, as our focus was on implementation strategies within the scope of individual pharmacies. While the general lack of outcomes data in the literature should be noted, these consolidated pragmatic examples can be used by pharmacies undergoing their own implementation process of clinical services into a community setting, and furthermore as a foundation for the development of an implementation blueprint.

PP05

Implementation of pharmacist care planning services in Alberta: a step in the right direction?

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Objective: Remuneration for pharmacist care planning services was implemented in Alberta in 2012. The objective of this study is to understand how care planning services are performed by pharmacists, as well as strategies used to implement these services in practice.

Methods: This qualitative study utilized a longitudinal, multiple-case study approach.   Purposive sampling was used to identify 4 cases (community pharmacy sites) which were selected based on services provided, practice context, and location. Data collection included document review, observation, and semi-structured interviews of pharmacists, pharmacy technicians, other pharmacy staff, health care providers and patients. Interviews were audio recorded and transcribed verbatim. A constructivist grounded theory approach was used to analyze data.

Results: A total of 94 hours of observation and 77 interviews were conducted. The overall process of care planning was similar between pharmacy sites, however there were differences in how care planning was performed and extent of collaboration with other health care providers. Care planning services were provided at the community pharmacy, in the patient's home, as well as "on-site" at long term care facilities or physician's offices depending on the pharmacy site. Documentation to support collaboration differed between cases. Community pharmacists co-located with physicians developed and implemented collaborative care plans. Strategies that were commonly used to implement care planning services included software adaptations to flag eligible patients and prompt follow-ups, software changes to support documentation, organizational changes and task shifting. Implementation strategies tended to evolve over time as pharmacists learned from experience.

Conclusions: A government-funded compensation plan for pharmacy services was put forward to support changes in pharmacists' roles and contribution to primary health care. A number of implementation strategies were used by pharmacists to integrate care planning services into practice. Our data suggest that care planning services are still evolving however pharmacist's roles have shifted to more patient-centred care. Findings may be useful to pharmacy practice researchers in other jurisdictions as well as educators.

PP06

Using a patient panel approach to identify patients for pharmacist referral and the impact of pharmacist intervention on the management of uncontrolled type 2 diabetes

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Objective: A pharmacist with the UBC Pharmacists Clinic (the Clinic) working collaboratively in a co-located setting with a family physician at Blundell Medical Clinic explored a systematic, proactive approach to identifying patients within a patient panel, via ICD 9 codes, for pharmacist referral. The first group of patients identified had a type 2 diabetes diagnosis and HbA1c >8%. The objectives were to determine if this approach is an effective way to identify patients for pharmacist referral and if the pharmacist interventions led to an improvement in HbA1c for those with uncontrolled type 2 diabetes.

Methods: A retrospective review of patients seen at Blundell Medical Clinic by the pharmacist between June 2016 and July 2018 was conducted. Pertinent data (patient characteristics, medications, HbA1c measurements, drug therapy problems (DTPs) and pharmacist recommendations) were extracted from electronic medical records at the two clinics and analyzed.

Results: Of the 12 patients identified, each patient averaged 3 appointments with the pharmacist. Patients were 75% male with a mean age of 63.6 years, mean duration of illness of 13 years, mean HbA1c of 9.1%, averaged 1.8 DTPs at the initial visit. Pharmacist recommendations included initiating insulin in 15.4% of patients, increasing insulin dose in 41.6% of patients and increasing adherence in 25% of patients. Following pharmacist intervention, the mean reduction in HbA1c from first to last visit was 1.18% and 1.33% from first visit to 3-6 months post last visit.

Conclusion: The results support a proactive approach using a patient panel as a way to identify patients with uncontrolled diabetes for pharmacist consultation. Pharmacist interventions in collaboration with a family physician were associated with reductions in HbA1c measurements. This patient panel approach is sustainable in a collaborative, primary care setting to identify future patients for pharmacist consultation.

PP07

Impact of collaboration between the UBC Pharmacists Clinic and a neurologist in the management of headache patients

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Rationale: Pharmacists are well positioned to provide support and medication management to patients with headache disorders.

