Check for updates

SPECIAL SUPPLEMENT TO THE
CANADIAN PHARMACISTS JOURNAL

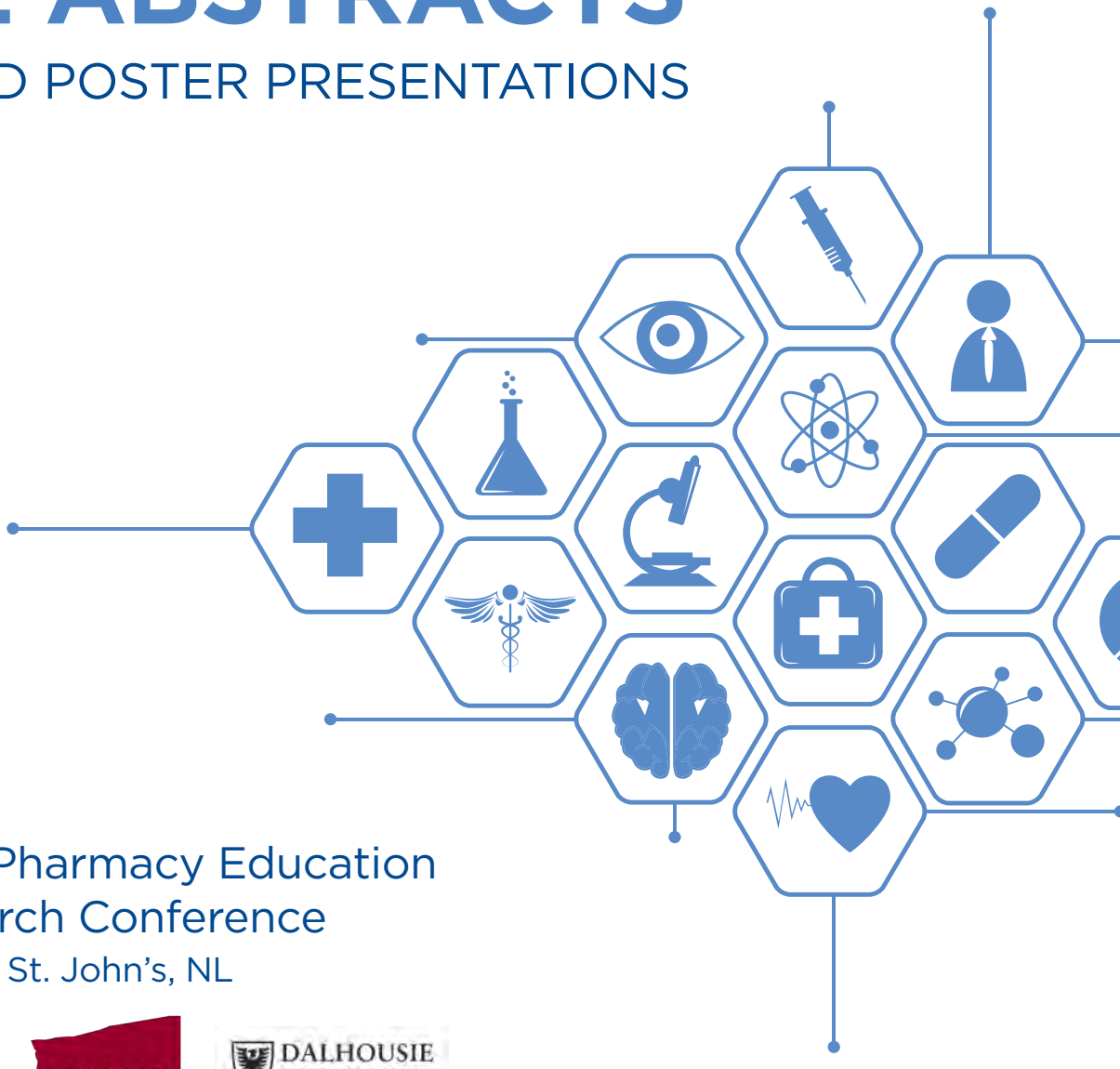
Association of Faculties of Pharmacy of Canada

Association des facultés de pharmacie du Canada

CPERC 2022

AFPC CPERC 2022 ABSTRACTS

ORAL AND POSTER PRESENTATIONS



Canadian Pharmacy Education and Research Conference

JUNE 14-17 | St. John's, NL

Co-hosted by: MEMORIAL UNIVERSITY, DALHOUSIE UNIVERSITY

The Association of Faculties of Pharmacy of Canada's (AFPC) 2022 annual Canadian Pharmacy Education and Research Conference (CPERC 2022) took place from June 14-17, 2022 in St. John's, Newfoundland.

The peer-reviewed abstracts accepted for presentation at CPERC 2022 as oral concurrent or poster sessions are published in this special supplement of the *Canadian Pharmacists Journal*. The primary author has provided permission for publication of their abstract.

The abstracts are grouped by oral or poster sessions, under the following categories: Pharmacy Education, Pharmacy Practice and Pharmaceutical Science.

AFPC wishes to acknowledge the support of *CPJ* and the Canadian Pharmacists Association in helping to promote and disseminate pharmacy education initiatives, educational scholarship, pharmaceutical science and pharmacy practice research.

CITATION in author's CV for presentation at AFPC CPERC 2022 conference:

POSTERS:
Authors' Last names, Initials. (2022, June 14-17). *Title of poster* [Conference poster presentation abstract]. Association of Faculties of Pharmacy of Canada Canadian Pharmacy Education and Research Conference, St. John's, Newfoundland. https://afpc.info/content/cperc-2022-overview

ORALS:
Authors' Last names, Initials. (2022, June 14-17). *Title of presentation* [Conference concurrent session abstract]. Association of Faculties of Pharmacy of Canada Canadian Pharmacy Education and Research Conference, St. John's, Newfoundland. https://afpc.info/content/cperc-2022-overview

CITATION in author's CV for abstract publication in the *Canadian Pharmacists Journal*:

Authors' Last names, Initials. Title of abstract. AFPC CPERC 2022 Abstracts – Oral and Poster Presentations. Can Pharm J (Ott) 2022; 155[Suppl]:page number.

TABLE OF CONTENTS

ORAL PRESENTATIONS

ORALS – PHARMACY EDUCATION

CS-1 Stepwise approach to a competency-based curriculum development of a new undergraduate Doctor of Pharmacy program (PharmD) at the University of Ottawa

M1-1 "I'm overwhelmed": Perceptions of student workload

M1-2 An approach to promote student wellbeing in the Faculty of Pharmaceutical Sciences at UBC

M1-3 Assessing the effectiveness of a novel wellness check-in activity among third-year pharmacy students

M2-1 Let It Go: A novel way to facilitate professional identity formation as students transition to practice

M3-2 Integration of online virtual simulation to support the acquisition of patient assessment skills during the COVID-19 pandemic

M4-2 A curricular framework for an interprofessional approach to deprescribing

M5-1 UPROOT: The building and delivery of a mandatory Indigenous health and cultural safety course in pharmacy

M5-2 Racism is deadlier than you think: An anti-racist approach to health education, care, and systems

M6-1 Two for one: Merging continuing professional development and faculty development for pharmacy preceptors)

M6-2 Does one size fit all? Preceptor experiences and perceptions of remote rotations

M7-1 Promoting 2SLGBTQQIA+ inclusion, diversity and equity in pharmacy education (PRIDE-RX)

M7-2 Beyond the stigmas: Preparing graduates to address heteronormativity and systemic discrimination towards 2SLGBTQ+ people in pharmacy settings

M8-2 Use of animations in teaching pharmacology

M9-1 The Opioid Use and Opioid Use Disorder ("OUOUD") eResource: Experiences to date

SIG-1 Predicting which applicants will most likely succeed in a PharmD program: Challenges and realistic expectations

SIG-2 Entrustable Professional Activities (EPA) implementation follow-up: educating the educators

SIG-3 Pharmacy practice instructors as experience curators: Teaching using simulated longitudinal patients

SIG-4 Supporting patient-centred practice: A workshop for pharmacy students to provide strategies for empowering patient self-efficacy and health behavior change.

SIG-5 A blueprint to design immersive simulation for novices that promote learning

ORALS – PHARMACY PRACTICE

M2-2 Pharmacy students perception of pharmacists' roles: Using an arts-informed method to explore professional identity formation

M3-1 Delays in routine immunizations due to the COVID-19 pandemic and perceptions of the pharmacy channel for administering routine vaccines: findings from a nationwide survey

M4-1 Implementation of deprescribing as a patient care service in community pharmacies as experienced and observed by pharmacy students

M8-1 Development of pharmacy student leadership placements for experiential learning

M9-2 Unraveling another pandemic: Evidence-based strategies to taper the opioid crisis

POSTER PRESENTATIONS

POSTERS – PHARMACY EDUCATION

PE-1 Pharmacists as teachers: development of an education class specific to year-1 pharmacy residents

PE-2 Interactive videos to promote antimicrobial stewardship

PE-3 Structuring assessments to support adaptive expertise

PE-4 Development and implementation of a master of pharmacy in advanced pharmacy practice (MPharm) Program

PE-5 Preparing students for inpatient practicum experiences: A virtual workshop

PE-6 Students' conception of local responses to global problems for a more peaceful and sustainable world

PE-7 Assessing pharmacy student performance on practicum using a novel rubric based on the Dreyfus Model of skill acquisition

PE-8 Difficult conversations: Using a virtual environment to create safer spaces

PE-9 Supporting connection and leadership development in alumni of a leadership course

PE-10 Maritime community pharmacists' perceptions of learner-preceptor models and enablers, barriers and motivators to precepting pharmacy students

PE-11 Pharmacy student and practice educator considerations on developing a virtually delivered direct patient care practicum at a university clinic

PE-12 Undergraduate pharmacy students' contributions as pharmacist extenders in direct patient care during inpatient hospital experiential rotations: A scoping review

PE-13 Regional practicum model for pharmacy experiential education

PE-14 Back in school: Reflections of pharmacy residents teaching in a longitudinal rotation

PE-15 Use of written reflections to understand pharmacy student professional identity formation during an early experiential education experience

PE-16 Implementing an academic electronic health record in a pharmacy informatics course

PE-17 A novel interprofessional collaboration practicum

PE-18 Development of a community-engaged learning pharmacy elective focused on population and public health concepts

PE-19 Evaluation of a milestone OSCE with joint in-person and remote delivery

PE-20 Pharmacist care planning services: A longitudinal case delivered to pharmacy students in a patient care skills course.

PE-21 Impact of the COVID-19 pandemic on canadian pharmacy student experiential education

PE-22 A novel online mapping resource for the recruitment of rural, remote and Indigenous students to the UBC Faculty of Pharmaceutical Sciences

PE-23 Development, implementation and evaluation of a remote medication adherence simulation activity within program year 1 of an entry-to-practice PharmD program

PE-24 Prevention strategies for psychological distress in students: experience of Laval University

PE-25 Transitioning students from class to practice - A review of institutional practice skills course in entry-to-practice PharmD program

PE-26 Primary care content in undergraduate pharmacy curricula - a systematic review

PE-27 A case study: Assessing changes in student attitudes toward duty-to-care

PE-28 Integrating research into the undergraduate Doctor of Pharmacy program

PE-29 Decolonization and Indigenization of UBC's faculty of pharmaceutical sciences: Literature review and environmental scan

PE-30 Population diversity in PharmD program: mapping of patient cases in skills laboratories

PE-31 A two-eyed seeing framework for building Indigenous health courses in pharmacy

PE-32 A cautionary tale of digital badges

PE-33 Lessons learned from developing an innovative and interprofessional opioid poisoning management and prevention program on a university campus

PE-34 Optimizing online interprofessional case-based learning for all health disciplines involved

PE-35 How pharmacists perceive their professional identity

PE-36 Webinar-based training for pharmacy practice educators

PE-37 A novel instructional media for accessible teaching and education (ANIMATE)

PE-38 Utilizing near-peer teaching in a pharmacy community service learning course

PE-39 Cultural and contextual dimensions of wellbeing

PE-40 Observing teaching and student engagement to improve curriculum alignment with competency-based education

PE-41 Framing curriculum on guiding principles

PE-42 University of waterloo school of pharmacy contributions to COVID-19 vaccination

PE-43 How well do we do well-being in pharmacy education across the U.S. and Canada?

PE-44 Impact of online seminar course on pharmacy student career decisions and understanding of the pharmacist role

PE-45 Developing a PharmD dashboard for evaluation and continuous improvement

PE-46 Not so special: The vagueness of "special populations"

PE-47 Deprescribing education in medicine, nursing and pharmacy: A scoping review

PE-48 Mapping of drug interaction instruction within a doctor of pharmacy curriculum

PE-49 Perceptions of online community-based student projects: building sustainability and reciprocity with Indigenous partners

PE-50 Student reported preparedness in leadership and professional service management post capstone course in social and administrative pharmacy

PE-51 Geriatric undergraduate pharmacy education: Mapping of skills laboratories

PE-52 Two-stage examinations: An approach to determining the ratio of individual and group results in the composite score

PE-53 Building diverse cases studies: A description of cases used in an advanced therapeutics course

PE-54 Developing a patient safety culture training curriculum for healthcare professionals

PE-55 A virtual interactive case system innovation to support pharmacist prescribing for minor ailments

PE-56 Patient or medication safety training: An opportunity for virtual interactive case system innovation

PE-57 How to promote learner engage through observation in immersive simulation?

PE-58 "I'm overwhelmed": Perceptions of student workload

POSTERS – PHARMACY PRACTICE

PP-1 Investigating community pharmacy-based naloxone programs and program interventions: a scoping review

PP-2 Implementation of a pharmacy-based intervention for patients with uncontrolled asthma

PP-4 A cost-utility analysis of naloxone dispensing from community pharmacies in Canada

PP-5 USask Chronic Pain Clinic Phase I Evaluation

PP-6 Supporting Self-governance of medication practices in a remote Indigenous community

PP-7 Parent and healthcare providers preference factors, decision-making and knowledge on medication use during lactation: a Canada-wide survey study

PP-8 Pharmacogenomic considerations in proposed COVID-19 treatment and management: A systematic review

PP-9 Peripartum mental health and the role of the pharmacist: A scoping review

PP-10 Pharmacy practice research for urinary incontinence in older adults: insights into pharmacist participation

PP-11 An environmental scan of patient safety reporting and learning systems in community healthcare for multi-disciplinary teams

PP-12 Development and evaluation of an online pocket guide to quality improvement

PP-13 The SMART pharmacist podcast: Medication safety learning anywhere anytime

PP-14 Regulatory body disciplinary action: What do pharmacists, dentists and nurse practitioners get in trouble for?

PP-15 Adverse fetal outcomes associated with gabapentin use in pregnancy: A cohort study and a scoping review with meta-analysis

PP-16 Pharmacists' role in mental health care: exploring the current state and factors impacting service provision

POSTERS – PHARMACEUTICAL SCIENCE

PS-1 Alterations of neurovascular insulin receptors in Alzheimer's disease.

PS-2 MPE-298, a cyclic azapeptide ligand of CD36/SR-B2, slows progression of atherosclerosis in hypercholesterolemic apolipoprotein E-deficient mice

PS-3 Characterization of the uric acid transporter URAT1 (SLC22A12) in platelets

PS-4 Theranostic nanomedicine for imaging and treatment of multiple joints in rheumatoid arthritis

PS-5 An infrared thermography approach to monitor disease activity in collagen-induced arthritis mouse model

ORAL PRESENTATIONS

CS-1

Stepwise approach to a competency-based curriculum development of a new undergraduate Doctor of Pharmacy program (PharmD) at the University of Ottawa

Christine Landry[1], Pierre Moreau[2], Pierre Giguère[1], John Leddy[3], Patrick Leclair[3], Manon Denis-LeBlanc[3]

[1]École de sciences pharmaceutiques, Université d'Ottawa, [2]Consultant, Université d'Ottawa, [3]Faculté de Médecine, Université d'Ottawa

Background: As of 2022, there are ten (10) pharmacy programs across Canada. The report from Le Consortium National de Formation en Santé (CNFS, 2022) illustrates that pharmacists are the professional provides the least health services in French in minority setting, outside of the province of Québec. As the University of Ottawa continues its endeavor to develop and implement the curriculum of a pharmacy program offered in French in Ottawa in September 2023, a dedicated team has followed a systematic approach to establish the components of the program.

Goals: The main objective of the presentation is to demonstrate the steps leading to a new curriculum, integrating evidence-based education guiding principles in the process.

Description: Using a concept map, the creation process will be presented, starting from gathering information through needs assessments, identifying the vision and guiding principles, integrating competencies requirement within selected entrustable professional activities (EPA), identification of essential knowledge and skills and mapping of most prevalent medical conditions to create a novel curriculum with built-in spiral integration in the course sequence.

Relevance to pharmacy education: This presentation is highly relevant to pharmacy education as the opportunity to create a competency-based curriculum of a new pharmacy program in Canada is a unique moment. We hope our insights and learning points from our stepwise approach may encourage others to consider applying these strategies for curriculum development or revision.

ORAL PRESENTATIONS

M1-1

"I'm overwhelmed": Perceptions of student workload

Marion Pearson[1], *Heather Brodoway*[1]

[1]*Faculty of Pharmaceutical Sciences, University of British Columbia*

Background: Academic workload is a common stressor for students and contributes to surface approaches to learning (Ak, 2008; Kausar, 2010). Student perceptions of workload are only weakly correlated with hours of study (Kember, 2004). Learning environments, teaching methods, assessment strategies, curricular structure, institutional resources and personal factors all play a significant role in shaping students' perceptions of workload (Kember, 2004).

Goals: 1. To report outcomes of a qualitative study investigating: i) What factors contribute to perceptions of student workload in the UBC PharmD Program? ii) What are the similarities and differences between student and faculty perceptions of student workload? iii) Are there any modifiable factors relating to student workload in the E2P PharmD Program? 2. To share the experience of using a visual data collection method.

Description: Data collection was guided by an academic workload framework based on a literature review. Student (n=10) and faculty (n=9) volunteers participated in semi-structured interviews that included a "draw and write" activity. Interview transcripts were analyzed inductively and deductively, whereas visual data from the drawing activity were analyzed inductively with reference to the writing component to avoid misinterpretation. Students identified volume of curricular content, participation in extracurricular activities and commitments to friends as the main contributors to their workload. Faculty focused on pedagogical aspects of the curriculum, such as teaching style and assessment strategies, as contributors to student workload. Overall, students had a more holistic but short-term view of academic workload, whereas faculty had a curriculum-centric, long-term view. Participants' suggestions for strategies to reduce workload may contribute to future curricular reforms.

Relevance to pharmacy education: Pharmacy educators have an interest in supporting student success and wellbeing; thus, we need to understand the stressors that affect students. This study provides some insight into the factors contributing to students' academic workload, which extend well beyond the scheduled hours in the curriculum. This study also highlights some differences between students' and faculty members' perceptions of academic workload and the value of visual data in qualitative research.

ORAL PRESENTATIONS

M1-2

An approach to promote student wellbeing in the faculty of pharmaceutical sciences at UBC

Ingrid Price[1], *Lynda Eccott*[1]

[1]*Faculty of Pharmaceutical Sciences, University of British Columbia*

Background: There is a growing need to support student mental health and wellbeing across health professions education in a proactive and comprehensive manner. This need has become even more paramount given the added stress of the COVID-19 pandemic. Health professions education programs are demanding and research has shown that this can result in students prioritizing school over their mental health. Further, evidence suggests that the value of promoting overall wellness and resiliency throughout student's education provides benefits that are sustained once they enter into pharmacy practice.

Goals: Through presenting the approach that UBC has taken to create a Student Wellness Plan that is collaborative and inclusive as a means to support change in the Faculty related to student wellness, participants will consider their own context and ways this approach may be useful to them.

Description: The mission of Faculty of Pharmaceutical Sciences at UBC is to collaboratively build and implement a Student Wellness Plan that supports professional development around wellbeing, while centering on a culture of self-care, resiliency and empowerment across all of our academic programs. Beyond the details of the plan itself, the process through which the plan is developed, implemented and evaluated is also important to ensure its value, efficacy and support across the Faculty.