Objectives: To characterize patients referred to UBC Pharmacists Clinic by a neurologist for headache management and evaluate clinical outcomes related to headache burden.

Methods: A retrospective review of all patients referred to a clinic pharmacist by a neurologist between 2014 and 2017 was conducted. Pertinent data (patient characteristics, headache type, frequency and severity of attacks, medication use) were extracted from electronic medical records for initial and follow-up pharmacist visits to enable pre-post comparison.

Results: A total of 105 patients were included (73.3% female, mean age 47.6 years). On initial pharmacist visit, 44.8% of patients had a diagnosis of chronic migraines; 22.9% had migraines without aura, 17% had episodic migraines, 9.5% had mixed headaches, 4.8% had migraine with aura, 1% had tension headaches. Mean headache frequency was 19.6 attacks monthly, decreasing to 7.1 on follow-up (p≤0.05). Initial headache severity was reported as mild, moderate or severe in 10, 45 and 36.7% of patients, respectively with data unavailable for 8.3%. Headache severity was not consistently reported on follow-up. Pharmacists recommended non-pharmacological measures, pharmacologic prophylaxis alone, a combination of abortive and prophylaxis therapies and abortive therapy alone for 85, 48.3, 41.7 and 5% of patients, respectively. De-prescribing of drugs was recommended for 53.3% of patients. On follow-up, increased use of headache prophylactic medications and decreased use of abortive medications was seen. Over half of patients were deemed to be at risk for medication overuse headaches and received pharmacist intervention and education to manage this.

Conclusion and implications for practice: Pharmacist interventions, in collaboration with a neurologist, demonstrated clinically meaningful reductions in headache frequency. Pharmacists have the unique knowledge, skills and accessibility to make meaningful impacts for headache sufferers.

PP08

Patient experiences and perceptions of a university affiliated pharmacist-led clinic

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Objectives: The University of British Columbia Pharmacists clinic provides comprehensive medication management to patients following a healthcare practitioner referral or self-referral. This study aimed to qualify patient expectations and perceptions related to care received through this pharmacist-led model.

Methods: A two-step mixed qualitative-quantitative approach was used consisting of a paper-based survey prior to the initial pharmacist consultation, followed by a telephone-based survey post consultation. The paper-based survey used open ended questions to capture patient expectations of consultation. Post-consultation telephone surveys consisted of a rating scale, to solicit patient satisfaction, and open-ended questions, to capture the patient experience. Patients were successively enrolled until saturation point was achieved. Qualitative content-analysis was used to identify major themes.

Results: Sixteen patients completed both pre and post study elements. Ten patients completed the initial survey but not the post-survey and were considered lost to follow-up. Of the patients recruited (n = 26), 50 % (n = 13) self-referred and 50 % (n = 13) were referred by healthcare providers. Post-consultation, 100 % (n = 16) of patients were very satisfied with their appointment and would recommend it to others. The majority of patients expected to obtain more information about medication adverse effects and possible drug-drug interactions, likely reflecting public perception of pharmacist scope. Content analysis in comparison of initial expectation pre- vs post-consultations found expectations were either met (38%) or exceeded (62%) for all patients. Four major themes emerged: i) obtaining clarity around current drug therapy, ii) pharmacist accessibility (time, communication, relatability), iii) education and activation of patients to partake in self-management, and iv) constructive feedback regarding degree of pharmacy learner involvement during consultations.

Conclusions: Pharmacist services exceeded patient expectations likely due to lack of awareness and experience with pharmacists practicing in consultative settings. Emergent themes suggest areas of focus for pharmacists working in community-based care.

PP09

Understanding the efficacy and safety of cannabis use in women's health: a scoping review

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Objective: The reproductive life cycle is at the forefront of women's health, influencing a female's choices, actions and health throughout her lifetime. At each stage, from menstruation to menopause, certain conditions or symptoms may arise warranting therapy interventions. As legalization pushes societal acceptance of cannabis as an alternative drug therapy, there is increased patient interest in using cannabis for their symptom management. Our primary objective is to review existing literature regarding cannabis use, in the context of women's health-related conditions or symptoms, to evaluate the quality of findings and identify current knowledge gaps.

Methods: A systematic search in MEDLINE, EMBASE, CINAHL, Cochrane Library, and ProQuest Dissertations & Theses Global from inception to September 2018 identified relevant literature on keywords derived from cannabis and women's health topics. Search terms included "cannabis, marijuana, or cannabinoids" and "women's health, menstruation, perinatal, maternal, or menopause". Inclusion criteria specified English-only studies related to the efficacy or safety of cannabis use as a primary measure or objective; all animal studies were excluded. Titles and abstracts were initially screened by two independent reviewers, using consensus on inclusion criteria. Full-text screening of remaining articles was conducted by one reviewer for complete relevance assessment against the research objective. Information regarding the form of cannabis studied, reason or indication for use (including outcomes), and female population characteristics was to be extracted. Scoping review was reported using the PRISMA-ScR checklist.

Results: A total of 3033 results were retrieved from all five databases and 2489 unique results were exported for review. Screening is ongoing and complete results will be available prior to conference date. Data extraction will provide narrative summaries and categorization of evidence.

Conclusions: This review will summarize the research landscape of cannabis use in women's health to highlight current gaps in knowledge. Results will be used to guide future work in understanding how women want to use medical cannabis and for what reasons.

PP10

What characteristics are associated with success in healthcare practitioners? A scoping review

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Study Objective: The primary objective of this study was to conduct a scoping review of the literature regarding characteristics that contribute to professional success.

Methods: In order to create a current and comprehensive description of personal characteristics that have been shown to be predictive of professional success in healthcare practice, a comprehensive search was conducted using Ovid MEDLINE. The search was restricted to English language articles with date of publication from 2000 to present. Characteristics identified as potentially linked to pharmacist success that served as the basis for the review included: motivation, critical thinking, emotional intelligence, core competencies, and work-life balance. Titles and abstracts were independently screened based on predefined inclusion criteria. Full-text articles were then reviewed and data were independently extracted and coded for recurring themes.

Results: Of 1118 identified, 10 articles were relevant and analyzed further. Nurses, physicians, and pharmacists were described in a variety of publication types: narrative reviews, survey reports, a case study, an opinion piece, a phenomenological study, and a systematic literature review. Content analysis revealed six broad themes: (1) 'personal mastery', which encompassed emotional intelligence and stress management; (2) 'dedication', which described being invested in themselves and their work; (3) 'collaborator', demonstrated by relating well to people and forming trusting relationships; (4) 'problem solver', including maintaining a global perspective when approaching tasks; (5) 'inspirer', by demonstrating enthusiasm, creating supportive environments, and encouraging professional growth; and (6) demonstrating 'excellence' through leadership in a focused area.

Conclusions: Research on the topic of personal characteristics and success is limited. The six themes identified as characteristics that contribute to healthcare practitioner success link closely to previous work. Future research could explore each of the six characteristics to see if they can be developed in professional programs and throughout a healthcare practitioner's career.

PP11

Quantitative exploration of Atrial Fibrillation patients' knowledge gaps: a systematic review and meta-analysis

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Background: Poor patient understanding of their disease and medications has been associated with poor adherence. Identifying patients' knowledge gaps is the first step towards improving patient education strategies.

Objective: To review the literature on AF patients' knowledge to identify their condition- and medication-related knowledge gaps.

Methods: Following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines, we searched PubMed, Embase, CINAHL, and PSYCHINFO from inception. Studies were included regardless of design, publication year, setting, and quality.
Different questions were asked of patients in different studies to assess the same area of knowledge, so we grouped data from related questions into *knowledge categories.* For each study, we extracted the proportion of participants who correctly answered the questions in each knowledge category. A random-effects model meta-analysis and heterogeneity estimate(I2) calculation was performed for each knowledge category. A category was considered a knowledge gap if the pooled mean number of participants who demonstrated knowledge of it was ≤50%. Qualitative data was summarized narratively. Quality of included studies was assessed using study design-specific tools.