Relevance to pharmacy education: Wellbeing and resiliency are important factors that affect student academic success in health professions education. Further, health care professionals who are competent in these areas are less likely to experience burnout which can benefit their professional practice.

ORAL PRESENTATIONS

M1-3

Assessing the effectiveness of a novel wellness check-in activity among third-year pharmacy students

Cynthia Richard[1], *Heidi Fernandes*[1], *Sherilyn Houle*[1], *Kaitlin Bynkoski*[1], *Becky Ewan*[1]

[1]*School of Pharmacy, University of Waterloo*

Goals: 1) Introduce "Check-In", a novel wellness activity for pharmacy students to develop knowledge and skills to identify and address healthcare provider burnout. 2) Share findings from our longitudinal qualitative study that explored students' lasting takeaways from "Check-In".

Description: Our study evaluated the effectiveness of a newly developed wellness check-in activity with third-year students at the School of Pharmacy. Recognizing the program's demanding curriculum and the impact that our own wellness has on our ability to learn and provide care to patients as a pharmacist, an activity to educate students on recognizing and addressing burnout was initiated in Winter 2020. In this activity, students learn about wellness and burnout and meet individually with a pharmacy faculty member to discuss wellness considerations across various aspects of one's life. The study evaluated – using telephone interviews with participants – whether students take away key learning objectives and make significant changes in their self-care practices following this activity. Although not an original intention, as "Check-In" and its funding application was completed prior to March 2020, this study also gathers insights on the pharmacy student experience with the pandemic. One-on-one interviews were conducted at two pivotal timepoints in a pharmacy students learning journey and underwent thematic analysis. The final results will be available at the time of presentation. Preliminary findings demonstrate student appreciation for this type of activity, as well as validation of their mental health by faculty members and highlight the struggles impacting pharmacy learners during the pandemic. This project is supported by the Learning Innovation and Teaching Enhancement Seed Grant from the University of Waterloo Centre for Teaching Excellence.

Relevance to pharmacy education: Addressing student wellness and burnout aligns with both the current context of pharmacy practice as well as recommendations from a University of Waterloo Advisory Committee on Student Mental Health to incorporate concepts of wellness into course materials. This activity represents the first learning activity implemented at the School of Pharmacy targeting burnout with an embedded research component to evaluate its impact and effectiveness.

ORAL PRESENTATIONS

M2-1

Let It Go: A novel way to facilitate professional identity formation as students transition to practice

Theresa Charrois[1], *Jill Hall*[1]

[1]*Faculty of Pharmacy and Pharmaceutical Sciences, University of Alberta*

Goals: The transition from school to work, from student to practitioner, can be challenging. It is recognized that there exists a cognitive dissonance between what pharmacy students are taught in school and what they observe in practice and that as educators we do not always best prepare them to take responsibility for their practice and ongoing professional development. The intent of this session is to share one way we have tried to help resolve this dissonance for Year 4 students, with the aim of improving their confidence and skills to become an engaged professional.

Description : While on their APPE rotations, students are enrolled in a 1-credit "PharmD Seminar" course in each term. With the aim to help develop a strong professional identity and to resolve the disconnect between school and practice, we set up a learner-centred, group-based course. Students selected topics to explore as well as the way in which they would demonstrate their learning. A list of resources (e.g. readings, videos, podcasts, books) across several broad professional development themes/topics (e.g. professional identity formation; equity, diversity and inclusivity; collaboration; lifelong learning) were provided, along with a list of potential artifacts of submission (e.g. discussion minutes, reflection, book club synopsis), to support their endeavors. Each group was responsible to 'learn' about 2 topics per rotation in the fall term and 2 topics total in the winter term.

Relevance to pharmacy education: Research has shown that pharmacy students experience difficulty in transitioning from school into practice. The outcomes for this course were to help evolve their professional identity, through demonstration of the skills required for practice along with self-directedness. This course represents an attempt to teach from a postmodern perspective – in terms of relinquishing much of the power and control of the instructors, in addition to recognizing the diversity of the student body. Coordinating a course, where the decisions about what is being learned and how it is being learned, is uncommon in a professional program. This session will explore the opportunities for pharmacy educators to consider this type of teaching in their own programs.

ORAL PRESENTATIONS

M2-2

Pharmacy students perception of pharmacists' roles: Using an arts-informed method to explore professional identity formation

Terri Schindel[1], *Meghan Onusko*[1], *Ravina Sanghera*[1]

[1]*Faculty of Pharmacy and Pharmaceutical Sciences, University of Alberta*

Goals: Professional identity formation is a fluid process that develops from personal experience, views and knowledge of an occupation. The goals of this oral presentation are to (1) present research exploring first year pharmacy students' perception of pharmacists' roles and (2) explore how arts-informed research supports professional identity formation in pharmacy programs.

Description: The objective of this study was to explore how students entering the Doctor of Pharmacy program conceptualize the role of a modern-day pharmacist. First year pharmacy students (n=135) were invited to participate in the study in Fall 2021. The study was approved by the University of Alberta Research Ethics Board. Data were collected using an arts-informed method derived from an adaptation of the Draw and Write Technique called the iSquare protocol. Students were invited to answer the question, "What is the pharmacist's role?", by drawing on one side of a square piece of art paper and writing a description of the drawing on the reverse side. This novel approach was used to gain unprompted insight into student's concept of a pharmacist's role. Data from 100 squares were collected and analyzed using a combination of compositional analysis and thematic analysis. Students perceived pharmacists as having a multifaceted role made up of social, professional and material aspects. References to pharmacists' roles and services during the COVID-19COVID-19 pandemic were also featured. Using and arts-informed approach facilitated exploration into how pharmacy students begin to contemplate two questions related to professional identity: "who am I?" and "what do I do?".

Relevance to pharmacy education: Results from the study captured aspects of the pharmacists' scope of practice in Alberta (e.g., prescribing, administering drugs by injection) as well as traditional elements of pharmacy practice (e.g., dispensing, counselling). This study contributes new information about how pharmacists' roles are depicted by pharmacy students entering the Doctor of Pharmacy suggesting a nuanced shift in perception of pharmacists' roles aligning with the scope of practice in Alberta.

ORAL PRESENTATIONS

M3-1

Delays in routine immunizations due to the COVID-19 pandemic and perceptions of the pharmacy channel for administering routine vaccines: findings from a nationwide survey

Shelita Dattani[1], *Jia Hu*[2], *Heather Mohr*[1]

[1]*Neighbourhood Pharmacy Association of Canada,* [2]*Department of Community Health Sciences, Cumming School of Medicine, University of Calgary*

Background: Routine immunizations play a critical role in limiting vaccine-preventable illnesses (VPIs) such as shingles, HPV and pneumococcal disease. Despite their importance, uptake remains well short of NACI-recommended targets and some speculate that Canadians have missed or delayed routine immunizations during the COVID-19 pandemic. In Canada, routine immunizations are primarily administered in primary care or public health settings. Although pharmacists have the scope to administer routine vaccinations, challenges accessing publicly funded vaccines limit the ability of Canadian pharmacists to administer routine immunizations. Primary care provider access has also been limited during the pandemic, suggesting additional challenges to access routine immunizations. Quantifying routine immunization rates during the pandemic is critical to understanding the scope and direction of future immunization strategies in Canada.

Description: We administered an online survey to a nationally representative, non-probabalistic sample of Canadians (n=9059) to collect self-reported data on routine immunization rates during the pandemic. Using the same survey, we also asked questions gauging public perception towards pharmacy as a channel to administer routine vaccines. Approximately one in four Canadians report missing or delaying a routine immunization since March 2020. More than 70% of respondents indicate lack of access to healthcare providers or uncertainty about the availability of vaccines as reasons for missed or delayed immunization. Findings also demonstrate widespread acceptance of pharmacies as vaccination sites and high levels of trust in pharmacist recommendations about receiving vaccines.

Conclusion: A significant number of routine immunizations have been missed or delayed due to the ongoing COVID-19 pandemic, potentially increasing the risk VPI outbreaks. Findings also indicate public support for using pharmacies as a channel to increase access to immunizations and system-wide vaccination capacity. Policymakers and public health officials should consider these results when developing strategies for improving inadequate routine immunization rates to prevent VPI outbreaks following the COVID-19 pandemic.

ORAL PRESENTATIONS

M3-2

Integration of online virtual simulation to support the acquisition of patient assessment skills during the COVID-19 pandemic

Natalie Crown[1], *Karen Cameron*[1]

[1]*Leslie Dan Faculty of Pharmacy, University of Toronto*

Goals: The purpose of this session is to describe the integration of an online virtual simulation software system, ShadowHealth, into physical assessment courses in the Doctor of Pharmacy and PharmD for Pharmacists programs. We describe faculty and student perspectives on the use of virtual simulation for both undergraduate and post-graduate pharmacy learners and consider recommendations for future use of virtual simulation in pharmacy education.

Description: During the transition to remote learning, we integrated ShadowHealth into our physical assessment course in the PharmD Program as a replacement for simulation lab hours. Since then, we have leveraged the program in the online delivery of two physical assessment courses in the PharmD and PharmD for Pharmacists Programs.

Within the program, students complete virtual cases. They review an electronic chart and gather a patient's history by interviewing a virtual patient (avatar) in a primary care clinic. The avatar responds verbally in real time to simulate a patient interview. Students are guided through a physical assessment; with the opportunity to see and hear abnormal and normal physical findings and interpret them within the context of the case. They submit a note to document their findings and are provided feedback based on the transcript of their interview and their collection of subjective and objective patient data.

From a faculty perspective, use of ShadowHealth required extensive adaptations to meet the needs of Canadian pharmacy students, including the development of student instructions, post module application questions and assignments and synchronous de-briefs to apply their work in the system to the pharmaceutical care process. In post course surveys and course evaluations, students highly rated the program's technical functionality, effectiveness as a learning tool, found it complimentary to course material and indicated that it helped develop their patient assessment and interviewing skills. On the other hand, students felt that they lacked confidence in skills that require hands-on physical assessment.

Relevance to pharmacy education: Virtual simulation is an emerging modality in health professions education and its availability has facilitated course resiliency during a pandemic. Instructional design approaches to ensure effective integration and balancing online with hands-on learning are required.

ORAL PRESENTATIONS

M4-1

Implementation of deprescribing as a patient care service in community pharmacies as experienced and observed by pharmacy students

Kelda Newport[1], *Debbie Kelly*[1], *Justin Turner*[2]

[1]*School of Pharmacy, Memorial University,* [2]*Faculté de pharmacie, Université de Montréal*

Goals: The appropriate use of medications has become a federal and provincial priority and community pharmacists play an integral role in the implementation of a coordinated approach to reducing inappropriate medications. Deprescribing unnecessary or potentially harmful medications is one intervention to improve medication appropriateness. Understanding the implementation of deprescribing activities in pharmacy practice is important so that appropriate support can be offered to pharmacists in order to increase uptake and impact of these services to improve patient care. This session will present focus group findings on the barriers and facilitators to implementing a deprescribing service in a community pharmacy as experienced and observed by pharmacy students.

Description: In 2019, SaferMedsNL was launched as a provincial public awareness campaign to reduce inappropriate or unnecessary use of proton pump inhibitors (PPIs) and included supporting pharmacists and prescribers in deprescribing PPIs. As part of the Structured Practice Experience III course, pharmacy students from Memorial University spent 4 weeks in a community pharmacy in which one of their course activities was to participate in the deprescribing of PPIs. Third-year pharmacy students were invited to participate in a focus group to explore their observations regarding the uptake of deprescribing activities and their experience in developing strategies to support implementing deprescribing into the workflow in community pharmacies.

Relevance to pharmacy research and education: Much of the research to date on deprescribing in community pharmacies has been from randomised controlled clinical trials and despite the success of these trials, there is little data to guide the implementation of evidence-based practices into everyday workflow. Despite legislation enabling expanded scope of pharmacist practice in many provinces, the actual implementation and uptake of many patient care services in community pharmacies has been low. Pharmacy students described some of the innovative ideas and processes used to support the implementation of deprescribing programs in practice, which overcame many of the barriers known to exist. Sharing these findings may lead to identifying further areas for refinement in the operational and implementation process.

ORAL PRESENTATIONS

M4-2

A curricular framework for an interprofessional approach to deprescribing

Cheryl Sadowski[1], Lalitha Raman-Wilms[2], Barbara Farrell[3], Laurie Mallery[5], Camille Gagnon[4], Justin Turner[4]

[1]Faculty of Pharmacy and Pharmaceutical Sciences, University of Alberta, [2]College of Pharmacy, University of Manitoba, [3]Bruyère Research Institute, [4]Faculté de pharmacie, Université de Montréal, [5]Division of Geriatric Medicine, Dalhousie University

Background: Deprescribing is an important approach for managing polypharmacy and reducing harm from potentially inappropriate medications. Healthcare professionals identify barriers to deprescribing, including lack of knowledge and skill. This is not surprising as pre-licensure education does not consistently incorporate components of deprescribing into curricula. As such, there is a clear need to consider how to promote deprescribing competencies, teach related knowledge and skills and assess learning outcomes. The Canadian Deprescribing Network (CaDeN) Health Care Professional Committee undertook a consensus process to develop a proposed competency framework that describes essential knowledge, teaching strategies and assessment protocols to promote deprescribing skills and advocate for consistent education about deprescribing principles and practices. The competency framework considers interprofessional learning and how to involve patients and care partners in deprescribing decisions. The framework includes an action plan to implement these concepts and strategies.

Goals: 1) Discuss the deprescribing competencies listed in the framework. 2) Identify areas across the pharmacy curriculum where deprescribing should be integrated. 3) Review strategies for integrating deprescribing with interprofessional learning opportunities. 4) Describe assessment strategies that can be used for pharmacy education.

Description: Drs. Cheryl Sadowski and Lalitha Raman-Wilms, both authors of the framework, will review the purpose and process of development for the framework. The 7 competencies will be presented along with the proposed learning outcomes for early, mid and advanced pharmacy learners. Examples of teaching and learning activities will be discussed and potential assessment strategies reviewed.

ORAL PRESENTATIONS

M5-1

UPROOT: The building and delivery of a mandatory Indigenous health and cultural safety course in pharmacy

Larry Leung[1], *Jason Min*[1]

[1]*Faculty of Pharmaceutical Sciences, University of British Columbia*

Goals: 1) describe the Indigenous community and student-engaged process for course design. 2) discuss course pillars, assessment strategies and activities to facilitate student learning of Indigenous cultural safety. 3) share student and Indigenous partner perceptions of course design and delivery, including areas of strength and areas for improvement. We acknowledge the critical role of the Indigenous Advisory Committee and Indigenous Student Advisory Committee that provided oversight and authority on all aspects of the course to ensure the prioritization and respect of Indigenous knowledge, values and practices.

Description: In response to the Truth and Reconciliation Commission Calls to Action, the United Nations Declaration on the Rights of Indigenous Peoples and the University of British Columbia's Strategic Plan, UPROOT sought to strengthen, scaffold and expand Indigenous curricula in the pharmacy program. One main deliverable was the development of a mandatory course on Indigenous health and cultural safety in the Entry-to-Practice PharmD Program. The meaningful participation, authority and oversight of the curriculum by an Indigenous Advisory Committee and Indigenous Student Advisory Committee ensured that the approach, design and delivery respected Indigenous knowledge, values and worldviews. The presenters will share their co-developed ethical engagement framework for course design and discuss details on the construction and sustainability of the Advisory Committees. Key components of the course will be detailed including course pillars and topics, assessment strategies and in-class activities. Finally, an open discussion on both student and community partner perceptions on both the process and course itself will be shared.

Relevance to pharmacy education: As pharmacy schools across Canada continue Indigenization efforts, ensuring that Indigenous-specific curricula is Indigenous-engaged and led is critical. To achieve this, the process for design, delivery and evaluation of curricula must be conducted in a manner that prioritizes relationships and an expectation of reciprocity with Indigenous partners. Sharing openly about our collective strengths and areas for improvement through this process is an important step to fostering safe dialogue amongst colleagues and partners.

ORAL PRESENTATIONS
M5-2

Racism is deadlier than you think: An anti-racist approach to health education, care and systems

Timothy Lim[1], Leonie Harper[1], Sandra Jarvis-Selinger[1], Donna Drynan[2]

[1]Faculty of Pharmaceutical Sciences, University of British Columbia, [2]UBC Faculty of Medicine, Occupation Therapy

Goal: The goal of this presentation is to summarize the experience of conducting a virtual symposium addressing racism in the healthcare context. We will share information about the format and lessons learned through our experiences with the symposium and preliminary data from our evaluation.

Our hope is to inspire other schools to mobilize change in their respective environments in the hope of building a more inclusive, less discriminatory and anti-racist health system for the future.

Description: Racism – both interpersonal and structural – continues to pervade western healthcare and health education. UBC's Faculty of Pharmaceutical Sciences has prioritized anti-racism work as a key strategy to improving future health care systems. Through a multi-stage approach, our team has developed a pilot project to introduce anti-racism as a necessary tool in addressing systemic racism and oppression.

Funded by the University of British Columbia Anti-Racism Fund, healthcare professionals, students and educators will be invited on February 9, 2022 to explore how they can help to dismantle racism and transform our health systems. RACISM IS DEADLIER THAN YOU THINK: AN ANTI-RACIST APPROACH IN HEALTH EDUCATION, CARE and SYSTEMS, a virtual symposium consisting of a lecture and panel discussion with experts from community, healthcare and academia will educate attendees to learn more about racism in the health care system and consider what sustainable anti-racist work looks like.

A follow-up workshop planned for June 7, 2022 will be designed to support attendees to explore deeper into the issues, identify strategies and develop an anti-racist framework that addresses curricular gaps in the classroom and clinical setting. The oral presentation will discuss mostly the symposium.

Relevance to pharmacy education: The Canadian healthcare system is not immune to racism. Anti-racism education and implementation for both students and educators are vital towards dismantling systemic racism. We must collectively work to address racism in the healthcare system and while this initiative is trans-disciplinary, educating current and future pharmacy students are part of the solution.

ORAL PRESENTATIONS

M6-1

Two for one: Merging continuing professional development and faculty development for pharmacy preceptors

Debbie Kwan[1], Naomi Steenhof[1], David Dubins[1], Alice Guo[1], Elnaz Haddadi[1], Karen Leslie[2], Gajan Sivakumaran[3]

[1]Leslie Dan Faculty of Pharmacy, University of Toronto, [2]Faculty of Medicine, University of Toronto, [3]Queen's University

Background: Continuing professional development (CPD) and Faculty development (FD) are seldom combined, though there is evidence that integrating clinical content and teaching skills training can enhance knowledge acquisition. Their combination can also create efficiencies in learning by helping preceptors stay up-to-date clinically while practicing teaching skills. With limited time for continuing education, many preceptors have focused on staying up to date with "what" to teach and spent less time learning "how" to teach. This study explored preceptor perceptions and measured the effectiveness of a synchronous, on-line workshop that blended clinical content with the application of that knowledge utilizing a teaching technique.

Description: Thirty-five pharmacy preceptors participated in a 2-hr workshop that integrated clinical content on depression with the One-minute preceptor (OMP) teaching skill and was grounded in social constructivism.

Qualitative and quantitative data were collected using surveys (immediately and at 3, 6 and 9-months post-workshop) and semi-structured interviews. Participant and process outcomes were explored through descriptive and thematic analysis of the data using a modified Kirkpatricks framework.

There was a high degree of satisfaction and perceived efficiency of combining CPD and FD into one session. Participants valued the opportunity to practice the OMP skill using highly scripted role-plays based on clinical cases relating to the material on depression.

Three major themes were identified from the qualitative data: 1) desire for lifelong learning; 2) value of learner-centred pedagogy; 3) importance of achieving the right mix. We will present these themes and illustrate them in the context of enablers and barriers to this integrated model.

Relevance to pharmacy education: Integrating CPD and FD in a synchronous, on-line environment was feasible and well-received. Their combination represents an effective strategy to build clinical and educational expertise of preceptors that, in turn, has the potential to impact the quality of experiential learning for pharmacy students. This novel method of fostering the professional growth of preceptors can be a model for other health professions.