Results: We included 21 studies (4703 patients). Eight studies assessed patient knowledge of AF, two assessed knowledge of stroke, fifteen assessed patient knowledge of anti-thrombotics and no studies assessed patient knowledge about rate and rhythm medications. 80% were of high quality. Twenty-seven knowledge categories were identified with 1-12 studies contributing per category. AF knowledge gaps were: AF can be asymptomatic, AF predisposes to heart failure, the name of one's own diagnosis, women's higher risk of stroke, and the definition of ischemic stroke. For medications, knowledge gaps included: drug-drug and drug-food interactions, vitamin K content of foods, the term "INR" and its interpretation, and actions to take in case of missed doses.

Conclusion: This systematic review identified several knowledge gaps among AF patients in clinically important areas that can act as targets for education strategies.

Assessment of atrial fibrillation patients' education needs from patient and clinician perspectives: a qualitative descriptive study

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Introduction: Patients' lack of knowledge is a key barrier to therapy adherence. We aimed to gather insights into atrial fibrillation (AF) patients' education needs from patient and clinician viewpoints.

Methods: We conducted a qualitative descriptive study using purposive sampling and semi-structured interviews with AF patients and clinicians recruited from AF clinics. Data from patients and clinicians were analyzed independently and iteratively through inductive qualitative thematic analysis.

Results: Eleven clinicians and 10 patients were interviewed. Three themes emerged from analysis of clinician data: (1) patients' knowledge gaps and misconceptions, (2) clinicians' experiences teaching AF patients, and (3) clinicians' suggestions for AF education programs. Four themes emerged from the patient data: (1) emotional appraisal of the disease, (2) information seeking behavior, (3) knowledge gaps, and (4) education preferences. A key finding was identification of the need for education that addresses patients' unjustified anxieties by emphasizing that AF is not fatal, and that many patients with AF live a normal life. Risk communication was identified as the most challenging aspect of AF education. In synthesizing our findings, we developed evidence-based recommendations for educational strategies for AF.

Conclusion: We found that AF patients have many knowledge gaps and misconceptions, significant emotional education needs, and a positive attitude towards online and classroom education. In synthesizing our findings, we developed evidence-based recommendations which can inform the design of AF patient education programs and initiatives.

PP13

Persistence of use of pharmaceutical cannabinoid agents in Manitoba, Canada: a population-based cohort study

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Objectives: Despite the mixed evidence to support their efficacy and their well-characterized side effects, pharmaceutical cannabinoids are used for a variety of conditions, such a pain. Randomized controlled trials are not able to measure the 'real-world' persistence of medication use. Hence, this study aimed to estimate the persistence of use of pharmaceutical cannabinoid agents, and the potential socio-demographic characteristics and medical conditions associated with the discontinuation of these agents in a naturalistic setting.

Methods: A retrospective, population-based, cohort study using health administrative data from the Manitoba Population Research Data Repository. Incident pharmaceutical cannabinoid users, from April 1st, 2004 to April 1st, 2016 were included and followed for one year from the date of first prescription dispensation. Persistence was defined as continuous use without a gap exceeding 60 days between prescriptions. The primary outcome was time to discontinuation of pharmaceutical cannabinoid use within one-year, adjusted for user's key potential sociodemographic characteristics and medical diagnoses.

Results: Among 5,881 pharmaceutical cannabinoid users, 5,452 were incident users, of whom only 18.1% (95%CI, 17.08-19.12) continued using cannabinoids at one year. Duration of use was highest for nabilone (Median, IQR; 33, 25-199 days) and lowest for nabiximols (20, IQR 7-30). Age and income status had a significant effect on persistence of cannabinoid use. Fibromyalgia (HR, 95%CI; 0.89, 0.84-0.95), osteoarthritis (0.91, 0.82-0.97), and substance use disorder (0.85, 0.76-0.94) diagnoses associated with longer use. Cancer associated with shorter use (2.73, 2.02-3.67).