ORAL PRESENTATIONS

M6-2

Does one size fit all? Preceptor experiences and perceptions of remote rotations

Debbie Kwan[1], Sandra Bjelajac Mejia[1], Bonnie Lam[2], Gajan Sivakumar[3]

[1]Leslie Dan Faculty of Pharmacy, University of Toronto, [2]Niagara Health, [3]Queen's University

Background: Due to the global pandemic, our non-direct patient care experiential rotations transitioned from traditional in-person to remote rotations. We sought to understand preceptors' experiences and perceptions of this novel mode of precepting.

Description: Preceptors who led at least one rotation remotely were invited to complete an online questionnaire. The questionnaire was informed by a literature review on remote supervision of healthcare students. The questionnaire was divided into five domains: 1) preceptor/student relationship, 2) preceptor support and continuing professional development opportunities, 3) technology, 4) preceptor perceptions and 5) workload and the working environment. The survey consisted of a mix of Likert-scale, multiple choice and open-ended questions. Descriptive statistics were used to characterize the quantitative data. Written responses were coded and analyzed for emerging themes.

Forty-seven of 157 preceptors (30%) responded to the questionnaire. Project and research rotations were the most prevalent types of remote rotations. Preceptors took one (49%), two (19%) or multiple (32%) students concurrently. The majority of preceptors were willing to precept remotely again (85%). Student responsiveness (87%) and enjoyment of teaching (83%) were the top sources of motivation for preceptors during the rotation. Three major themes emerged from the qualitative data: 1) Traditional approaches to rapport building and in-the-moment teaching opportunities were limited; 2) Preparation and ongoing support is necessary to ensure preceptors and student readiness and to manage expectations; and, 3) The recipe for a successful rotation includes careful consideration of appropriate pedagogy, technology and a dose of motivation.

Relevance to pharmacy education: Although this was a novel mode of teaching, preceptors reflected a positive experience in leading remote rotations. Traditional precepting approaches employed during in-person rotations need to be adapted and individualized for the context of remote rotations, highlighting that there is no 'one-size-fits-all' approach. Transitioning to a remote environment generates new opportunities and drives innovation.

ORAL PRESENTATIONS

M7-1

Promoting 2SLGBTQQIA+ inclusion, diversity and equity in pharmacy education (PRIDE-RX)

Tristan Lai[1], *Alex Tang*[1]

[1]*Faculty of Pharmaceutical Sciences, University of British Columbia*

Goals: This presentation will 1) describe the proposed curriculum and its underlying frameworks, 2) describe the project's strategic imperatives and 3) outline next steps.

Description: This session will describe the UBC Faculty of Pharmaceutical Sciences' approach to integrate 2SLGBTQQIA+ content in pharmacy education by leading changes to the Entry-to-Practice (E2P) Doctor of Pharmacy (PharmD) curriculum.

Relevance to pharmacy education: As society broadens its understanding of sexual orientation, gender identity and expression (SOGIE), its healthcare institutions must also reflect this growth. The 2019 House of Commons Report on "The Health of LGBTQIA+ Communities in Canada" recommends that sexual and gender diversity be included in health professional training. Today's healthcare professionals must develop knowledge of gender diversity and its intersection with sexual orientation and associated experiences, histories and language to provide best patient care. To build queer and trans competencies amongst pharmacy students, this three-year initiative will integrate SOGIE into the E2P PharmD curriculum throughout the four professional years. The intended goal of this project is to promote critical allyship and dismantle the systemic cisheteronormativity (rooted in colonialism) embedded in pharmacy education and the profession. Upon successful completion of this curriculum, students will demonstrate a commitment to attitudinal and practice changes to provide safe, quality and equitable healthcare to 2SLGBTQQIA+ clients.

ORAL PRESENTATIONS

M7-2

Beyond the stigmas: Preparing graduates to address heteronormativity and systemic discrimination towards 2SLGBTQ+ people in pharmacy settings

Kyle Wilby[1]

[1]*College of Pharmacy, Dalhousie University*

Goals: This session aims to provide an update on 2SLGBTQ+ health within pharmacy curricula, guidance for educators seeking to incorporate 2SLGBTQ+ health concepts into learning events and a call to action for programs to safely address systemic discrimination that exists towards 2SLGBTQ+ people within pharmacy practice settings. Sexually and gender diverse individuals experience healthcare differently than others, which is reflected in the continued high rates of health disparities observed for both physical and mental health conditions. The presence of discrimination and environmental or interpersonal microaggressions within healthcare settings, including pharmacies, promotes healthcare avoidance behaviours that contribute to the disparities observed. Graduates from pharmacy programs must therefore be equipped to identify, resolve and prevent systemic discrimination that exists within their workplaces. The objectives of this session are to introduce the theoretical underpinnings of systemic discrimination towards 2SLGBTQ+ people and to provide participants with evidence and practical recommendations for safely addressing systemic discrimination within pharmacy curricula and individual learning events.

Description: This session is based on curricular programming developed, implemented and evaluated for 2SLGBTQ+ health in New Zealand. Learning events and curricular content were designed based on the minority stress model, with an emphasis on system factors that contribute to both distal and proximal minority stress processes experienced by 2SLGBTQ+ people in healthcare settings. The learning events developed encompassed a wide range of instructional approaches, including interactive lectures, case-based discussions, exposure to the lived experiences of community members and social media influencers, communication exercises and self-reflection. Concepts were formatively assessed by having students identify pharmacy practice initiatives that can reduce systemic discrimination against 2SLGBTQ+ people across a variety of workplace settings.

Relevance to pharmacy education: This session will provide participants with a theoretical understanding of systemic discrimination affecting 2SLGBTQ+ people and practical recommendations for safely addressing this problem through pharmacy education programs. Learning points will be relevant for instructors, as well as administrators and managers working in both education and practice settings. Although focused on entry-to-practice degree training, concepts discussed will be relevant for continuing professional development initiatives.

ORAL PRESENTATIONS

M8-1

Development of pharmacy student leadership placements for experiential learning

Michelle MacDonald[1], *Maria Anwar*[2]

[1]*Faculty of Pharmacy and Pharmaceutical Sciences, University of Alberta,* [2]*Alberta Health Services*

Background: "Leadership is a professional obligation of all pharmacists and not the exclusive responsibility of pharmacists who hold formal leadership roles or titles." (ASHP Statement on Leadership as a Professional Obligation, 2011).

Leadership development experiences are offered as electives to University of Alberta (U of A) Pharmacy Students. As preceptors, we were challenged with how to co-create high-value leadership development experiences with students that enhance their leadership skills, knowledge and competencies, in alignment with their individual learning goals. Leadership placements provide dedicated space for students to learn, develop and practice their leadership skills and knowledge, form relationships with other healthcare leaders as well as to participate in projects that will help them grow professionally and personally. Increasing the opportunities for these leadership placement experiences in our organization and awareness with students was a focus to build capacity.

Description: A leadership development framework was created, applied and shared with other preceptors and students that contains resources, reflective questions and an approach to discovery, engagement and integration of leadership concepts. We consulted the literature, applied the LEADS framework, connected with current healthcare leaders and engaged with members of the U of A Experiential Education team. We also partnered with leadership placement students and alumni to adapt the approach based on their input, collect testimonials, endorsed a student editorial about her journey and spoke with the third-year pharmacy students prior to the selection of their electives to promote leadership placements. Lastly, we formed a community of practice to help coach new and existing leadership preceptors to share resources, experiences and offer support.

Results: * Increased capacity in leadership placements in the organizational setting by 63% (19 in 2020/21 to 31 in 2021/22) and by 39% overall (31 in 2020/21 to 43 in 2021/22)* Five leadership placement preceptors honoured with recognition awards for offering innovative practice opportunities to pharmacy students in 2020/21

Call to Action: There are opportunities to collaborate with students, preceptors and the Faculties of Pharmacy to expand high-value leadership placements offered in various practice settings in Alberta and across Canada.

ORAL PRESENTATIONS

M8-2

Use of animations in teaching pharmacology

Sylvie Marleau[1], *David N. Huynh*[1]

[1]*Faculté de pharmacie, Université de Montréal*

Background: The pharmacy profession has been rapidly evolving in recent years. In parallel, there is an increasing number of therapeutic avenues, among which targeted therapy is gaining popularity. Along that line, biologics and biosimilars are among the fastest-growing class of drugs. These powerful drugs, used to treat different medical conditions including, for example, psoriasis, rheumatoid arthritis, inflammatory bowel disease and some cancers, rely upon immune modulation to exert their effect. Hence, understanding of their mechanism of action often requires basic immunology, cellular and molecular knowledge.

Descripton: To help students with this subject, we investigated a learning strategy to be used as a complement to pharmacology lectures on novel biologics. On the one hand, few animations can be found on the web. Furthermore, even fewer, or none, are in French. In addition, some animations available on the web one year may not be available after some time.

Relevance to pharmacy education: With these limitations in mind, we proposed to the « Cercle du Doyen », a potential source of funding for educational purposes in our Faculty, to design animations aiming to explain, in the simplest way possible, the mechanism of action of current biologics used in autoimmune diseases such as rheumatoid arthritis and psoriasis, as well as in asthma and chronic obstructive pulmonary disease. This presentation will explain the research, design and recent use of the animations to complement lectures in pharmacology at the Faculty of Pharmacy, Université de Montréal.

ORAL PRESENTATIONS

M9-1

The opioid use and opioid use disorder ("OUOUD") eResource: Experiences to date

Charlotte Boone[1], Madelynn Hannah[1], Beth Sproule[1], Elnaz Haddadi[1], Maria Zhang[1], Injeong Yang[1]

[1]Center for Addiction and Mental Health

Background: In 2018, the association of faculties of pharmacy of canada (afpc) opioid working group developed a list of competencies for opioid and pain pharmacy education. In 2021 the afpc, in collaboration with the canadian association of schools of nursing (casn) and the canadian association for social work education (caswe-acfts), created an opioid use and opioid use disorder (“ououd”) education resource. The ououd resource was developed by topic experts, is freely accessible and bilingual, covering 71 topics within 8 modules.

Goals: This presentation will outline which AFPC opioid competencies are addressed in the OUOUD modules and describe the experiences to date of faculties of pharmacy across Canada to integrate the modules into their curricula.

Description: This session will review the AFPC opioid competency statements and provide an introduction to the OUOUD resource and learning outcomes.

A survey was circulated to representatives from each faculty of pharmacy in Canada to identify if and how, the OUOUD resource is being incorporated into courses. Preliminary responses indicate that at least three faculties of pharmacy have incorporated these modules into their 2021-2022 curriculum: two as mandatory components across several required pharmacology and therapeutics courses and one faculty is using the module as a supplemental resource in an elective course in mental health and addictions. Other faculties are considering integration in the 2022-2023 curriculum. Select cases will be presented in more detail to highlight the various ways that this resource has been incorporated into curricula.

Relevance to pharmacy education: This presentation will facilitate collaborative quality improvement in opioid education by exploring how this resource may support competency-guided opioid teaching.

ORAL PRESENTATIONS
M9-2

Unraveling another pandemic: Evidence-based strategies to taper the opioid crisis

Karin Ens[1], Dana Turcotte[1], Brigitte Sabourin[2], Gregg Tkachuk[2]

[1]College of Pharmacy, University of Manitoba, [2]Max Rady College of Medicine, University of Manitoba

Background: The opioid crisis has become a secondary pandemic, as we've witnessed its impact on morbidity and mortality multiply amidst COVID-19 restrictions and reduced access to care. Although tapering opioids is highlighted as a priority action to combat the crisis in many practice guidelines across Canada, there is sparse evidence on clinically safe and effective tapering approaches, with less still on practical implementation strategies.

Goals: This session will discuss an ongoing patient-centered, pharmacist-led, multidisciplinary opioid education and tapering initiative. Evidence behind the project's development along with potential impacts on clinical practice, pharmacy education and patients will be highlighted. Challenges and lessons learned will also be shared as part of this session.

Description: This clinical trial focuses on the impact of a pharmacist-led tapering protocol and a one-day education workshop on opioid consumption and overall pain in individuals with chronic non-cancer pain on long-term opioid therapy. Half of all study participants are randomized to take part in a comprehensive, interactive one-day virtual workshop, which was developed through a highly collaborative process, resulting in a session that is multidisciplinary and patient-centered. The workshop includes pain and opioid education along with significant psychological content, specifically Acceptance and Commitment Therapy (ACT). Following the workshop, all patients participate in a targeted, pharmacist-led, multidisciplinary opioid tapering program based on evidence emphasizing high patient involvement, goal-setting and significant clinician support. This clinical approach to tapering is individualized for all patients by the pharmacist clinician based on current dose of opioid, clinical picture and individual tapering goals, with consistent and frequent follow-up and support being foundational to the process.

Relevance to pharmacy research/education: The role of pharmacists in opioid stewardship initiatives is a growing priority of the profession. Recently, the AFPC collaborated with an interdisciplinary team to develop educational guidelines and materials on opioid use and opioid use disorder. Further, the Canadian Pharmacists Association established the Pharmacists' Opioid Stewardship Initiative, focused on providing evidence for pharmacist impact on opioid stewardship initiatives and advocating for advancing these roles across Canada. This project will provide Canadian data on the roles and impact of pharmacists in this clinical initiative.

ORAL PRESENTATIONS

SIG-1

Predicting which applicants will most likely succeed in a PharmD program: Challenges and realistic expectations

Robert Renaud[1]

[1]*College of Pharmacy, University of Manitoba*

Background: Among PharmD programs, while much is known about how well admission variables predict subsequent success in programs, it is less clear how these predictive relationships can depend on the data characteristics of predictors/criteria, how the data is analyzed and how the results are interpreted.

Goals: The goals of this presentation are (1) to summarize factors that can influence the relationship between admission (predictor) variables and students' subsequent success in the program (criterion) and (2) clarify what can be reasonably expected regarding the relation between the predictors and criteria.

Description: This presentation covers three parts. First, the factors that can influence the relationship between admission (predictor) variables and students' subsequent success in the program (criterion). A clearer understanding of what can influence these predictive relationships can better inform decisions to either maintain current admission requirements, or consider revisions. Second, the fit between the type of analysis (e.g., regression) and the selected (predictor/criterion) variables. Finally, what can be reasonably expected regarding the relation between the predictors and criteria? While the relationship is never perfect, how much 'imperfection' should admission requirements realistically expect?

Relevance to pharmacy education: The main objective of the admissions process is to help maximize the percentage of accepted students who will subsequently succeed in the PharmD program. A greater awareness of factors that can influence this predictive relationship, can either provide added empirical support for current admission requirements, or inform considerations of possible updates in admission requirements.

ORAL PRESENTATIONS

SIG-2

Entrustable Professional Activities (EPA) implementation follow-up: educating the educators

David Williamson[1], *Anne Julie Frenette*[1], *Pascale Meunier*[1], *Julie Simard*[1], *Gilles Leclerc*[1]

[1]*Faculté de pharmacie, Université de Montréal*

Goals: To be successful at implementing an EPA assessment process in a pharmacy residency program, we need to rapidly gain preceptors' trust in the process itself and to increase their confidence in their own competency at using the new evaluation process. This requires a quick turn-over of preceptors' evaluation and supervision habits and depends on the faculty's ability to develop an interactive process to answer their questions and overcome their fears. Preceptors need to acquire semantic vocabulary that pertains to the education field and assimilate new concepts in a short period of time. Knowledge translation methods need to be flexible, focus on key messages and anticipate future challenging situations preceptors might encounter in a concrete way.

Description: We designed an education program for clinical preceptors of pharmacy residents that included passive information, interactive discussion and online training. We first provided information on the EPA concepts, specific EPA descriptions and supervision scales using short informative videos. Then, we met directly with preceptors from different clinical rotations (e.g ICU, oncology, central pharmacy) to answer questions, clarify specific concepts and draw a clear portrait of a typical resident that has reached every supervision level under each EPA. These meetings led to the elaboration of a structured clinical rotation description document that can be used as a model. Finally, we developed an integrative online education activity where preceptors were asked to practice EPA evaluation on educational scenarios. Feedback was automatically provided upon answering the questionnaire.

Relevance to pharmacy education: Pharmacy practice has evolved over the years to include more and more clinical autonomy. Pharmacy residency programs need to adapt to this reality and train their students in a continuous way that values developing autonomy. EPA assessment meets the objective of developing a residency training close to real practice. However, moving from traditional evaluation to EPA requires effective preceptor training. A structured education program helps to empower preceptors in their educational role.

ORAL PRESENTATIONS

SIG-3

Pharmacy practice instructors as experience curators: Teaching using simulated longitudinal patients

Mike Chong[1], *Terri Genge*[1]

[1]*School of Pharmacy, Memorial University*

Goals: Our presentation will highlight how instructors can incorporate longitudinal simulated patient cases over multiple encounters in pharmacy practice courses to promote professional responsibility and teach continuity of care.

Description: During one of our third-year pharmacy practice courses, we created and introduced students to four regular patients early in the course. Students interacted with these patients over multiple encounters and were responsible for their care. The hallmark of these longitudinal cases was the diverse decisions each student made when providing care and how this branched and carried forward into subsequent encounters to simulate continuity of care. Instructors modified patient outcomes depending on individual student actions, to create dynamic cases and emphasize the effect of student decisions on patient care. An added benefit was the opportunity for students to listen to and discuss their unique patient with their peers.

The encounters were designed as live interactions with simulated patients and healthcare providers and written activities such as documentation or chart reviews. The cases incorporated multiple areas of practice including pharmacotherapy, ethics and drug information. Several activities incorporated an individualized electronic health record to help organize scenarios and provide feedback.

Formative feedback after each activity encouraged students to reflect on their decisions and documentation, while preparing them for the next encounter. Students were expected to recall their previous interactions by reviewing their notes and many initially struggled to be prepared. Over time, students became more familiar with their patients leading to more thoughtful and successful interactions.

Relevance to pharmacy education: The use of simulated patient care cases to teach pharmacy practice is widespread, yet they may be created as standalone encounters or activities. Although some cases may incorporate multiple encounters, student decisions and actions may be trumped by instructor choices and highly structured scenarios. We wanted to emphasize diverse student decision-making and reasoning to foster accountability, relationship building and continuity of care. We think our design philosophy and teaching initiative can be applied to other pharmacy practice courses and will be of interest to instructors.

ORAL PRESENTATIONS

SIG-4

Supporting patient-centred practice: A workshop for pharmacy students to provide strategies for empowering patient self-efficacy and health behavior change.

Rene Breault[1], *Michelle MacDonald*[1]

[1]*Faculty of Pharmacy and Pharmaceutical Sciences, University of Alberta*

Goals: Pharmacy students at the university of alberta are taught communication skills to establish meaningful patient relationships and build trust for the purpose of helping to manage patients' medication therapy. Patient-centred practice supports a partnership between patient and providers grounded in trust and respect of each other's expertise. A need was identified to further develop patient-centred care skills to facilitate chronic disease management in building patient's self-efficacy. We aimed to evaluate the delivery of a workshop focused on teaching patient-centered care and health behavior change support strategies and assess the impact on student learning including understanding and confidence in applying a systematic approach and their readiness to integrate these skills to change their practice.

Description: During this presentation we will describe the basic tenets of the healthchange® methodology and our partnership with alberta health services to deliver a 6-hour workshop to two different cohorts of third year pharmacy students (fall 2020 and fall 2021). We will describe the results from the evaluation we conducted using a post-workshop survey that will include students' perceptions of their key learnings and understanding of the practice principles, confidence, and readiness to integrate the skills into their practice. We will also outline the themes that were identified related to the students goals for practice change.

Relevance to pharmacy education: Teaching pharmacy students skills related to patient-centred practice is a core mission of practice skills curricula. We provided a focused session to introduce students to skill development in the areas of behavior change management using a systematic approach with the aim of helping them apply these strategies to chronic disease management. The workshop also helped students reflect on their own learning needs to further integrate these skills in their practice. The workshop presented an important opportunity to engage students in developing their patient care skills and provide a focus for application in future skills labs.

ORAL PRESENTATIONS

SIG-5

A blueprint to design immersive simulation for novices that promote learning

Marie-Laurence Tremblay[1]

[1]*Faculté de pharmacie, Université Laval*

Background: For novices, immersive simulation bridges the gap between theory and real-life practice, as it allows safely experiencing meaningful learning tasks in an authentic environment. Complex tasks provide opportunities for novices to learn from their mistakes. Educators aim to design tasks and environments that are complex enough to promote learning, but not too complex to compromise task performance or cause cognitive overload. During this session, we will present a blueprint that may help designers in simulation to achieve this goal.

Goals: To present a blueprint to design sound immersive simulation for pharmacy students that stimulate learning. This blueprint is the result of three experimental studies in simulation and is currently used to inform the design of immersive simulation at the Faculty of Pharmacy at Laval University.

Description: The blueprint describes how to adapt learning tasks and learning environments that vary in complexity, without increasing extraneous cognitive load (i.e. cognitive load that does not pertain to the learning goal). This blueprint has been tested with second-year pharmacy students (N=162). Using video recordings of the simulated tasks, two raters assessed students' task performance. We measured intrinsic and extraneous cognitive load and self-perceived learning with questionnaires after the task simulation and tested knowledge after task and debriefing.

Although task and environment complexity significantly impacted students' performance, their task performance scores remain good regardless of the experimental conditions. Students also did not experience cognitive overload, hence demonstrating the value of the blueprint to modulate complexity in simulation for novices with respects to their expertise level.

Relevance to pharmacy education: Pharmacy schools in Canada all use a form of simulation-based training to promote skills development in a safe environment. Designing these simulations to account for students' level is a challenge given the limited evidence on effective instructions in simulation for novice students. Considering the cost for conducting immersive simulation, educators must ensure that instructions are effective and promote learning.

POSTERS – PHARMACY EDUCATION

PE-1

Pharmacists as teachers: development of an education class specific to year-1 pharmacy residents

David Williamson[1], *Anne Julie Frenette*[1], *Marie-France Beauchesne*[1], *Gilles Leclerc*[1]

[1]*Faculté de pharmacie, Université de Montréal*

Objectives: The pharmacy university curriculum focuses mainly on the development of pharmacotherapy and pharmacology knowledge and clinical competencies. However, hospital pharmacists' responsibilities largely expend beyond these boundaries. Teaching is a routine task that belongs to pharmacy practice and clinical preceptors are asked to accompany students pathway by providing theoretical teaching on pharmacology and pharmacotherapy, by demonstrating pharmacy practice skills, by guiding direct patient care or medical team oriented interventions and by evaluating students' performance. However, education competencies are usually acquired by clinicians over experience, by trial-and-error processes or self-learning and depend largely on one's own interest in the topic. If teaching is recognized by the majority as an essential competency of hospital pharmacy clinicians, pharmacy residents training needs to tie down its curriculum with real context practice.

Methods: We developed a one-credit-class entitled "Education for pharmacy residents" in which students of the master's in advanced pharmacotherapy program explore different education techniques that apply to teaching in pharmacy. Over sixteen months, they develop specific competencies in teaching and evaluation by participating in dynamic forum exchanges led by faculty professors, reflective thought and case scenario analyses, lectures, undergraduate student direct teaching and team work supervision and undergraduate student rotation shadowing.

Results: Residents demonstrated throughout the session that they were mostly concerned by the theoretical concepts of proximal development zone, multiple learning styles and adaptation of teaching to different cultural contexts and constructive feedback, which they committed to apply directly to their own teaching experience.

Conclusion: Hospital pharmacy practice has evolved largely over the past years and teaching is now recognized as a professional activity that belongs to the pharmacist's work. However, although pharmacy residents were exposed to undergraduate student supervision during clinical rotation, our faculty curriculum lacked formal education classes that permit the development of a strong competency construct. We believe that education classes specific to teaching of pharmacy should be part of pharmacy residents training. Since teaching is a recognized pharmacy professional activity, education competencies were evaluated using a specific-to-teaching EPA (entrusted professional activity).

Interactive videos to promote antimicrobial stewardship

Daniel J. G. Thirion[1], *Luc Bergeron*[1], *Marie-Laurence Tremblay*[1]

[1]*Faculté de pharmacie, Université de Montréal*

Background: Antimicrobial resistance is among the highest-level threats to global population health and requires competent healthcare professionals to provide adapted care. The National Institute of Public Health in Quebec considers that constant efforts in education are required to inform both professionals and the public in terms of appropriate use of antimicrobials. In this context, the Faculty of pharmacy at the University of Montreal and the Faculty of pharmacy at Laval University created an innovative teaching method to promote antimicrobial stewardship competency for pharmacists and pharmacy students.

Methods: Using an ADDIE approach to instructional design (Analysis, Design, Development, Implementation and Evaluation), we developed a series of videos on different fundamental concepts in antimicrobial stewardship, such as the human microbiome, pharmacokinetic/pharmacodynamic concepts related to antimicrobial use and assessment of treatment indication. The content of the videos is meant to illustrate scientific concepts underlying infectious diseases pharmacotherapy that remain constant over time. These capsules therefore cover the commonalities of antimicrobial stewardship and are preludes to pharmacotherapy courses.

Results: In the spring of 2022, a first video was developed by a team of graphic designers from Laval University. This 15-minute capsule discussed concepts of pharmacokinetics and pharmacodynamics. Second-year pharmacy students from Laval University watched the interactive video and provided feedback through nine questions (global rating scale from 0 to 10) and a one open-ended question related to the content and the format of the capsule. This pilot allowed the team to improve other capsules currently in development.

Conclusion: The recent legislative changes have expanded the scope of practice in pharmacy, allowing pharmacists to prescribe antibiotics for specific infectious diseases. In addition, antimicrobial stewardship has evolved as a required organizational process within health care institutions over the past decade. Pharmacists are now more than ever key stakeholders in ensuring an appropriate antimicrobial use. An initiative that trains pharmacists and students on important concepts in antimicrobial stewardship plays an essential role in patient safety.

POSTERS – PHARMACY EDUCATION

PE-3

Structuring assessments to support adaptive expertise

Naomi Steenhof[1], Nicole N Woods[2], Maria Mylopoulos[2]

[1]Leslie Dan Faculty of Pharmacy, University of Toronto, [2]University of Toronto

Background: Preparation for future learning is understood to be a key capability of adaptive expertise. This experiment explored the extent to which we may use productive struggle to structure tests to support preparation for future learning within pharmacy education.

Objectives: We manipulated the sequencing of test-question difficulty during a 'learning through pretesting' phase and measured conceptual knowledge development and performance on future learning assessments. In doing so, the study also expands theories of testing to account for these measures, moving beyond backwards-facing assessment that emphasizes measures of retention and application.

Methods: Year one and year two students (N=99) enrolled in the PharmD program at the University of Toronto were randomly assigned to one of three learning conditions: high-struggle, low-struggle and a control condition. During the learning phase (comprised entirely of multiple-choice questions), participants answered a series of questions where the order was manipulated dependent on condition. Participants in the high-struggle condition had questions presented from most difficult to least difficult, participants in the low-struggle condition had questions presented to them from least difficult to most difficult and participants in the control condition had a mixed difficulty order. Regardless of the chosen answer, each participant was given an in-depth explanation as to why each answer was correct or incorrect. Subsequently, all participants completed an initial assessment phase, a new learning phase and a future learning assessment.

Results: For participants in year one, those in the high-struggle learning condition had a higher score on the future learning assessment than in the low-struggle and control condition. This pattern did not hold for participants in year two.

Conclusions: This research demonstrates that not only can assessment function as a platform for learning, but we can leverage testing using theories of productive struggle to support the development of expertise. Furthermore, we discovered that the quality of the struggle experienced by the learner depends on the learners prior knowledge.

POSTERS – PHARMACY EDUCATION

PE-4

Development and implementation of a master of pharmacy in advanced pharmacy practice (MPharm) program

Cynthia Richard[1], Tejal Patel[1], Sadaf Faisal[1], Feng Chang[1], JM Gamble[1], David Edwards[1], Kelly Grindrod[1], Jeff Nagge[1], Shawn Wettig[1], Andrea Edginton[1]

[1]School of Pharmacy, University of Waterloo

Background: Pharmacy education in Canada has shifted from the traditional baccalaureate degree to an entry-to-practice Doctor of Pharmacy (PharmD) program. The previous post-baccalaureate

PharmD program for training advanced practitioners is no longer available. This has created a need for a program for pharmacist practitioners interested in advancing their knowledge to

address increasingly complex challenges in patient care. The University of Waterloo School of Pharmacy developed the Master of Pharmacy in Advanced Pharmacy Practice (MPharm) Program to address this need.

Objective: To discuss the development process and details of the MPharm program.

Methods: A workshop was held in 2017 to discuss clinical graduate programs and a working group was formed to further develop the MPharm program curriculum. The working group consisted of the Hallman Director, the Associate Director, Research and Graduate Studies and three faculty members with clinical training and experience. A program proposal brief was developed based on the working group's discussions, input from faculty and external stakeholders (e.g., regional clinical coordinators, leaders in hospital pharmacy and academic pharmacy).

Results: The SOP Council approved the program brief in 2018. A two-year, full-time program was developed consisting of three components; (1) Course work (e.g., advanced therapeutics, critical appraisal, research methods, statistics, physical assessment), (2) Clinical practicum (a minimum of 750 hours) in family health teams, hospitals, long-term care facilities or other settings tailored to the experience and interests of the student and (3) Research project addressing a critical clinical or practice issue. Students are also required to complete a leadership workshop and the Fundamentals of University Teaching Program offered by University of Waterloo as program milestones. The program had its first intake of three students in 2021.

Conclusion: The MPharm program provides practicing pharmacists with a novel pathway to develop advanced clinical, research and education skills through a combination of in-class and application-based learning, supporting the growing demand for advanced training among pharmacists**.**

POSTERS – PHARMACY EDUCATION

PE-5

Preparing students for inpatient practicum experiences: A virtual workshop

Kayla Fang[1], *Asal Taheri*[1]

[1]*Faculty of Pharmaceutical Sciences, University of British Columbia*

Objectives: In preparation for inpatient Advanced Pharmacy Practice Experiences (APPE), a virtual workshop was developed with the aim of providing year three pharmacy students with the opportunity to: build on their pharmaceutical care process knowledge and skills, apply this to a moderately complex patient case scenario hosted on an electronic health record and to receive feedback from a practicing pharmacist.

Methods: We developed a virtual workshop consisting of a pre-workshop asynchronous component, followed by a 3-hour synchronous session. As part of the asynchronous component, student participants reviewed a guidebook outlining the application of the pharmaceutical care process to inpatient cases and completed a work-up and care-plan for an inpatient case. During the synchronous session, participants were asked to present content to a pharmacist facilitator. Participant workshop experience and the perceived self-confidence relating to various skills were measured post workshop and analyzed using descriptive statistics. Narrative comments were grouped into common themes.

Results: 10 students participated; 8 completed post-workshop surveys. All student participants agreed or strongly agreed that the workshop met their expectations and that the asynchronous component sufficiently prepared them for the live session. Students mostly frequently stated that they most enjoyed having a facilitator with hospital pharmacy knowledge and experience. Upon workshop completion, 100% (n=8) and 75% (n=6) of participants stated feeling confident or very confident in systematically gathering pertinent patient information and creating care plans, respectively. Majority stated feeling confident or very confident in systematically presenting their work to a preceptor. All stated that they would suggest this workshop to other students.

Conclusions: This experience highlights a pragmatic approach to preparing students for these practicums by simulating the process of working-up, developing and presenting care plans to facilitators as expected on inpatient practicums. These findings are applicable to other didactic and experiential courses where application and delivery of the pharmaceutical care process to patient cases is required.

PE-6

Students' conception of local responses to global problems for a more peaceful and sustainable world

Kyle Wilby[1], Emily Black[1], Bridget Paravattil[2], Arcelio Benetoli[3]

[1]College of Pharmacy, Dalhousie University, [2]College of Pharmacy, Qatar University, [3]Department of Pharmacology and Therapeutics, Health Sciences Centre, State University of Maringá

Background: The concept of global citizenship aims to prepare learners to be able to function and be competitive within a global environment. Successful learners may effectively 'think globally' but 'act locally', aiming to contribute to positive global change.

Objective: The goal of this project was to develop research-informed curricular content for global citizenship tailored to pharmacy students using a pre-established pedagogical framework.

Methods: This study occurred over three phases. Phase 1 consisted of semi-structured interviews with practicing pharmacists in Brazil (n=4), Canada (n=4), New Zealand (n=4) and Qatar (n=4) to identify global issues for case development. Phase 2 consisted of pilot testing developed cases from Phase 1 via individual interviews with target students in Canada (n=2) and a focus group in New Zealand (n=5). Phase 3 consisted of implementation of a 1.5 hour teaching event in New Zealand using the refined case material and formative assessment of final-year pharmacy students (n=120).

Results: Phase 1 resulted in five case scenarios (antimicrobial resistance, drug shortages, ocean pollution, climate change, rise of nationalism) across three categories (global health and wellbeing, climate and environment, geopolitics and power) that were tested and refined in Phase 2. Phase 3 resulted in student groups being able to achieve the intended learning outcome on a median of 4 (range, 2 to 5) of the developed cases. Students' interventions included new dispensing models, use of technology, community engagement, education initiatives and others.

Conclusion: Findings support the notion that when tasked to 'think globally', students are able to 'act locally' by designing pharmacy practice interventions to reduce the impact of political, environmental and health-related global problems.

Assessing pharmacy student performance on practicum using a novel rubric based on the dreyfus model of skill acquisition

Janice Yeung[1], *Ali Reza Ladak*[1], *George Pachev*[1], *Nicole Bruchet*[1]

[1]*Faculty of Pharmaceutical Sciences, University of British Columbia*

Objective: The Entry-to-Practice PharmD Program at the University of British Columbia previously assessed student performance on practicum utilizing a Likert scale from 0 to 9 resulting in challenges with clarity and assessor subjectivity. A novel assessment rubric based on the Dreyfus Model of Skill Acquisition was developed and implemented to address these issues.

This two-phase study sought to evaluate student, practice educator and faculty perceptions related to the rubric's effectiveness in assessing student performance within the direct patient care practicum setting.

Methods: Focus groups and semi-structured interviews were conducted with students, practice educators (PEs) and faculty. Transcripts were de-identified and analyzed using NVivo to identify major themes and repeated ideas expressed within cohorts. To verify the themes identified and collect further data on existing stakeholder perceptions, a Qualtrics survey was then disseminated to all E2P PharmD students and PEs with previous experience using the rubric on practicum.

Results: Seven students, 7 PEs and 4 faculty participated in focus groups/interviews and 70/645 (10.9%) students and 103/756 (13.6%) PEs participated in the survey. The majority of participants felt the rubric clearly communicates expectations for student performance, is relevant and consistent with pharmacy practice and is useful in accurately assessing performance. Identified challenges included the rubric's visual organization, length, redundancy of some assessment elements and misconceptions about its intended use.

Conclusion: Although response rates were limited, findings suggest an assessment rubric based on the Dreyfus Model of Skill Acquisition is effective in assessing student performance within the direct patient care practicum setting. Through ongoing refinements to our assessment processes, further training/education and the development of additional resources, work is ongoing to address the challenges identified to better support student learning, minimize subjectivity and improve consistency between practice educators in evaluating student capability and competence on practicum.

POSTERS – PHARMACY EDUCATION

PE-8

Difficult conversations: Using a virtual environment to create safer spaces

Theresa Charrois[1], *Eleanor Leoni*[1]

[1]*Faculty of Pharmacy and Pharmaceutical Sciences, University of Alberta*

Background: As part of a new third year practice skills course, students were provided the opportunity to discuss scenarios and case studies on challenging topics related to death and dying, racism and discrimiation and gender diversity. These topics were presented using both discussion-based and workshop formats instead of a typical lab format with patient interactions. Zoom was utilized for these workshops, to help engage students in a format that allowed for more anonymity than in a regular practice skills environment.

Objective: Our intent was to develop a strategy for maintaining a safer space for student discussions related to topics that may be stressful or challenging for students.

Methods: Three learning workshops were conducted with pharmacy students on topics that are often challenging to discuss. Instructors wanted to ensure that students could have the opportunity to easily turn off their camera in any event they were upset or having difficulties with the content. Based on the activity feedback, instructors have decided in upcoming years to continue to use zoom for these challenging topics, in order to allow the students to feel safer than they might in a live classroom setting. Instructors will discuss how they effectively used the virtual environment for three different potentially challenging topics related to patient care. Three different reflective assessments were used to help consolidate the student's learning.

Results: Teaching virtually has allowed instructors to explore different platforms for delivery of content that extend beyond the traditional classroom or practice skills laboratory setting.

Conclusions: By using zoom for these workshops, it has allowed us to help explore difficult content with our third year students.

Supporting connection and leadership development in alumni of a leadership course

Patricia Gerber[1], *Parkash Ragsdale*[1], *Meghan Lui*[1]

[1]*Faculty of Pharmaceutical Sciences, University of British Columbia*

Objectives: Since its launch in 2017, a total of 55 third-year PharmD students have completed the Leadership Experience Applied to Pharmacy ("LEAP") leadership course. Many LEAP Alumni are now practising pharmacists who remain connected as guests in the course, mentors to LEAP students and through direct contact with the Course Coordinator. This project was aimed at: exploring how LEAP Alumni embody leadership early in their careers; how to support their on-going leadership development and connections to the course and one another; and gauge their interest in growing the "LEAP Community of Practice" (CoP).

Methods: A literature review and interviews with academic experts in student leadership development (SLD) were conducted to learn about best practices in alumni engagement, SLD and the development of CoP's. A survey of LEAP Alumni was deployed to gauge their level of engagement with leadership opportunities and development post-graduation and to collect feedback about their interest in expanding and contributing to the LEAP CoP.

Results: The body of literature on alumni engagement and links between SLD and alumni uptake of leadership opportunities is limited. There is agreement amongst academic experts in SLD that early-career pharmacists continue to need support post-graduation to enhance their leadership skills. Our LEAP Alumni have applied their leadership skills upon graduation to varying degrees. They have identified how the transferable skills and experience gained during the LEAP course have supported their leadership development post-graduation; expressed interest in enhancing the LEAP CoP and in expanding their professional network within it.

Conclusions: The engagement of LEAP Alumni in leadership roles and opportunities since graduation is encouraging and there is strong appetite for further structuring of the CoP to support their on-going leadership development and facilitate connections. Upon exploration of viable options, a LEAP LinkedIn group has been launched and is serving as a springboard for the enhancement of the LEAP CoP.

POSTERS – PHARMACY EDUCATION

PE-10

Maritime community pharmacists' perceptions of learner-preceptor models and enablers, barriers and motivators to precepting pharmacy students

Natalie Kennie-Kaulbach[1], *Harriet Davies*[1], *Anne Marie Whelan*[1]

[1]*College of Pharmacy, Dalhousie University*

Objectives: This portion of a two-part study aimed to explore Maritime community pharmacists' perceptions related to awareness of and willingness to participate in various learner-preceptor models for experiential education and their reported enablers, barriers and motivators to precepting learners in practice.

Methods: This was a descriptive cross-sectional survey of community pharmacists in Nova Scotia, New Brunswick and Prince Edward Island conducted in fall of 2021. Items for the questionnaire were generated from: identified learner-preceptor models and previous pharmacy preceptor questionnaires. A five-point Likert scale was used, along with open-ended questions; responses were analyzed using descriptive statistics. A link to the electronic Opinio survey was distributed by provincial pharmacy organizations and social media.

Results: 118 (approximate 8% response rate) participants completed questions relevant to this analysis. Most respondents were non-owner managers (29.7%) or full-time staff pharmacists (29.7%) with 89.7% having previous experience as a preceptor. The three precepting models that respondents were most aware of included: 1:1 teaching (88.1%), co-preceptor (81.2%) and not acting as an official preceptor of record but assigned responsibility for the student for a period of time (46.2%). Respondents were most willing to act as a preceptor for 1:1 teaching (91.4%), co-preceptor (81.0%) and were least willing to be a preceptor in a layered learning model (55.5%). The preceptor model respondents were most interested in trying was the co-preceptor model (30.5%). The highest rated motivators for precepting pharmacy learners were precepting makes me a better pharmacist (90.2%) and precepting increases my knowledge (87.1%). The highest rated barriers were time during the workday (72.4%) and lack of adequate staffing (64.5%). Respondents reported continuing education credits (69.9%) and having a fully staffed pharmacy (78.5%) to support learners as the most highly rated enablers.