Conclusions: In a naturalistic setting, persistence of pharmaceutical cannabinoids use was low. Their rates of discontinuation were influenced by age, income, and specific medical conditions of the cannabinoid users. The reason for these observed differences and the effects of the recent legalization of recreational cannabis in Canada warrant further investigation.

PS01

Predictability of capillary blood spot toward venous whole blood sampling for therapeutic drug monitoring of tacrolimus in solid organ transplant recipients

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Background: Therapeutic drug monitoring (TDM) of tacrolimus in whole blood obtained from venipuncture is routinely practiced due to its narrow therapeutic range. Dried blood spots (DBS) may act as a suitable alternative for tacrolimus TDM due to relative ease of sampling and processing. The objective of this literature review was to provide a critical evaluation on the feasibility (i.e. bias and precision) of DBS for predicting tacrolimus whole blood concentrations in solid organ transplant recipients.

Methods: A comprehensive systematic literature search using PubMed, Scopus, EMBASE, and Google Scholar (until March 2019) identified 80 potentially relevant papers. The primary objective was to extract bias and precision data. The nature and performance of the analytical assay were also examined.

Results: A total of 11 studies (7 adults and 4 pediatrics) had available paired (i.e. both DBS and blood) data representing kidney, liver, heart, and pancreas transplants. The reported accuracy data in all studies were within acceptable threshold (<15%). This is supported by the lack of systematic or proportional differences between DBS vs. blood from Passing Bablok or Deming Regression analyses (N=11). However, the precision data were not consistently reported and only 3 studies met the acceptable threshold (< 15%). All DBS were analyzed by liquid-chromatography mass-spectrometry, which was proven to be sensitive and reliable for the small blood volume collected. The area-under the concentration-time curve (AUC) of tacrolimus derived from DBS was proven to be a better predictor of whole blood compared to single concentrations (N=2 studies). No differences in prediction were observed between pediatric and adult patients.

Conclusion: DBS is a promising approach for tacrolimus TDM. However, in order for DBS to become a useful substitute of tacrolimus whole blood monitoring in solid organ transplant patients, further systematic studies with sufficient power and comprehensive prediction-error analyses are required.

PS02

Guiding therapy with BRAF/MEK inhibitor combinations for BRAF-mutated melanoma

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BACKGROUND: Advanced melanoma is frequently associated with certain genetic mutations, 50% of which occur within the BRAF gene complex. Genomic testing is indicated in this setting to confirm the presence of a BRAF mutation for consideration of drug therapy. Pharmaceutical treatment strategies have attempted to target these mutations to induce inhibition, particularly that of BRAF V600E mutation. Although patients treated with BRAF inhibitors as a monotherapy exhibit disease progression within five to seven months, combination therapy with a MEK inhibitor appears to offer superior therapeutic results. The approved BRAF/MEK combination therapies include dabrafenib/trametinib, encorafenib/binimetinib and vemurafenib/cobimetinib. All combination therapies showed improvement for progression-free survival and better overall survival compared to monotherapy. However, there are no direct comparisons between these combinations, leaving the clinician with a dilemma regarding therapeutic selection.

OBJECTIVE: The primary objective of this review was to evaluate the literature and compare the pharmacological characteristics of the BRAF/MEK inhibitor combination therapies with the aim of creating a clinical tool to help guide clinicians in choosing the most appropriate and tolerable therapy for their patients.

METHODS: A literature search was performed, primarily focusing on systematic reviews and drug monographs, to compare and contrast different combination therapies. Areas of focus included pharmacokinetic properties, safety, convenience and cost. An assessment of common comorbidities that may influence drug therapy choice was performed and guidelines were created to outline the risks or precautions involved when selecting a specific therapy.

RESULTS: A flow chart depicting various contraindications of drug therapies based on patient comorbidities or other factors was created using the differences between BRAF/MEK combinations noted in the literature. This chart may be used as a tool to aid in clinical judgment for selecting drug therapy based on patient circumstances.

CONCLUSION: Given the variations in characteristics of BRAF/MEK combinations, including CV risk, QT risk, and contraindications around metastasis, this tool should aid clinicians in selection of appropriate therapy for melanoma patients.

PS03

Early childhood antibiotic use and autism spectrum disorders: a population-based cohort study

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Background: Changes in microbiota composition as a result of antibiotics use in early life has been proposed as a possible contributor in the etiology of autism spectrum disorders (ASD). We aimed to examine the association between early life antibiotic exposure and risk of ASD.

Methods: This was a population-based cohort study which included all live births in Manitoba, Canada between April 1, 1998 and March 31, 2016. We utilized administrative health data from the Manitoba Population Research Data Repository. Exposure was defined as having filled one or more antibiotic prescription during the first year of life. The main outcome was ASD diagnosis. Cox proportional hazards regression models were used to estimate the risk of developing ASD in the overall population and in a sibling cohort.

Results: Of all subjects in the cohort (n=214 834), 94 024 (43.8%) filled an antibiotic prescription during the first year of life. During follow-up, 2965 children received an ASD diagnosis. Compared to children who did not use antibiotics during the first year of life, those who received antibiotics had a reduced risk of ASD (adjusted HR 0.91, 95% CI 0.84-0.99). Number of treatment courses and cumulative duration of antibiotic exposure were not associated with ASD. In the sibling-controlled analysis, early childhood antibiotic exposure was not associated with ASD (adjusted HR 1.03, 95% CI 0.86 – 1.23).

Conclusions: Our findings suggested no clinically significant association between early childhood antibiotic exposure and risk of autism spectrum disorders and should provide assurance to concerned prescribers and parents.

PS04

Regulation of cardiac automaticity by 17β-estradiol during pregnancy

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Pregnancy is associated with an elevated resting heart rate (HR) which is a known risk factor for cardiac arrhythmias. Many significant hormonal changes occur during pregnancy. Notably, major increase in 17β-estradiol (E2) coincide with HR acceleration. However, the mechanisms underlying the association between E2 and HR remain largely unexplored. Accordingly, we aimed (1) to determine the role of E2 on the increased HR and cardiac automaticity during pregnancy, and (2) to delineate the involvement of the estrogen receptor isoform alpha (ERα) and beta (ERβ).

17β-estradiol administration (30 μg twice daily for 4 days) to non-pregnant female mice lacking ERα (ERKOα) or ERβ (ERKOβ) and their wildtype (WT) littermates significantly increased plasma E2 concentrations, up to late pregnancy levels (18-19 days of gestation) (23.3 ± 5 nM). Analysis of surface electrocardiograms showed an important acceleration of HR following E2 treatment in WT (520 ± 15 bpm; +E2 = 571 ± 16 bpm; n = 8; p = 0.001) and ERKOβ (511 ± 15 bpm; +E2 = 580 ± 10 bpm; n = 10; p < 0.001) mice. However, the HR remained unchanged in ERKOα mice (520 ± 16 bpm; +E2 = 530 ± 21 bpm; n = 7). To further investigate the role of E2, nodal-like human-induced pluripotent stem cell-derived cardiomyocytes (N-hiPSC-CM) were treated with E2 (100 nM for 48h). Spontaneous action potential rate from control and E2-treated cells showed that E2 significantly increases the automaticity of the N-hiPSC-CM (79.0 ± 2.2 bpm, n = 11; +E2 = 99.6 ± 5.5 bpm, n = 8; p < 0.05). In addition, the diastolic depolarization rate of the spontaneous action potential was also increased in E2-treated cells (27.3 ± 0.9 mV/s, +E2 = 53.1 ± 4.2 mV/s, p < 0.05).

In summary, administration of 17β-estradiol recapitulates the pregnancy phenotype and accelerates HR in both WT and ERKOβ mice, but not in ERKOα. These results implicate the E2-ERα pathway as a major contributor to pregnancy-induced increased HR. In addition, the increased N-hiPSC-CM automaticity following E2 treatment support a direct effect of E2 on cellular automaticity. Finally, these data demonstrate that the effects of E2 are also applicable to human nodal cells.