Conclusions: Results from this study are beneficial to inform preceptor recruitment, preceptor development initiatives and to determine if specific learner-preceptor models would be feasible to consider for expanding site capacity and to support student learning.

POSTERS – PHARMACY EDUCATION

PE-11

Pharmacy student and practice educator considerations on developing a virtually delivered direct patient care practicum at a university clinic

Timothy Lim[1], *Jamie Yuen*[1], *Rebecca Leung*[1], *Hayley Hefford*[1], *Caitlin Chew*[1]

[1]*Faculty of Pharmaceutical Sciences, University of British Columbia*

Objective: The University of British Columbia Pharmacists Clinic transitioned its patient care activities and direct patient care experiential education practicum to a virtual format due to the COVID-19 pandemic. The objective of this study was to determine the factors that enable successful development of a virtual patient care practicum experience at a university clinic from the perspectives of student pharmacists and practice educators.

Methods: A qualitative research methodology was used to gain the perspectives of student pharmacists and practice educators. Student pharmacist interns and pharmacist practice educators at the university clinic were invited to participate in separate focus groups. Each focus group session was conducted using a semi-structured approach and consisted of questions aimed at gaining insight into participant perspectives on how they envision optimal, virtually delivered, direct patient care practicums. The focus group sessions were audio recorded with participant consent and transcribed. All data was kept anonymous and secure.

Results: Three pharmacist practice educators and three student pharmacists participated in their respective focus group sessions. A thematic analysis was used to evaluate the data. Six major themes emerged: (1) student-practice educator relationship, (2) technology optimization, (3) student skill development, (4) student support, (5) patient care related activities and (6) in-person vs virtual practicum preferences. Proposed strategies to mitigate the limitations of virtual practicums included determining guidelines around communication, arranging enriching and engaging learning opportunities, and having access to reliable internet.

Conclusion: The participants in this study provided important insight on factors that practice sites can consider to support successful development and delivery of a virtual direct patient care practicum. These results can be applied to inpatient and outpatient patient care practicums during and following the COVID-19 pandemic.

PE-12

Undergraduate pharmacy students' contributions as pharmacist extenders in direct patient care during inpatient hospital experiential rotations: A scoping review

Natalie Kennie-Kaulbach[1], Mari Humphry[1], Olavo Fernandes[2], Kent Toombs[3], Jennifer Isenor[1], Karen Cameron[4]

[1]College of Pharmacy, Dalhousie University, [2]University Health Network, Toronto, [3]Nova Scotia Health Authority, [4]Leslie Dan Faculty of Pharmacy, University of Toronto

Objective: To identify and characterize published literature on undergraduate pharmacy students' contributions to extend pharmacist's direct patient care during inpatient hospital experiential rotations.

Methods: A scoping review of publications from 2000 to July 2021 was conducted using Arksey and O'Malley and Levac et al. methods. Articles were included if they involved undergraduate pharmacy students during experiential rotations, described the specific contribution of students in direct patient care in the inpatient hospital setting and reported outcomes related to the care provided. Included articles were categorized according to Canadian Consensus clinical pharmacy Key Performance Indicators (cpKPIs) and non-cpKPI care activities. Students' contribution to reported outcomes were summarized and extracted data was analyzed for key themes.

Results: Searches yielded 1102 articles. Thirty-two-were included and an additional 4 were identified through snowball searching (n=36). Most studies (n=25) involved students in advanced pharmacy practice experiences. Studies reported student involvement in the delivery of single or multiple care services including cpKPIs: medication reconciliation on admission (n=13), pharmaceutical care (n=13), interprofessional care rounds (n=4), patient education during hospital stay (n=6), medication reconciliation at discharge (n=6) and patient education at discharge (n=9). Eleven studies reported student involvement in non-cpKPI care activities, including reporting clinical interventions (n=5), clinical services (n=2) and post discharge follow up with patients (n=4). Outcomes related to student contribution varied widely and included the number of patients seen, cpKPIs completed, drug therapy problems identified, medication discrepancies identified, recommendations made, interventions performed, impact level, acceptance rates and cost savings. Seven studies reported clinical outcomes measures like readmission rate and emergency room visits.

Conclusions: This review demonstrated that undergraduate pharmacy students have been involved in and positively contributed to the provision of a wide range of direct patient care services in the inpatient hospital setting including cpKPIs.

POSTERS – PHARMACY EDUCATION

PE-13

Regional practicum model for pharmacy experiential education

Janice Yeung[1], *Neelam Dhaliwal*[1], *Sonali Rishi*[1]

[1]*Faculty of Pharmaceutical Sciences, University of British Columbia*

Objective: This project explored the possibility of a regional practicum model (RPM) within the Entry-to-Practice (E2P) PharmD program whereby students would complete a series of their required practicums within a defined rural/remote community/region. In pursuing this model, we would aim to facilitate opportunities for students to develop deeper connections to these communities, gain unique pharmacy practice and patient care experiences and potentially increase their interest in the practice needs and potential career opportunities within these regions.

Methods: Three steps were undertaken: an environmental scan to determine whether similar models were being used locally in other health professional programs at UBC or nationally in pharmacy programs across Canada; a literature review to assess the benefits of implementing this type of model; and a survey to year one to four E2P PharmD students to gather information on their perceptions, any supports that would be desired and potential barriers that could be addressed.

Results: The focused environmental scan found that no pharmacy school in Canada had implemented this type of model; however, UBC Medicine did utilize a similar model. Longitudinal integrated clerkship (LIC) models, whereby students have a recurrent placement with the same patient population and preceptor over a period of time, have been implemented within medical program contexts and findings were generally favourable, however no literature within the pharmacy context was identified.

Of the 212 students that participated in the survey, 68 were "interested" in participating in a RPM, while 95 were "possibly interested". Reasons cited include interest in a rural/remote practicum, seeking a unique experience and increased career opportunities. Students noted challenges with relocation, accommodation and financial concerns as potential barriers to this type of model.

Conclusion: These three steps supported pursuing development of a rpm. Further input from students and practice educators around barriers and support needs will be needed in the development and implementation of such a model.

POSTERS – PHARMACY EDUCATION

PE-14

Back in school: Reflections of pharmacy residents teaching in a longitudinal rotation

Mike Chong[1], Rebecca Norma[2], Jenna Hache[2], Sarah Winsor[2], Catherine Grandy[2], Roberto Duart[3]

[1]School of Pharmacy, Memorial University, Eastern Health, Winnipeg Regional Health Authority

Background: Canadian pharmacy residencies have teaching components, but resident experiences may differ between programs. In our study, residents had been embedded within one undergraduate course for a longitudinal teaching and learning rotation. Using reflection and collaboration, research on how residents learn pedagogy and their journey to become teachers can inform preceptors and program development.

Goals: The purpose of our study was to explore resident pedagogical learning and their thoughts and experiences of teaching in a longitudinal rotation.

Description: We conducted a qualitative self-study with 5 former pharmacy residents of one institution. The residents wrote personal narratives to reflect on their teaching experiences, followed by formal group discussions to expand on their thoughts. Data included eight pages of narratives and 135 minutes of audio-recording. We used first cycle descriptive and structural coding to identify topics and content, then second cycle pattern coding to determine similarities and differences among residents.

Results: We generated 5 major reflections. Residents enjoyed teaching and desired meaningful connections with students to share their practice insights. They felt pride when students succeeded but self-critical when students did not perform well. Most residents received limited formal pedagogical education and therefore employed teaching methods they enjoyed when they were students. Residents recognized the value of having several encounters with the same group of students but were conscious of the time commitments required.

Conclusions: Non-clinical teaching is a niche part of pharmacy and our study allowed residents to share stories, recognize common challenges and contribute to each other's professional growth. Through collaboration and reflection, our study of residents learning in a longitudinal rotation should inform program development by drawing attention to time commitments, pedagogy and affective elements of teaching. Balanced residency requirements and engaged preceptors may help residents navigate the novelty of teaching.

POSTERS – PHARMACY EDUCATION

PE-15

Use of written reflections to understand pharmacy student professional identity formation during an early experiential education experience

Natalie Kennie-Kaulbach[1], Hannah Gormley[1], Kristin Janke[2], Harriet Davies[1], Anne Marie Whelan[1], Heidi Framp[1], Sheri Price[3]

[1]College of Pharmacy, Dalhousie University, [2]University of Minnesota College of Pharmacy, Minneapolis, [3]School of Nursing, Dalhousie University

Background: Professional identity formation (PIF) is a process of internalizing a profession's core values and beliefs such that one will "think, feel and act" like a member of a community. A key area of pharmacy student PIF occurs during experiential education.

Goals: To explore PIF among pharmacy students during an early experiential education rotation in community pharmacy.

Methods: First year pharmacy students completed written reflections describing their professional identity and influencing experiences, both before and after a 4-week community introductory pharmacy practice experience in the summer of 2021. All students were invited to participate and de-identified written reflections for students consenting to participate were included in the analysis. Qualitative content analysis was performed including: 1) deductive coding based on professional identity indicators and 2) inductive coding to identify influencers of PIF and to identify changes between pre- and post- written reflections. Reflections were analyzed by two independent coders.

Results: Twelve students participated in the study. Participant description of professional identity varied widely. All participants described discrete professional attributes and behaviors (e.g., knowledgeable, trusted, respected, empathetic) and valuing a patient-centered approach as part of their professional identity, with professional attributes and behaviours being most frequently referenced, particularly in participants with limited pharmacy experience. Participants reflected that observation of pharmacists, the first-year pharmacy curriculum and previous work experience influenced PIF prior to the experiential rotation. A strong influencer of PIF during the rotation was observation of pharmacist preceptors, whereas participants' own experiences with patients were described less often. Reported influencers were generally positive both before and after the rotation, with few participants reporting 'negative' experiences. Changes in professional identity among participants were subtle and categorized as affirmation, acquisition and growth in their professional identity.

Conclusion: Participants were in the early stages of identifying and internalizing professional values, norms and actions. Influencers during the rotation were related to observation of authority more so than participant's own actions, which may reflect the trajectory of pharmacy student PIF at this stage in their training. Influencers should be considered as pharmacy educators identify and develop curricular experiences and preceptor development that support pharmacy student PIF.

PE-16

Implementing an academic electronic health record in a pharmacy informatics course

Ananya Garg[1], *Annie Lee*[1]

[1]*Leslie Dan Faculty of Pharmacy, University of Toronto*

Goals: In the PharmD curriculum, students have limited exposure to real-world electronic health records. The aim of this project is to implement the academic electronic health record (aEHR) in the first-year Pharmacy Informatics course for early exposure to patient records.

Description: The aEHR was developed by the University of British Columbia (UBC) in collaboration with the Association of Faculties of Pharmacy of Canada. With UBC support, the pilot version of the aEHR was launched in the Pharmacy Informatics course in 2021. A practice case, infographic, video tutorial and account instructions were created for first-year students. Additional cases were developed for a timed skills-based assessment. In this assessment, first-year students retrieved information from the aEHR and answered a drug information question. The timed assessment was conducted on the University of Toronto (UofT) Learning Management System (LMS) rather than the aEHR platform. Student feedback on the usefulness of the aEHR was obtained.

Results: It took approximately 5 hours for a senior student to build a case in the aEHR. The aEHR was user friendly for creating and editing cases; however, it was difficult to locate individual cases from the repository especially when working on multiple cases. Students found it easy to navigate the aEHR using the resources provided. They appreciated using the technology first-hand to navigate patient charts instead of passive learning in a lecture. However, it was not intuitive for students to access cases on the aEHR since it was not directly linked to the UofT LMS. The use of the aEHR in the timed assessment was executed well and students successfully accessed the aEHR to answer questions.

Conclusion: The aEHR is an important educational tool to support student learning in the PharmD curriculum. It was successfully implemented in the Pharmacy Informatics course. First-year students were able to retrieve and apply information from various sections of the aEHR. A future step is to implement the aEHR in a Medication Therapy Management course.

PE-17

A novel interprofessional collaboration practicum

Alex Tang[1], *Jessica Jiang*[1]

[1]*Faculty of Pharmaceutical Sciences, University of British Columbia*

Background: Fourth year pharmacy students participated in an interprofessional collaboration (IPC) practicum and were precepted by non-pharmacy health professionals.

Objective: (a) To understand the benefits to being precepted by a non-pharmacy health professional; (b) to describe the value of the IPC practicum activities; (c) to determine the student skills and attitudes and site attributes necessary to create a successful learning experience.

Methods: Four pharmacy students were matched to a four-week non-direct patient care practicum (09/28–10/23/2020). They were precepted by either a family physician, kinesiologist, naturopathic physician or chiropractor. Students participated in shadowing, an IPC project and discussions. Student data was collected from the transcripts of three weekly self-facilitated online Zoom discussions, a focus group and surveys. For this qualitative study, a thematic analysis with a combined inductive/deductive approach was used to analyze the transcripts and surveys.

Results: Based on the thematic analysis, the following Canadian Interprofessional Health Collaborative (CIHC) IP competencies were demonstrated by students: role clarification, team functioning and IP communication. With respect to role clarification, students had an enriched understanding of their PE's role as a care provider. In addition, it became clear that students identified strongly with the medication expert role and felt uneasy when this role was not recognized. With respect to IP communication, students were able to observe how this skill supported patient care and workplace operations. With respect to team functioning, students worked collaboratively with their PEs on IPC projects that bridge pharmacy services to their respectively PEs' clinics. All students agreed that the online discussions enabled peer learning and support. Students identified that demonstrating self-directedness, open-mindedness and professional advocacy were key attributes to succeed on this practicum. Students identified three site attributes that promote IPC: proximity, social connectedness and workplace direct messaging.

Conclusion: While students can develop IP competencies via this novel preceptorship model, future opportunities should focus on creating a range of learning activities that supports the development of all six CIHC IP competencies and evaluating PE perceptions. Self-facilitated discussions can be a meaningful practicum activity for peer learning and support.

PE-18

Development of a community-engaged learning pharmacy elective focused on population and public health concepts

Kayla Fang[1], *Gilly Lau*[1], *Paulo Tchen*[1], *Chu Qi Yu*

[1]*Faculty of Pharmaceutical Sciences, University of British Columbia*

Background: Community Engaged Learning (CEL) combines didactic teaching, reflections and meaningful contributions to the community, benefiting both the community and students. In health sciences, CEL cultivates civic engagement from students, which supports the learning of population and public health (PPH) concepts. The Entry-to-Practice (E2P) PharmD curriculum at the University of British Columbia (UBC) offers both curricular and extracurricular CEL activities, but an opportunity exists to further student learning in this area in the context of rural and remote communities and the health disparities they face.

Objective: To develop an elective for E2P PharmD students that utilizes CEL to educate on health disparities and PPH concepts in the context of underserved communities in rural and remote regions.

Methods: A literature search was conducted to explore the incorporation of PPH concepts and health disparities faced by rural and remote communities into pharmacy education. An environmental scan was conducted and included a survey of Canadian pharmacy programs and review of UBC health programs to determine implementations of CEL in their curricula. These results will inform the elective structure and content.

Results: Literature search identified 37 articles that highlighted the impact of health disparities in rural and remote communities and the importance of integrating public health concepts into the pharmacy school curriculum through a CEL model. Pharmacy students should recognize the social determinants of health as future healthcare providers and apply this knowledge into their practice. Literature outlined CEL approaches consisting of didactic coursework and experiential education with community organizations. Results of the literature search indicated that there are opportunities for pharmacy schools to incorporate principles of public health in didactic and experiential activities. The environmental scan included a review of five UBC health programs. Two of these programs described CEL opportunities within their curriculum. Of five Canadian pharmacy schools responding to the survey, all incorporate PPH concepts into the didactic curriculum and three incorporate CEL into experiential education.

Conclusion: The literature search and environmental scan provides a foundation for development of a new elective. This new elective will address the benefits of PPH education in pharmacy and health disparities in underserved communities.

POSTERS – PHARMACY EDUCATION

PE-19

Evaluation of a milestone OSCE with joint in-person and remote delivery

Sarah Moroz[1], *Cynthia Richard*[1], *Robin Andrade*[1], *Lisa Walsh*[1]

[1]*School of Pharmacy, University of Waterloo*

Objectives: Pharmacy students at the University of Waterloo complete a milestone objective structured clinical exam (OSCE) as a requirement for graduation. During the COVID-19 pandemic, students could opt to participate in either an in-person or a remote format. Our aim was to evaluate whether student outcomes were similar with either format and to identify areas for improvement for remote OSCEs.

Methods: To evaluate student outcomes for in-person vs. remote delivery, we compared mean scores and pass rates using one-way analysis of variance and independent t-tests with Bonferroni correction for multiple comparisons. Logistic regression analyses were used to examine possible bias in students choice of format. Feedback collected from participants via surveys underwent thematic analysis.

Results: 68 students opted to complete the Winter 2021 milestone OSCE in-person and 51 completed remotely. Among in-person exam-takers, the mean score was 73.98% (SD = 7.69) and 5.88% received a failing grade. Among remote exam-takers, the mean score was 70.99% (SD = 7.17) and 3.92% received a failing grade. The difference was non-significant between groups.

Variables examined as potential predictors of students format choice included grades from two previous academic terms and previous scores on a midpoint assessment. All were non-significant predictors of format choice, suggestion no obvious selection bias. 21 in-person exam-takers and 12 remote exam-takers responded to a survey administered after the exam. Common themes among the in-person gorup included praise regarding organization or scheduling and COVID safety protocols and feeling out-of-practice with OSCEs. Remote exam-takers commented positively on exam organization, but noted technical difficulties. Assessors and standardized patients also had positive comments about organization and COVID safety protocols and provided suggestions regarding the virtual set-u.

Conclusions: The milestone OSCE was offered in both an online and in-person format, with similar outcomes regardless of format. Students choice of exam format was not impacted by past grades or performance. Identification of challenges encountered with remote delivery enabled us to modify procedures for subsequent remote OSCEs.

POSTERS – PHARMACY EDUCATION

PE-20

Pharmacist care planning services: A longitudinal case delivered to pharmacy students in a patient care skills course.

Rene Breault[1], *Mina Nagib*[1], *Christine Hughes*[1], *Terri Schindel*[1]

[1]*Faculty of Pharmacy and Pharmaceutical Sciences, University of Alberta*

Background: Pharmacists in the province of alberta, canada have been remunerated for providing care planning services in the form of comprehensive annual care plans (cacp) and standard medication management assessments (smma) to patients since 2012. It was identified that by year three, students had little exposure to providing care planning services.

Objectives: We aim to describe the implementation and evaluation of a longitudinal patient case delivered to pharmacy students to support their skill development related to care planning.

Methods: Longitudinal case was delivered via five activities to students (125) to simulate the process of providing care planning services to a patient in a year 3 patient care skills course in the fall of 2020. To evaluate the case activities, a pre/post survey was administered to students to rate their confidence in skills and beliefs related to care planning services. Thematic analysis of free text responses was used to identify pre-activity learning goals and post-activity learning needs.

Results: One hundred four students (83%) completed the pre-survey with 38 (30%) comleting the post-survey. Prior to the course, the majority of students (84%) had little to no experience with providing care planning services. After completion of the activities, there was a trend toward increased confidence in all care planning skills. Highest confidence in skills related to communicating the purpose and information about the care plan to patients, while the lowest rated skills were communicating with physicians who disagree with the care plan and dealing with ethical dilemmas related to care planning. Themes identified for additional learning by students were: more practical experience, building clinical judgment and addressing conflicts with other healthcare providers.

Conclusion: The longitudinal case delivered in a patient care skills course provided students the opportunity to develop care planning skills within the context of the alberta compensation framework. Future delivery will allow for further skill development identified by students.

PE-21

Impact of the COVID-19 pandemic on canadian pharmacy student experiential education

Janice Yeung[1], Penny Bring[1], Jonathon Naylor[1], Harsimran Bhattal[1]

[1]Faculty of Pharmaceutical Sciences, University of British Columbia

Objective: To assess the impact of COVID-19 pandemic-related challenges on learning and well-being of pharmacy students enrolled in the University of British Columbia's (UBC) Entry-to-Practice (E2P) Doctor of Pharmacy (PharmD) program.

Methods: A literature review was conducted to evaluate pharmacy student experiential education during the COVID-19 pandemic and inform survey development. Following this review, a survey comprised of three pre-existing psychometric scales (the four-item version of the Perceived Stress Scale (PSS-4), the Brief Resilient Coping Scale (BCRS) and the Subjective Happiness Scale (SHS)) and one novel scale called the Pandemic Adversity in Practical Education Questionnaire (PAPEQ) was administered to UBC pharmacy students through the online Qualtrics® platform. Scores on these measures were correlated with each other as well as with scores on the PSS-4, which served as the primary outcome variable, using Pearson's r with a Bonferroni correction. Additional factors including pharmacy employment, year level and practicum location were evaluated as potential predictors of PSS-4 scores using t tests and ANOVA.

Results: Over two-thirds of survey respondents cited pandemic-related stress and safety as their primary concerns. Other cited challenges included concerns surrounding transportation, finances, social isolation, mental health, COVID-19 outbreaks at the practice site, navigating travel restrictions and technologic concerns. During their practicums, pharmacy students reached out to their classmates, practice educators and family and friends for support, whereas available faculty supports were less utilized. The PAPEQ questionnaire reliably measured three distinct obstacles to experiential education during a pandemic which were associated with stress. These included confidence in online learning, safety concerns and practical obstacles. The other factors assessed were not found to be statistically significant predictors of stress.

Conclusion: Survey results provided insight into the impact of pandemic challenges on pharmacy student learning and wellbeing. The PAPEQ tool may be a valid measure of practicum adversity during a pandemic for pharmacy students. Future research investigating reasons for low uptake of available faculty supports is warranted.

POSTERS – PHARMACY EDUCATION
PE-22

A novel online mapping resource for the recruitment of rural, remote and Indigenous students to the UBC Faculty of Pharmaceutical Sciences

Parkash Ragsdale[1], *Andrew Plowright*[1], *Michael Coughtrie*[1]

[1]*Faculty of Pharmaceutical Sciences, University of British Columbia*

Background: The UBC Faculty of Pharmaceutical Sciences established the Dean's Task Force for Underserved Communities (UCTF) in 2019. The UCTF supports the provision of inclusive and equitable pharmaceutical science and pharmacy education and research, that is accessible to all, in particular those underserved due to geography and/or through membership of an underrepresented population. A particular focus of the Task Force has been to increase recruitment of students to our academic programs from rural, remote and Indigenous communities in BC. Here we describe the creation of a novel online mapping resource to support and inform this effort.

Objective: To augment student recruitment efforts from underserved populations in BC by creating an online data resource that facilitates data analysis, visualization and management.

Methods: Geospatial datasets for high schools, Indigenous enrollment, pharmacies and school districts in BC were acquired from various government agencies. Additional data for post-secondary institutions were collected manually. A custom-built online app was developed using the open-source Leaflet library in JavaScript for visualizing these datasets on an interactive map. Users are able to scale, overlay and modify/select datasets according to key variables such as district, school, total and Indigenous enrollment, etc. Using spatial analysis, pharmacies were indexed according to their proximity to high schools. This also facilitated identification of districts/schools from which the Faculty traditionally does not attract applicants.

Results: The UCTF's interactive app makes data searchable, easy to visualize and provides a useful tool that will remove barriers to accessing our academic programs for students from underserved communities in BC.

Conclusion: This initiative provided an innovative pathway for identifying and prioritizing underserved communities, schools and colleges/universities which the Faculty's student recruitment unit can prioritise for attracting applicants to our academic programs.

POSTERS – PHARMACY EDUCATION

PE-23

Development, implementation and evaluation of a remote medication adherence simulation activity within program year 1 of an entry-to-practice PharmD program

Ali Reza Ladak[1], *Tony Seet*[1], *Georgina Barbour*[1], *Alexander Siy*[1]

[1]*Faculty of Pharmaceutical Sciences, University of British Columbia*

Objective: To describe the development, implementation and evaluation of a remote medication adherence activity for Program Year 1 (PY1) students in UBC's Entry-to-Practice (E2P) PharmD program during the 2020W academic year.

Methods: The 221 students enrolled in PY1 of the E2P PharmD program were informed that they were prescribed a fictional medication to treat an undisclosed medical condition. Students were asked to simulate medication taking by consuming a 250 mL glass of water every eight hours and to track their adherence using a written template or a free phone app. One week later, students discussed their medication taking experiences with a facilitator. Students submitted a post-activity written reflection as part of their portfolio. A total of 219 written reflections were submitted through UBC's learning management system and a convenience sample of 50 reflections were randomly selected and anonymized. Inductive content analysis was used to identify themes.

Results: Analysis of students' written reflections revealed the following. Students gained a better appreciation for the challenges that patients face when taking medications and were able to identify potential causes of medication non-adherence. Students also described the pharmacist's role in encouraging medication adherence and acknowledged the utility of medication adherence apps to help overcome some of the barriers. Instructors found this medication adherence simulation activity easy to administer and had the benefits of being inexpensive and easily accessible for students learning in a remote environment. The activity lacked authenticity as students did not have to swallow a tablet while consuming a glass of water.

Conclusion: Medication non-adherence results in negative health outcomes and significant costs to the Canadian healthcare system. This medication adherence simulation activity provided an opportunity for PY1 E2P PharmD students to experience medication adherence first-hand in a remote learning environment. Next steps include the addition of other activities to increase students' abilities to resolve health-related adherence issues during clerkships.

PE-24

Prevention strategies for psychological distress in students: experience of Laval University

Julie Méthot[1], *Marie-France Demers*[1], *Anne Dionne*[1]

[1]*Faculté de pharmacie, Université Laval*

Background: Pharmacy students have a high level of stress which can contribute to a reduced quality of life and academic performance. It can also contribute to the development of physical illnesses or the development of psychopathologies. Implementing prevention strategies for students psychological distress is part of the Deans action plan initiated in 2020.

Objective: To describe the prevention strategies for psychological distresses that have been put in place within our faculty and present the students' evaluation.

Methods: Since 2020, all the prevention strategies for psychological distresses implemented were compiled. Halfway through the fall semester, students completed a survey using a 5 point Likert scale to assess their level of satisfaction regarding the resources specific to the Faculty of pharmacy.

Results: The first initiative was the implementation of a committee named Phare. It is a support network for pharmacy students by students. Student's representative from each faculty program, volunteer faculty members and one representative of the student help center from the University make up the enlarged Phare committee. The first goal of the committee is to offer mutual aid, to listen and to refer to external resources if needed. Recently, a peer mentoring program matching older students (mentors) with younger students (mentees) for the purpose of guiding and supporting the students was implemented. Our faculty was involved in a pilot project including the services of a support worker for the psychological distresses and well-being of students available for 3 faculties including pharmacy. Its activities include meetings by appointment or prevention trainings. Globally, 67% of students (n=287) are satisfied with the support resources of the Faculty of pharmacy according to mid-fall survey.

Conclusion: Several prevention strategies for psychological distresses have been implemented within the faculty since 2020. Two-third of students are satisfied by the resources of the Faculty of pharmacy. It would be interesting to probe them again later in their program.

POSTERS – PHARMACY EDUCATION

PE-25

Transitioning students from class to practice – A review of institutional practice skills course in entry-to-practice PharmD program

Kayla Fang[1], *Asal Taheri*[1]

[1]*Faculty of Pharmaceutical Sciences, University of British Columbia*

Background: Within the UBC Entry-to-Practice Doctor of Pharmacy (E2P PharmD) program, students undertake 44 weeks of experiential education across four years of training including practicums in the institutional or inpatient setting. The first exposure students get to institutional practicums is during their inpatient Introductory Pharmacy Practice Experiences (IPPE) in the summer of their second year. Prior to their inpatient IPPE, students take a mandatory Institutional Practice Skills course (PHRM 251), a didactic course offered in second year meant to prepare students for their inpatient IPPE.

Objectives: To investigate student perceptions of preparedness for IPPE in the inpatient setting and identify opportunities for improving PHRM 251 – Institutional Practice Skills.

Methods: Qualtrics survey was deployed to second year pharmacy students following their inpatient IPPE to investigate their experiences with PHRM 251 and their experiences on practicum. Quantitative data was collected and analyzed.

Results: The survey had ~20% response rate. Only 15% (N=45) of students who responded reported feeling prepared for their institutional practicums in second year with the majority of respondents citing unfamiliarity with the hospital setting being the primary reason for feeling unprepared. On the other hand, 53% of respondents indicated that PHRM 251 contributed to preparedness for the inpatient practicum. Topics that students noted a desire to learn more about included a pharmacist's role in the inpatient setting, communication with other health care professionals and interprofessional collaboration.

Conclusion: This investigation indicated PHRM 251 assists in preparing students for their introductory inpatient experiences, but it also identified some opportunities for expanding on specific topics, for example including more information on the hospital setting. This information will provide a foundation for further enhancements to the course.

POSTERS – PHARMACY EDUCATION

PE-26

Primary care content in undergraduate pharmacy curricula – a systematic review

Timothy Lim[1], *Jillian Reardon*[1], *Vivian Phan*[1], *Jamie Yuen*[1]

[1]*Faculty of Pharmaceutical Sciences, University of British Columbia*

Objective: Unlike community and hospital pharmacy practice, training opportunities for Canadian pharmacy students seeking a career in primary care are less well defined. A systematic review was completed to assess primary care content in undergraduate pharmacy curricula, with the objective of categorizing exposure and experience types provided to pharmacy students.

Methods: PubMed (1949-2021), MEDLINE (1948-2021) were searched to identify relevant literature. Search terms included: pharmacy, pharmacy student, experiential/placement/rotation, primary care, primary health care and general/family practice. Three independent reviewers screened articles for inclusion using Covidence and Data Extraction 2.0 (v2729, 2022). Inclusion criteria were English-language articles published in Canada, the United States, United Kingdom and Australia that included undergraduate pharmacy students and described or evaluated primary care experiences. All article types were considered eligible for inclusion. Articles were excluded if they focused exclusively on licensed pharmacists and/or interprofessional activities not specific to primary care.

Results: Twenty-seven articles were included for systematic review. Studies were largely evaluation-based or descriptive. The majority were published in the United States from 2014 onwards and included fourth-year undergraduate pharmacy students. Experiences included interprofessional activities, electives, practicums/rotations, student-run clinics and internships. Activities included identifying drug therapy problems and providing recommendations, patient education on disease management and medication counselling, medication reconciliation, case-based group discussions, didactic lectures and clinical shadowing. Four overarching themes were identified; (1) Exposure to primary care was mainly via interprofessional activities and experiential education, (2) Pharmacy students positively impacted patient care in primary care settings, (3) Pharmacy students can be incorporated into existing models of care and (4) Pharmacy student involvement in primary care practice increased self-confidence and role clarity in interprofessional teams.

Conclusion: Opportunities for exposure to and involvement of pharmacy students in primary care practice are inconsistent. Exposure is primarily through experiential education and structured interprofessional activities. Themes identified in this review may inform development of future primary care training opportunities for pharmacy students.

POSTERS – PHARMACY EDUCATION

PE-27

A case study: Assessing changes in student attitudes toward duty-to-care

Roy Dobson[1]

[1]*College of Pharmacy and Nutrition, University of Saskatchewan*

Background: Pharmacy educators play a critical role in promoting attitudes and behaviours that support professional identity formation (PIF), including increased support for duty-to-care. In the fall of 2020, Covid-19 restrictions meant that PHAR 110, a first year course pertaining to health care systems and the role of the pharmacist would be delivered on-line and asynchronously, rather than in person. Prior to Covid-19 restrictions, I would ask my students to complete a four-item pen-and-paper questionnaire in preparation for an in-class discussion of professional ethics regarding the actions of a pharmacist asked to provide a morally objectionable but clinically indicated prescription drug or service. The students were to indicate whether the pharmacist should: actively prevent the patient from receiving; express an opinion regarding; refer the patient to another pharmacist for; or be obliged to provide the drug or service. Student responses were aggregated and presented during the professional ethics class, with each item serving as a starting point for a discussion of personal and societal values as they related to and sometimes conflicted with professional values.

Objective: I sought to determine whether the new on-line, asynchronous format could support student progress in PIF as measured by increased support for the pharmacist's duty-to-care.

Methods: Students were asked to complete an on-line version of the four-item questionnaire prior to the Pharm 110 Professionalism module. I provided the usual course content on-line and asynchronous, but with an increased emphasis on student responses to the questionnaire items. At the end of the module, students were asked to complete a second questionnaire consisting of the same four items.

Results: Compared to the pre-module questionnaire, the responses from the post-module questionnaire indicated a significant change in student attitudes toward duty-to-care.

Conclusion: While the asynchronous format of the class created challenges for both myself and the students, the new on-line technologies provided a way to assess whether the constrained activities of the first year class had the potential to move students toward greater support for the duty-to-care.

POSTERS – PHARMACY EDUCATION

PE-28

Integrating research into the undergraduate Doctor of Pharmacy program

Julie Méthot[1]

[1]*Faculté de pharmacie, Université Laval*

Background: In 2011, Laval University launched an undergraduate Doctor of Pharmacy program (Pharm.D.). The program is built around the development of professional competencies. Some students show a strong interest in clinical research in pharmacy.

Objective: To describe the different opportunities in Pharm.D. program to develop skills in research. To report the proportion of students in the research profile or carrying out research activities in the Pharm.D. program.

Methods: All the opportunities in the Pharm.D. program to develop skills in research were compiled. Statistics concerning the research training of pharmacy students were accumulated.

Results: A research profile is offered to the Pharm.D. students. This 12 credits profile is integrated in the program. It's intended for students wishing to learn about research in pharmacy during their undergraduate studies. They receive training on scientific communication and on writing research protocols. The students carry out exploratory internships within 3 to 4 research teams. Also, the students actively participate in the realization of a scientific project. They must write an abstract and perform a poster presentation at the faculty research day. Around 4% of the students take the research profile. Other clinical research opportunities are present in the program for students who are not in the research profile. Among those, some students (10%) performed a clinical research project as their exploration project during the last year of the program instead of a field project or essays. Some students (40%) take part in a portion of a research project as a 3-week experiential learning on a topic not directly related to pharmacy practice.

Conclusion: Numerous opportunities in the Pharm.D. program are available to develop skills in clinical research including a research profile. A significant number of students are exposed to research during their program.

POSTERS – PHARMACY EDUCATION

PE-29

Decolonization and Indigenization of UBC's faculty of pharmaceutical sciences: literature review and environmental scan

Tamiz J. Kanji[1], Brenda Zou[1], Olivia Burton[1], Elizabeth Stacy[2], Gerald (Gerry) Oleman[3]

[1]Faculty Of Pharmaceutical Sciences and [2]Faculty Of Medicine, University Of British Columbia, [3]Indigenous Elder, Vancouver, British Columbia

Objectives: In response to foundational documents such as the Truth and Reconciliation of Canada's (TRC) Calls to Action and *In Plain Sight* report, pharmacy schools across Canada have embarked on planning and implementing decolonization and Indigenization (D&I) strategies. Our research sought to inform UBC's faculty of Pharmaceutical Sciences approach to best practices in D&I through a literature review, environmental scan and expert interviews.

Methods: Guided by an Indigenous elder to situate and support our exploration in the D&I of health science education, we conducted a literature review, using Ovid Medline and Google Scholar, to explore best practices in faculty and staff education; community engagement; recruitment of Indigenous staff and faculty; as well as curriculum and policies. Key recommendations from expert interviews supporting these major themes include: everyone plays a role in D&I, leadership and accountability must come from the top-level, establishment of long-term quantifiable goals representative to the population (5% target recommended as represented by population in BC), building an understanding of the history of Indigenous peoples in Canada and developing connections with Indigenous peoples by creating space and purpose within the academic setting, for example, inviting Indigenous history to be taught by an Indigenous person.

Conclusion: This work will support the development of future health professionals, trained to engage in culturally safe practice with patients.

PE-30

Population diversity in PharmD program: Mapping of patient cases in skills laboratories

William Boudreau[1], *Francis Richard*[1], *Louise Papillon-Ferland*[1], *Nathalie Dubois*[1], *Ema Ferreira*[1]

[1]*Faculté de pharmacie, Université de Montréal*

Objective: PharmD students are exposed to a variety of clinical situations in skills laboratories. Given the diversity within Canada, students should be exposed to various patient populations during their studies. However, the extent to which they receive this exposure is unknown. The objective was to map skills laboratories patient cases to evaluate students' exposure to different situations.

Methods: A retrospective review of cases in the skills laboratories of the PharmD program (2020-2021) at the Université de Montréal was completed. Information regarding the type of consultation was retrieved. Demographics, drugs, comorbidities, special and vulnerable populations and clinical settings were collected through the patient cases. Descriptive statistical analyses were performed.

Results: Among 321 patient cases, most involved initial prescription dispensing and OTC counselling and only 6 and 19 addressed nonadherence and follow-up, respectively. Mean age was 41 ± 26 (SD), including 68 (21%) below 18 years and 37 (12%) over 75 years. Both sexes were represented equally. Patients were taking an average of 5.5 medications. Only 66 cases (21%) included 2 comorbidities or more which were in the scopes of cardiology, endocrinology, gastroenterology and infectious diseases. Only 28 patients (9%) had a renal function estimated at less than 45 mL/min. No situation included hepatic failure. None of the 21 pregnancies presented were at the third trimester. Caucasians represented 269 of the 302 cases where ethnicity was reported. Heterosexuality was the only sexual orientation explicitly presented.

Conclusion: The mapping of the skills laboratories patient cases highlights the lack of diversity and the gaps in certain areas. More cases involving diverse populations (including 2SLGBTQ+ communities, various ethnicities, third trimester pregnancies), older adults, along with renal and hepatic failures should be included. Patient cases should be revised and regular mapping updates are recommended.

POSTERS – PHARMACY EDUCATION

PE-31

A two-eyed seeing framework for building Indigenous health courses in pharmacy

Jason Min[1], *Jessie Li*[1], *Larry Leung*[1]

[1]*Faculty of Pharmaceutical Sciences, University of British Columbia*

Background: In response to the Truth and Reconciliation Commission's Calls to Action #23 and #24, health programs across Canada, including pharmacy, are integrating content related to Indigenous health and cultural safety. However, there is a paucity of literature on how to respectfully Indigenize health curricula and navigating this challenging domain can be difficult.

Objective: We aimed to develop an evidence-informed and community-engaged framework for creating Indigenous health courses in pharmacy. This project guided the creation of both mandatory and elective Indigenous health courses in the UBC PharmD program.

Methods: A Two-Eyed Seeing Model, incorporating both Indigenous and Western methodologies, was utilized to ensure the framework created was Indigenous-driven, evidence-based and honours reciprocal benefits to Indigenous partners. This collaborative process employed two methods: 1) a scoping review of the literature on better practices in Indigenous health course design across Canada, the US, Australia and New Zealand and 2) deep engagement with an Indigenous Advisory Committee (IAC) for their perspectives on all aspects of course design. The IAC consisted of Indigenous PharmD students, Indigenous community partners and non-Indigenous experts. IAC meetings were semi-structured with guided topics discussed in both large and small groups, allowing for broad discussions. Committee members were iteratively consulted throughout the development and implementation of the framework.

Results: 5 key elements were identified as part of the framework for creating Indigenous health courses in pharmacy: 1) develop and protect Indigenous community partnerships centered on mutual respect and trust, 2) maintain community-university relationships by prioritizing reciprocity, 3) build learning objectives that increase student capacity to work effectively with Indigenous peoples, 4) align course activities with Indigenous pedagogies and 5) pilot innovative assessment models for cultural safety learning that align with Indigenous worldviews.

Conclusion: This framework acts as a foundation for Indigenous-driven and evidence-based curriculum design and can guide health programs across Canada in building Indigenous health courses.