PS05

New evidence on the kinetic solubility profiles of indomethacin amorphous solid dispersions in water-insoluble hydrogel carriers

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Introduction: Kinetic solubility profiles of ASDs based on soluble carriers typically exhibit the so-called "spring-and-parachute" concentration-time behavior, whereas those based on insoluble carriers (including hydrogels) are known to show sustained supersaturation under nonsink dissolution conditions. The objective of this study is to verify whether it is at all possible to obtain "spring-and-parachute" kinetic solubility profile from ASDs based on crosslinked poly(2-hydroxyethyl methacrylate) (PHEMA) hydrogel beads.

Methods: The preparation of ASDs of a model poorly soluble drug indomethacin (IND) in PHEMA beads involved sorption from concentrated drug solution prepared in a good swelling solvent followed by solvent evaporation to achieve desired drug loadings. Dissolution testing of ASD samples was conducted on a Vankel 700 dissolution apparatus (USP II) in 250 mL of dissolution medium (pH 4.5 buffer) at 37°C and 150 rpm under nonsink conditions.

Results: Comparing the kinetic solubility profiles of ASD IND in PHEMA beads (11.18% loading at 20 mg IND dose) of different particle sizes, it is shown for the first time that a spring-and-parachute dissolution profile from ASD of IND can occur in water-insoluble PHEMA hydrogel of the smallest particle size range (< 75μm). Above this smallest particle size range, this "spring-and-parachute" behavior is avoided. This is also tested to compare the kinetic solubility profiles of ASD IND in PHEMA beads of the same particle size range but at different total dose levels (5, 10 and 20 mg). The results obtained support the concept that when lowering the total dose to generate an IND concentration below the critical supersaturation, the "spring-and-parachute" characteristics disappear and a sustained supersaturation results.

Conclusion: We have provided new evidence that it is indeed possible to obtain "spring-and-parachute" kinetic solubility profiles from ASDs based on water-insoluble hydrogel carriers via the use of the smallest particle fraction at high IND dose levels.

PS06

Commercially available North American phenytoin formulations and possible excipient interactions and food effects

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Background: The U.S. Pharmacopeia defines excipients as inert substances other than the active pharmaceutic ingredient (API) that are added in a drug delivery system in order to aid in the manufacturing process, enhance stability, bioavailability, safety, effectiveness and delivery of the drug. A remarkable example of API–excipient interaction is the 1968 phenytoin intoxication outbreak in Brisbane, Australia. The first formulations released into the market contained $CaSO_4$, which interacted with phenytoin – an unknown fact at the time - resulting in decreased bioavailability. When the manufacturer replaced $CaSO_4$ by lactose, the amount of drug absorbed was much higher, resulting in the observed intoxication outbreak. Follow-up studies hypothesized that phenytoin was converted to an insoluble calcium salt prior to ingestion.

Objective: To investigate further the interactions between excipients and phenytoin to delineate possible clinical implications and mechanistically re-examine the hypothesis and interpretations of previous studies.

Methods: Titration experiments with phenytoin and calcium salt were performed. Isothermal micro-calorimetry was used to determine incompatibilities between excipients, phenytoin/ phenytoin sodium and milk. The compounds were characterized by H^1NMR. Commercially available phenytoin sodium capsules in both Canadian and American markets were tested in milk and water.

Results: The calorimeter results indicate that phenytoin sodium interacts with $CaSO_4$ in aqueous media and precipitates. Surprisingly, phenytoin sodium also interacts with lactose through a Maillard reaction that can occur at body temperature. Commercial phenytoin sodium products interacted with milk and the products containing lactose in their formulation presented browning in water.

Conclusion: Interestingly, in Canada and the USA, the reference product contains lactose as an excipient in the formulation, whereas the Canadian generic formulations do not. A new incompatibility between phenytoin sodium and lactose has been discovered and an incompatibility with calcium was confirmed. This finding may have clinical implications, as both interactions could lead to an API-excipient interaction and food effects.