PE-32

A cautionary tale of digital badges

Jason Min[1], *Po Han Chao*[1]

[1]*Faculty of Pharmaceutical Sciences, University of British Columbia*

Objective: While gamification through digital badges has been commonly used as a strategy to engage students in learning environments, the direct impact on class performance is unclear. This study explores the effectiveness of using digital badges and an online leaderboard embedded into the course learning management system (LMS) as a gamification method to improve large-class learning.

Methods: 224 1st year PharmD students were randomized into two groups prior to course launch, each with their own course in the LMS. Group A (intervention) could opt-in for digital badges and an online leaderboard and Group B (control) could not. 10 distinct badges were created and embedded throughout the course, linked to assessments (formative and summative) and earned only if the student scored 100%. Assessments between the groups were otherwise identical. The leaderboard ranked students based on the number of badges received. Students who opted-in to the leaderboard could choose to be de-identified. At the end of the course, an analysis of student performance, digital literacy (using the standardized eHEALS questionnaire) and survey feedback was conducted.

Results: 52% of Group A students opted-in for badges. Participants from Group A stated that the digital badges and leaderboard served as a motivator with 82% satisfaction of the implementation method. No significant difference was observed in eHEALS scores between the two groups. There was also no difference in mean final grades between the groups. Data from the LMS was also analyzed and included student participation and time spent in the course. While most students expressed great interest in future participation, some identified greater anxiety and pressure to achieve badges.

Conclusions: This study is highly relevant as it intersects teaching and assessment strategies with student online engagement and learning outcomes. The findings of this work corroborate the benefits of gamified learning to improved student engagement, but provides a cautionary tale of engagement activities that do not impact final grades and raised new social comparative detriments. Refinement of badge thresholds, incentivization and social pressures are important areas for future exploration.

POSTERS – PHARMACY EDUCATION

PE-33

Lessons learned from developing an innovative and interprofessional opioid poisoning management and prevention program on a university campus

Lisa Dolovich[1], Maria Zhang[1], Laura Fairley[2], Annalise Mathers[1], Ernie Avilla[1], Carlo DeAngelis[1], Sarah Ibrahim[2], Amanda Gin[1], Jonathan Nhan[1]

[1]Leslie Dan Faculty of Pharmacy, University of Toronto, [2]Lawrence S. Bloomberg Faculty of Nursing, University of Toronto

Background: Over 24,000 Canadians have died from opioid poisonings between January 2016 and June 2021. Harm reduction education and access to take-home naloxone kits are key interventions in addressing the current opioid poisoning crisis. This was also identified as a need by University of Toronto (U of T) students and clinicians, resulting in the development of an innovative and interprofessional opioid poisoning management and prevention program. The program comprises of two components: 1) education via one-on-one or group training sessions on stigma related to drug use, drivers of the opioid poisoning crisis and opioid poisoning response; and 2) simulation, in group training sessions, to replicate an opioid poisoning scenario to support healthcare trainees in applying their knowledge of effective management of opioid poisonings. This program has been developed in collaboration with the Faculties of Pharmacy and Nursing at U of T, along with the Discovery Pharmacy, a new, interdisciplinary, accredited community pharmacy, fully affiliated with U of T's Faculty of Pharmacy.

Objectives: To describe lessons learned from developing an innovative and interprofessional opioid poisoning management and prevention program on a university campus.

Results: The following facilitators were identified: 1) a need and interest in harm reduction and naloxone training identified by the U of T community; 2) the presence of existing internal and external infrastructure, personnel and resources readily available to move the topic of naloxone and harm reduction further; and 3) interest and collaboration from multiple disciplines and departments. The following challenges led to significant program refinement: 1) navigating existing provincial and institutional frameworks, processes and policies that govern who and how to access take-home naloxone kits and respond to emergency situations including opioid poisonings on campus; 2) reaching consensus on an ideological framework and core learning objectives; and 3) deciding upon education delivery methods and formats based on the target population(s) and available resources.

Conclusion: In developing a university-wide interprofessional program focused on opioid poisoning management and prevention as a response to needs identified by U of T students and clinicians, facilitators and challenges were encountered and will inform the implementation of this program on university campus.

PE-34

Optimizing online interprofessional case-based learning for all health disciplines involved

Larry Leung[1], *Leslie Guo*[1]

[1]*Faculty of Pharmaceutical Sciences, University of British Columbia*

Background: Case-based learning (CBL) is a well-established method for facilitating interprofessional education (IPE) learning for health professional students. However, challenges are common including sustainability with recruiting facilitators, scheduling amongst programs and maintaining an even interdisciplinary mix of students. Since 2017, pharmacy, dentistry and physical therapy students have been participating in an IPE CBL activity on chronic pain management at UBC, which was recently transitioned online due to the pandemic. The activity includes a 1-hour discipline-specific pre-activity and a 2-hour interprofessional workshop.

Objectives: The objective of this study is to evaluate discipline-specific impacts of the activity on communication and team functioning skills in participants as well as overall perceptions.

Methods: 376 students (222 pharmacy, 54 dentistry,100 physical therapy) participated in the 2021 activity. All students were invited to complete a post-activity evaluation survey which included Likert scale questions, qualitative feedback and the Interprofessional Collaborative Competency Attainment Scale (ICCAS). Using the data, descriptive statistics were analyzed to compare learning outcomes between disciplines. Qualitative data was inductively analyzed to generate common themes.

Results: A total of 182 students participated in the survey (112 pharmacy, 25 dentistry, 42 physical therapy) and there was an overall positive perception of the activity (mean: 4.03/5.0). Qualitative analysis identified 5 key themes regarding learning outcomes: 1) role clarity, 2) collaboration, 3) communication, 4) opioid awareness and 5) complexity of chronic pain. However, when each discipline was analyzed separately, we found that physical therapy students consistently rated the activity lower than other students and demonstrated negative changes to their pre-post ICCAS scores. Students felt overshadowed and struggled to collaborate with the team.

Conclusion: Our findings demonstrate that while CBL facilitates positive impact on interprofessional collaboration competencies, not all healthcare disciplines may have the same learning experience. Further development of IPE CBL activities should consider strategies to mitigate these imbalances.

POSTERS – PHARMACY EDUCATION

PE-35

How pharmacists perceive their professional identity

Jamie Kellar[1], Zubin Austin[1], Tina Martimianakis[2], Cees van der Vleuten[3], Mirjam oude Egbrink[3]

[1]Leslie Dan Faculty of Pharmacy, University of Toronto, [2]Faculty Medicine, University of Toronto, [3]School of Health Professions Education Maastricht University

Objectives: The objectives of this scoping review were to (a) explore how pharmacists perceive their professional roles and identities and (b) describe factors impacting which professional roles or identities pharmacists embody in different pharmacy practice settings.

Methods: A scoping review using a deductive approach was undertaken for this study. Systematic searches were conducted in five databases: Ovid MEDLINE, Ovid EMBASE, Ovid PsycINFO, EBSCO Cumulative Index to Nursing and Allied Health and Scopus (Elsevier). Key words searched included pharmacist, identity, professional role and one variations of these. Results were double-blind screened for relevance by two authors. Data extraction was facilitated by the web-based software platform COVIDENCE. Foucauldian critical discourse analysis was used to deconstruct how pharmacists perceive their professional roles and identities.

Results: In total, 21 701 articles were retrieved in the search. Following de-duplication and screening, 23 studies from 11 different countries were included. Five major identity themes were identified: Clinician, Dispenser, Business Person, Patient Counsellor and Physician Supporter. The dispenser identity was the most widespread, but it was viewed by many pharmacists as undesirable. The clinician identity also had a strong presence but was viewed as an identity that pharmacists aspire to embody.

Conclusion: This scoping review illustrates that pharmacists do not uniformly perceive themselves to be clinicians. A significant gap exists between the profession's desired identity and that embodied by practicing pharmacists. The resulting dissonance may be a contributing factor to the lack of wide-scale practice change that the profession has been seeking for decades.

POSTERS – PHARMACY EDUCATION

PE-36

Webinar-based training for pharmacy practice educators

Janice Yeung[1], *Neelam Dhaliwal*[1], *Gabriella Wong*[1], *Amy Jradi*[1]

[1]*Faculty of Pharmaceutical Sciences, University of British Columbia*

Objective: To optimize student practicum experiences, the Faculty strives to prepare practice educators (PEs) through training and ongoing education. In a previous evaluation of PE resource accessibility and uptake, gaps were identified for those at a geographic distance from the University. This project sought to increase accessibility across British Columbia (BC) through the development of online webinars.

Methods: Four pre-implementation steps were completed to inform webinar design: environmental scan identifying Canadian pharmacy programs or UBC health disciplines utilizing webinars as a PE development tool; literature review determining how live webinars effectively prepare PEs for their role; survey of PEs garnering their experiences, needs and preferences with respect to training; and evaluation plan. The first, 90-minute Zoom webinar held September 2020 utilized a panel-style format and encouraged attendees to submit pre-webinar questions for discussion. A second 60-minute Zoom webinar was held January 2021, with two guest speakers and facilitated small-group discussions. Feedback was solicited for each webinar through post-webinar evaluation surveys; quantitative and qualitative analyses were conducted. Pre-webinar registration and session attendance information was also utilized for analysis.

Results: The four pre-implementation steps informed the design of the first and second webinar. These two webinars welcomed 87 PEs in total, with 40 identified as participating from outside the Lower Mainland. Feedback from the post-webinar evaluation surveys for both webinars was overwhelmingly positive (e.g., 37 of 39 respondents from the first webinar agreed/strongly agreed that the presentation met their educational needs). Qualitative data from the first webinar also indicated the topics supported respondents' learning goals. These webinars established foundational processes for hosting subsequent pharmacy PE training webinars including determining topics, speaker format and evaluation.

Conclusion: These two webinars were well-received and nearly half of the attendees included the target audience located at a distance from the university. Subsequent work endeavors to continue engagement across BC using webinars, thereby ultimately impacting the quality of student experiential learning.

POSTERS – PHARMACY EDUCATION

PE-37

A novel instructional media for accessible teaching and education (ANIMATE)

Alex Tang[1], *Lucy Zhou*[1]

[1]*Faculty of Pharmaceutical Sciences, University of British Columbia*

Background: UBC Entry-to-Practice PharmD students attend mandatory orientation sessions in advance of their practicums and these sessions were traditionally delivered via lecture-driven instruction. Based on feedback and direct observation, students were widely disengaged and felt that the sessions did not appropriately prepare them for their practicums.

Objective: This project seeks to transform our current pedagogical approach to improve student engagement, accessibility and practicum preparedness through the following objectives: (1) create eleven stop-motion animation videos using an animated pedagogical agent (APA) called Dr. Tablet; (2) disseminate videos as an open-educational resource on the "OEE Student Toolbox for Practicums" website and; (3) evaluate student impact through surveys and focus groups.

Methods: To evaluate the impact of these videos, data were collected via pre- and post-surveys and two video-recorded focus groups. A thematic analysis with an inductive approach was used to analyze the focus group transcripts.

Results: Prior to the implementation of the animated videos, pre-survey results suggested that 24% (22/90) of students strongly agreed/agreed (SA/A) that the practicum orientation lectures appropriately prepared them for practicums and 11% (10/90) of students SA/A that the lectures were engaging. After the videos were implemented, post-survey results suggested that 78% (32/41) of students SA/A that they felt more prepared for practicums and 97% (40/41) felt that the videos were engaging, clear and easy to understand. The focus groups (N = 5) suggested the following: (1) the use of an APA enhanced student engagement; (2) students preferred animated videos combined with lecture-driven instruction; (3) short videos of 3 to 9 minutes were deemed appropriate; (4) videos were accessible and; (5) video topics were relatable to students and deemed appropriate.

Conclusion: Students found the video content to be concise, relevant and accessible via the OEE Student Toolbox for Practicums website. Creating and using an APA, such as Dr. Tablet, can be an effective and engaging teaching strategy to prepare students for practicums, especially with the rise of online learning.

POSTERS – PHARMACY EDUCATION

PE-38

Utilizing near-peer teaching in a pharmacy community service learning course

Tristan Lai[1]

[1]*Faculty of Pharmaceutical Sciences, University of British Columbia*

Background and objective: Near-Peer Assisted Learning (NPAL) is a teaching and learning model in which senior students teach junior students. NPAL shows tremendous benefits for both junior and senior students but it is not routinely integrated into pharmacy classroom-based learning. This project sought to develop an exploratory framework that integrates NPAL model into a hybrid didactic-experiential course in the UBC Entry-to-Practice (E2P) Doctor of Pharmacy (PharmD) program.

Methods: A professional year (PY) three UBC E2P PharmD student was recruited and assigned the role of Community Engaged Learning (CEL) Fellow in a mandatory PY2 community service learning course. The CEL Fellow provided administrative and academic support to the coordination and delivery of the three course domains: 1) service-learning practicums, 2) in-class sessions and 3) critical reflection. Two incentivized surveys consisted of Likert-scale questions were distributed to students and community partners to evaluate their perception of the CEL Fellow. Surveys results were collected through Qualtrics.

Results: Forty-four students (19% response rate, n=230) and seven community partners (19% response rate, n=37) completed the surveys. Feedback gathered from students indicated CEL Fellow conveyed course content effectively and enhanced student knowledge. 80% of students who had undergone the self-placement process rated the CEL Fellow favorably for their role in supporting students and facilitating effective communications between students and community partners.

Conclusion: NPAL was successfully piloted in a pharmacy community service-learning course. The CEL Fellow provided administrative and academic assistance across the three course domains and students had favorable perception of the role. This exploratory framework may facilitate the implementation of the NPAL model in other pharmacy courses.

POSTERS – PHARMACY EDUCATION

PE-39

Cultural and contextual dimensions of wellbeing

Gilles Leclerc[1], Nathalie Dubois[1], Simon de Denus[1], Isabelle Boisclair[1], Myriam Grefford[1], Joannah Valma[1], Ema Ferreira[1], Marie-France Beauchesne[1]

[1]Faculté de pharmacie, Université de Montréal

Background: Well-being is defined as the state of balance between a person's resources and challenges that must be overcome. In each context, some dimensions may be more conducive to achieving this state of balance. Failure to include these dimensions in an evaluation could affect validity and reliability and lead to misinterpretations and unsound decisions.

Objective: Describe how cultural and contextual characteristics of educational programs and student populations should be considered in the development of student self-reported wellbeing measurement scales.

Method: Literature reviews were conducted to understand the concept of wellbeing and to determine which cultural dimensions to consider in diverse educational contexts. An iterative process engaging leadership team in both PharmD program and International Pharmacy Graduate program (IPGP) led to the development of two distinct self-reported wellbeing scales. The measurement scales were tested with both populations. The conceptual and psychometric adequacy of both scales was examined by principal component analysis.

Results: PharmD wellbeing scale was administered three times (February, April and October 2021; 30% response rate) and pre-tested once with IPGP students (June 2021). IPGP students' low participation rate (12%) students led to an adaptation of the wellbeing scale based on specific cultural and contextual characteristics. Social and academic acculturation dimensions were inserted in the IPGP scale. Items were dropped, added, or modified. Format and presentation were slightly changed. Revised IPGP wellbeing scale was administered early March 2022 with a 96% response rate. Analysis for PharmD and IPGP scales conceptual and psychometric adequacy were performed leading to an adjustment of both scales. Full results and proposed scale adjustments will be presented.

Conclusion: When inquiring student wellbeing, understanding the cultural dynamic of a specific educational context helps selecting relevant and instrumental dimensions. Previous reliability and validity assumptions should be challenged and caution is warranted before administering a wellbeing measurement scale to a new population, or in a new educational context. A team-based iterative process provides a suitable setting to revisit such assumptions.

POSTERS – PHARMACY EDUCATION

PE-40

Observing teaching and student engagement to improve curriculum alignment with competency-based education

Gilles Leclerc[1], Marie-Elaine Métras[1], Louise Papillon-Ferland[1], Claude Dagenais[1], Isabelle Boisclair[1], Nathalie Dubois[1], Ema Ferreira[1]

[1]Faculté de pharmacie, Université de Montréal

Background: Competency-based education (CBE) was adopted by the International Pharmacy Graduate Program (IPGP). CBE demands commitment to learner-centered approaches, educational scaffolding and collaborative practices. Training and supportive measures were provided to teachers. How CBE was internalized and translated into classroom and online practices remains undetermined.

Objective: To explore how observing teaching and in and out of the classroom student engagement can guide alignment with CBE and enhance teachers commitment and perseverance.

Methods: Based on literature, instrument and procedures were developed to observe in-class teaching and student engagement. An independent observer stand-in two 3-hour classes of a first-semester special population 1-credit course with three different professors. Teaching techniques, teachers' intentions, learning tasks and students behaviors were systematically noted. Online student engagement was analyzed through LMS data recording and extraction to report timeline of students' online interactions with learning tasks, resources and interactions. Results and CBE alignment feedback were discussed with teachers and IPGP leadership team.

Results: Both classes were teacher centered. The first class focused on interactive lecturing in sequence rather than collaboratively. Student engagement came from reactivation of prior knowledge, answering questions, or confirmation of understanding. The second class was teacher-led case solving, contextualization and sharing clinical pearls. Student engagement was limited to reactivation of prior knowledge and questioning. Overall, in-class active learning was limited to one 5-minute teamwork session and three 5-minute polling rounds. Scaffolding was provided through in-class case resolution modeling and online formative assessment. Online chat participation was sparse. Monopolizing students, unsolicited conversations and digital distraction were classroom management challenges. The observer requires a steady attention span and is subject to interpretation biases.

Conclusion: Translating CBE into classroom and online practices demands dedication and support. While not exempt from bias, in and out of class observation provide relevant data on CBE alignment. Persistent logistic challenges can affect the validity of observation for program quality improvement.

POSTERS – PHARMACY EDUCATION

PE-41

Framing curriculum on guiding principles

Gilles Leclerc[1], Isabelle Lafleur[1], Nathalie Letarte[1], Ema Ferreira[1], Simon de Denus[1], Nathalie Dubois[1], Véronique Provencher-Tom[1], Marie-France Beauchesne[1]

[1]Faculté de pharmacie, Université de Montréal

Background: Pharmacy education is expected to be responsive to the evolving social and professional needs, to keep pace and, even more so, to drive advancement. Such increasing demands make it complex and challenging to maintain alignment, relevance and balance in pharmacy curricula. Framing curriculum improvement based on guiding principles could provide structure to meet expectations, to refine alignment, relevance and balance and to sustain curriculum improvement.

Objectives: This study will discuss the benefits, challenges and limitations of implementing guiding principles to frame curriculum improvement and future program revision.

Methods: Guiding principles were draft, communicate and validate with PharmD's educators. A comprehensive review of the literature was used to conceptualize guiding principles and to highlight the relationships and dependencies between them. This vision of guiding principles was then subsequently tested during a 3-step PharmD curriculum analysis process.

During this process, educational material was reviewed and mapped, student workload was measured, pharmacy educators were interviewed and, finally, the guiding principles was used to frame the evaluation of curriculum alignment, coherence and balance.

Results: Implementing guiding principles requires agreement on a definition, their rationale, the goals to be achieved and their relative importance. Our experience suggests that developing a common vision and a shared way of operationalizing the guiding principles requires time, participative leadership, a willingness to meeting expectations for continuous improvement and a desire to co-construct the curriculum through sustained collaboration. Strategies to meet those needs, to reduce the discrepancies in the views and values that each member of the program team has of the guiding principles and to improve their level of awareness, knowledge and understanding are in development.

Conclusion: Framing curriculum around guiding educational principles allows to build a shared vision of a curriculum. It sets the stage for rich and revealing debates. An open-mindedness culture is an essential condition to maintaining everyones commitment and to undertaking far-reaching curricular reforms.

POSTERS – PHARMACY EDUCATION

PE-42

University of Waterloo school of pharmacy contributions to COVID-19 Vaccination

Nancy Waite[1], *Andrea Edginton*[1], *Kelly Grindrod*[1]

[1]*School of Pharmacy, University of Waterloo*

Objective: As pharmacist educators, we have a duty to prepare our students for current patient care needs as well as future pharmacist roles in an evolving health environment. This abstract outlines our efforts during the COVID vaccination campaign.

Methods: Our faculty and staff were involved early in the pandemic with the Waterloo Region Vaccine Task Force and affiliated regional and provincial working groups. The presence of pharmacists was instrumental in establishing the School and our local pharmacist community as active players in the vaccine rollout.

Results: Increasing Vaccine Confidence: Pharmacy5in5 was quickly engaged in vaccine information tools. Other health care professionals, organizations, municipal governments and community groups were soon downloading the material (23,000 views, over 10,000 downloads) with significant uptake on social media. Research grants from NSERC and PHAC are now supporting broader and more in-depth community engagement and infographic development and dissemination.

We partnered with our neighbours, the Centre for Family Medicine Family Health Tem and Waterloo Regional Public Health to host the Health Sciences Campus COVID Vaccination Clinic in our building (78,000+ doses over 6-months). The pharmacy was run by our faculty, staff and students, with many UW members participating as volunteers, clinic staff and immunizers. Further asks by Public Health included vaccine prep and administration in long-term care/retirement homes, local pharmacies, pop-up clinics and a 10,000 dose weekend clinic. Further faculty-led research is being done as a result.

In 2020, we called on co-op supervisors to act as trainers/evaluators so students could complete their practical injection training. In 2021, curricular modifications were made to ensure first year students had injection training prior to entering their first co-op work term. The strong presence of pharmacy throughout this pandemic has prompted the need for additional human resources, as evidenced by our most recent Spring 2022 co-op process where there were 3.4 jobs posted per student.

Conclusion: The School's culture of being of, as opposed to in, our Waterloo Region community was never more apparent and allowed us to quickly connect with our partners and contribute to the COVID vaccination effort.

PE-43

How well do we do well-being in pharmacy education across the U.S. and Canada?

Cheryl Sadowski[1], Beth Buckley[2], Simi Gunaseelan[3], Benjamin Aronson[4], Anandi Law[5]

[1]Faculty of Pharmacy and Pharmaceutical Sciences, University of Alberta, [2]Concordia University Wisconsin School of Pharmacy, [3]Texas A&M University College of Pharmacy, [4]Ohio Northern University Raabe College of Pharmacy, [5]College of Pharmacy, Western University of Health Sciences

Objective: This study was initiated to understand the landscape of Well-Being content within pharmacy programs. A survey was developed by members of the American Association of Colleges of Pharmacy (AACP) Well-Being and Resiliency Community to identify the implementation, incorporation and assessment of Well-Being across schools and colleges of pharmacy (S/COP) in the United States (U.S.) and Canada.

Methods: This cross-sectional study used an electronic survey design and a framework of eight dimensions (pillars) of wellness: emotional, environmental, financial, intellectual, occupational, physical, social and spiritual, to categorize content delivery. The Curricular Overview survey was sent to all accredited S/COP in the U.S. (n=143) and Canada (n=10). Survey items included curricular and co-curricular content questions about the place, timing, frequency, methods of delivery, assessment strategies employed and support for and potential barriers to Well-Being within the S/COP cultures.

Results: Descriptive data analyses were applied to 99 completed surveys (65%). A majority of respondents (59%) were from established (>25 year) programs, with a single campus (76%) and a class size ranging from 51-150 (76%). Well-Being content was most prevalent within the co-curricular realm of the pharmacy programs and incorporated primarily into the didactic and electives. Intellectual, Emotional and Physical pillars were the most commonly covered by programs, while financial, spiritual and environmental pillars were least covered. An equal percentage of respondents (37%) had a dedicated person or committee to oversee student Well-Being initiatives. Less than 50% of S/COP include Well-Being within their strategic plans or core values. Funding for Well-Being initiatives was either at the University (59%) or S/COP (58%) levels. Assessment of Well-Being was conducted by nearly half the responding S/COP but they reported needing more expertise, time, training and standardization.

Conclusion: This survey of S/COP in the U.S. and Canada found an environment of adopting well-being programs with a range of implementation and assessment. Factors for establishing sustainable programs were identified and included a positive overall culture of Well-Being, institutional support, intentionality, reinforcement, role-modeling, dedicated champions, student interest and access to adequate space, time, experts and training. Survey results serve as a call to action and research across the academy.

PE-44

Impact of online seminar course on pharmacy student career decisions and understanding of the pharmacist role

Larry Leung[1], *Nicoline Bihelek*[1]

[1]*Faculty of Pharmaceutical Sciences, University of British Columbia*

Background: Due to the Covid-19 pandemic, a first-year course designed to expose students to career opportunities in pharmacy was transitioned online. This presented new challenges for exposing students to different roles and engaging students with guest speakers.

Objective: To evaluate the impact of a first-year online seminar course with respect to if: (1) there was a change in student understanding of the pharmacist role; (2) there was a change in student career goals.

Methods: A mixed methods approach was utilized including a post-course survey and follow-up semi-structured interviews to evaluate the impact of four first-year seminar course components on student understanding of pharmacist roles and career choices: (1) Online lectures, which included guest instructors representing different practice sectors; (2) Podcast interviews of practicing pharmacists; (3) individual assignments; (4) virtual group discussions. Quantitative data were reported as proportions or frequencies, with Likert-scale questions transformed to continuous data to enable comparisons. Qualitative data was analyzed using a thematic approach.

Results: There was a total of 80 participants in the survey and 5 student interviews. Prior to the course, 60% of students had no career goals. Following the course, 72% had a career goal and 57% of students changed their goal; interest grew for clinical, primary care and industry roles. Students were confident in their ability to describe the roles of the pharmacist and guest lectures ranked as having the highest impact. Qualitative analysis of both open-ended questions and student interviews revealed 3 key themes reflecting the course's value to students: (1) Role clarification – students were unfamiliar with the scope of pharmacist roles prior to the course; (2) Day-in-the-Life – students wanted details on day-to-day pharmacist responsibilities; (3) Clinical Practice – students were interested in clinical pharmacy but had difficulty defining clinical roles.

Conclusions: Following an online seminar course, students demonstrated improved understanding of pharmacist roles and broadened career interests. Interest especially grew for clinical pharmacist roles. Guest lectures remained impactful despite online delivery.

POSTERS – PHARMACY EDUCATION

PE-45

Developing a PharmD dashboard for evaluation and continuous improvement

Nathalie Dubois[1], Ema Ferreira[1], Nathalie Letarte[1], Simon de Denus[1], Myriam Grefford[1], Marie-France Beauchesne[1], Gilles Leclerc[1]

[1]Faculté de pharmacie, Université de Montréal

Background: A dashboard was developed to assess the progress of the Pharm. D. priorities and academic objectives. The dashboard includes indicators selected for their ability to shed light on different aspects of the educational program in a reliable and valid way.

Objectives: Describe the steps to develop the dashboard. Reflect on the methodological opportunities and challenges of identifying, developing and monitoring performance indicators in a context of co-construction.

Methods: The critical evaluation will be based on analysis of the resources invested, the relevance of the performance model, the quality of the indicators and the satisfaction of the stakeholders. The evaluation is based on the combination of data from surveys, interviews and workshops with leadership team, stakeholders and experts.

Results: Based on a participatory evaluation approach, the educational progress dashboard was developed in 5 stages. 1) Determination of needs with Pharm. D. leadership team; 2) Literature review to identify quality components and performance indicators; 3) Interviews with stakeholders to clarify information needs and availability/quality of data in institutional databases; 4) Development of the dashboard by importing, processing and presenting the available data on a dynamic and flexible structure and; 5) Definition of the targets for the program objectives (indicators identified).

The dashboard provided several methodological lessons. Firstly, the participatory and co-construction process was time-consuming. Secondly, the promotion of a culture of expertise limits the ability of organizations to carry out construction projects. Thirdly, data collected by the institution represents a small part of the needs expressed by stakeholders. Fourthly, tracking data on program implementation, student experience and academic outcomes is relevant and useful for decision-making. Finally, stakeholders must be involved to establish objective targets and to promote the use of the dashboard.

Conclusions: The implementation of an academic progress dashboard is a complex task. The development of a set of indicators is a delicate exercise. It requires the use of different sources of data and the buy-in of the program team. Once implemented, the dashboard is useful to have an overview of the achievement of program objectives and priorities.

PE-46

Not so special: The vagueness of "special populations"

Cheryl Sadowski[1], Michelle Deng[1], Jasmine Mangrum[2], Nkem Nonyel[3], Aleda Chen[4], Lea Eiland[5], Judith Beizer[6], Teresa DeLellis[7]

[1]Faculty of Pharmacy and Pharmaceutical Sciences, University of Alberta, [2]University of Washington School of Pharmacy, [3]School of Pharmacy & Health Professions, University of Maryland Eastern Shore, [4]Cedarville University School of Pharmacy, [5]Auburn University Harrison School of Pharmacy, [6]St. John's University College of Pharmacy and Health Sciences, [7]Manchester University College of Pharmacy, Natural & Health Sciences

Objectives: The term "special populations" is commonly used in healthcare literature and education to describe certain populations such as pediatrics or geriatrics that have unique needs. However, there is no set definition of what makes a population "special". The purpose of our research was to explore what populations are currently considered "special" in order to provide guidance on utilizing the term "special populations" in education and practice.

Methods: A search in medline was conducted for any english language article from inception until may 2021 containing the term "special population" in its title. The websites of american, canadian and international health organizations were also searched for any pages, publications, or policies containing "special population". Details about groups identified as being a "special population" were extracted and compiled.

Results: Of the 553 articles found on medline, descriptions of "special population" were extracted from 501 articles. Of the 37 health-related organization websites searched, descriptions were available for extraction from 14 sites. These descriptions were grouped into one of five themes: medical factors, age factors, physiological factors, social factors, or miscellaneous, with medical factors being the most common theme used in publications. Pediatrics, geriatrics and race/ethnicity factors were among the three most common uses of "special population".

Conclusion: This review of health literature as well as health organizations has shown that there is no consensus on the definition of "special population". Currently, the term "special populations" is being used in literature to describe any specific subsets of populations with little or no rationale. More research will be needed to explore the need and purpose for "special population" or alternative terminology.

POSTERS – PHARMACY EDUCATION

PE-47

Deprescribing education in medicine, nursing and pharmacy: A scoping review

Cheryl Sadowski[1], Alexi Yuzwenko[1], Brian Chow[1], Liz Dennett[2]

[1]Faculty of Pharmacy and Pharmaceutical Sciences, University of Alberta, [2]University of Alberta Libraries

Objectives: Despite recommendations that deprescribing be intentionally integrated into healthcare curricula, there is no universal syllabus or framework for teaching deprescribing. The purpose of this scoping review was to describe the literature regarding deprescribing and how it is currently being taught in the three health professions involved in most prescribing decisions.

Methods: This scoping review was conducted using the 5 step model first introduced by Arksey and Omalley. The databases searched include Medline, Scopus and Embase, to May 2021. Papers were included if they were in English, contained an educational intervention about deprescribing tailored toward physicians, pharmacists or nurses, or commentaries containing expert opinion on deprescribing education.

Results: A total of 2538 studies were screened; 239 papers underwent full text review. Extraction was conducted on 39 papers including 21 peer reviewed publications, 14 conference presentations and 4 expert opinion/white papers. The studies were from 10 different countries. Twenty-six of the studies delivered group education and 2 had 1-on-1 teaching. Only 8 studies had a control group. Seventeen studies focused on physicians, 10 on pharmacy and only 3 on nursing, yet 2 of the 4 expert opinions focused on nursing education. Increase in learner self-efficacy and increase in learner knowledge were most commonly measured outcomes. Less than half of the studies measured a decrease in medication.

Conclusion: There is international interest in studying the education of deprescribing. The studies were generally lower quality, with no control group and very short period of follow-up. There is evidence that learner knowledge is increased after brief educational interventions for deprescribing. Further research is required to determine the impact of educational interventions on deprescribing in practice.

PE-48

Mapping of drug interaction instruction within a doctor of pharmacy curriculum

Heather Kertland[1], *Bassmah Mosharraf*[1], *Sama Abdulnabi*[1], *Marjaan Alam*[1]

[1]*Leslie Dan Faculty of Pharmacy, University of Toronto*

Background: In practice, pharmacists deal with drug interactions daily. This requires them to have a decision-making framework to integrate drug and disease state knowledge.

Objective: To explore how this knowledge and skill is developed, we mapped learning objectives related to the identification, analysis and management of drug interactions in the non-experiential curriculum of the University of Toronto Doctor of Pharmacy program.

Methods: Following a literature review, eleven learning objectives that encompassed the required knowledge and skill were developed. A survey was created and sent via email to coordinators of courses that were identified to teach material related to drug interactions. Coordinators were asked to identify which of the objectives was taught and assessed. The responses were mapped by term and year and ranked using Bloom's taxonomy and the ICE model.

Results: A total of 25 required, elective and selective courses were identified as having content related to drug interactions. To date, responses have been received for 21 /25 courses. While foundational knowledge (e.g, pharmacology, pharmacokinetics) is covered within the first two terms of the curriculum, students are also expected to analyze and evaluate drug interactions in a similar timeframe. It was found that third year courses expected students to understand and apply knowledge as well as evaluate. Two learning objectives were only covered in one or two courses. Analysis of the assessment of learning responses is ongoing.

Conclusion: The teaching of drug interactions related content does not appear to be delivered in a manner that optimally supports the student's learning of this complex topic. A more coordinated approach may better support the critical thinking that is required to identify, analyze and managed drug interactions.

PE-49

Perceptions of online community-based student projects: Building sustainability and reciprocity with Indigenous partners

Larry Leung[1], *Emma Young*[1], *Jason Min*[1]

[1]*Faculty of Pharmaceutical Sciences, University of British Columbia*

Background: It is well-established that community-based learning (CBL) is an effective strategy for students to gain hands-on learning experiences with partners. However, in-person CBL can be demanding on community and Faculty resources, capacity and time. The purpose of this research is to evaluate an innovative online deployment of Indigenous community-based student projects from the perspective of students and community partners.

Methods: Three online community-based projects were piloted in a 3rd-year pharmacy elective with two partnering remote Indigenous communities. To ensure reciprocity with partners, a community-based participatory action research (CBPAR) framework was developed and utilized to identify community projects, onboard students and partners and conduct an evaluation of the process. A mixed-methods approach to evaluation, including pre- and post-project surveys and semi-structured interviews, was utilized and analyzed to determine student learning impact and community partner satisfaction.

Results: A total of five students and four community partners participated throughout the evaluation. Qualitative analysis identified two key impacts for student learners from the community-based projects: 1) a shift in perspective on the importance of including Indigenous viewpoints while working with the community and Indigenous peoples and 2) improved understanding and application of cultural safety. All community partners expressed positive experiences collaborating with university partners and students in various stages of the CBPAR framework. Key highlights include the importance of community participation in student assessment and the desire for more time with the students. The sustainable nature of project deployment has also led to expansion of the class size and number of projects to 13 and five respectively in 2022.

Conclusion: The immersive nature of community-based learning allows students to enhance cultural learning. In-person community-based learning is difficult to replicate online, but our findings suggest that a positive impact on student learners can be achieved. Community partner satisfaction and positive feedback demonstrate the effectiveness of our CBPAR framework in implementing projects. Online delivery allows for sustainable engagement with geographically dispersed communities and increases project capacity for future iterations.

POSTERS – PHARMACY EDUCATION

PE-50

Student reported preparedness in leadership and professional service management post capstone course in social and administrative pharmacy

Tatiana Makhinova[1], *Michelle Deng*[1]

[1]*Faculty of Pharmacy and Pharmaceutical Sciences, University of Alberta*

Background: A new PharmD course was delivered with the intention of integral approach to behavioral, administrative, social and evidence-based pharmacy. The main focus of the course was a capstone project where students designed, planned and evaluated a new pharmacy service through applying previously and concurrently learned concepts (such as business planning, program evaluation, management, leadership, etc.) and collaborating with practicing pharmacist partners.

Objective: The objective was to explore the effectiveness of a newly introduced capstone course in social and administrative pharmacy and provide insight on the course strategies for developing leadership and management skills in pharmacy students.

Methods: A secondary analysis was conducted on pre and post-course questionnaire data collected from third year PharmD students and mentors. Frequency and mean scores of responses to statements regarding confidence on leadership, management and collaboration skills scored on the Likert scale were presented. Students' and mentors' open-ended comments were also grouped and summarized to review the effectiveness of the capstone course.

Results: For all statements regarding confidence, the majority of students answered either agree (statements ranged from 40-69%) or strongly agree (statements ranged from 6-56%). Students also showed a significant increase in confidence of management skills after completing the course. Student comments and feedback regarding the course were grouped and discussed within three major categories: content, timeline/organization and group dynamics.

Conclusion: Students found value in the active learning style of the capstone course and were able to utilize the course to enhance their leadership, management and collaboration skills. From this exploration into the course, we have also found several implications for the future iteration of the course and considerations for any instructor who may be planning a capstone course as part of their own teaching.

PE-51

Geriatric undergraduate pharmacy education : Mapping of skills laboratories

Louise Papillon-Ferland[1], *Valerie Castonguay*[1], *Cheryl A. Sadowski*[2]

[1]*Faculté de pharmacie, Université de Montréal,* [2]*Faculty of Pharmacy and Pharmaceutical Sciences, University of Alberta*

Background: Older adults provide unique challenges in delivering pharmaceutical care. Skills laboratories are a mandatory component of pharmacy curriculum and therefore they represent an important opportunity to increase student exposure to geriatric cases and related issues.

Objective: To describe geriatric cases included in skills laboratories of an undergraduate pharmacy program.

Methods: A retrospective review of all case-based 2018-2019 skills laboratories (years 1-3) from the Pharm D. program of the Faculty of Pharmacy of University of Montreal was conducted. Laboratory sessions of patient cases aged 65 years and older were selected for analysis. Content was extracted for characteristics relating to the patient, health, medications and context of care.

Results: 108 skills laboratories were reviewed that included a total of 210 cases. Patients aged 65 years and older represented 51 cases (24% of cases), 8 cases (3.8% of all cases) were patients aged 80 years and older. Geriatric syndromes were present in 4 patient cases. Functional status was available for 10% of cases and mobility described for 12%. The median number of comorbidities and medications were 4 and 7 respectively. Ten patient cases included more than 10 medications and none included more than 15 medications. Potentially inappropriate medications were present in 24 of geriatric cases (47%) but were specifically discussed in 7 cases only.

Conclusions: Very old patients and geriatric problems were present in a minority of patient cases included in pharmacy skills laboratories. Cases including older adults were incomplete for characteristics related to geriatric care. This mapping of skill laboratories from an undergraduate pharmacy program highlights areas of improvement to increase pharmacy students exposure to geriatric cases and related issues.

PE-52

Two-stage examinations: An approach to determining the ratio of individual and group results in the composite score

George Pachev[1], *Andrea Busse*[1], *Vindya Attanayake*[1], *Dion Zhai*[1]

[1]*Faculty of Pharmaceutical Sciences, University of British Columbia*

Background: The two-stage exam format involves students answering the questions on a test individually, followed by group-work on the same test and answering the questions as a group. This format aims at improving learning by fostering discussion and exchange of ideas at the group stage. It is, however, unclear how to best combine the individual and group marks in the composite score if the results from both stages are to be used for grading.

Objectives: To explore the feasibility of an empirical approach to determining the ratio of the individual and group marks in the composite mark of a two-stage exam. The approach seeks to maximize precision of the final marks by modeling the composite reliability of the test for different ratio-scenarios.

Methods: The data records from a couple of two-stage quizzes from Infectious Diseases curriculum module were analyzed. Means and standard deviations of each stage of the test and correlations of the two stages for each quiz were obtained. Cronbach's alpha was used to estimate the reliability of the individual and group stages. The two tests' reliability of the composite was estimated with a method that takes into account the individual reliabilities of the parts, their weights and their correlations. The method was applied to eight ratio-scenarios varying by increment of 5 and starting from individual/group ratio of 60/40.

Results: The pattern of performance on the two exams was similar: individual performance in the sixties, group performance in the nineties and low correlations between the two components. For each quiz, reliability of the composite peaked at the 80/20 ratio and either remained constant or dropped slightly down.

Conclusion: The results illustrate the viability of the approach to composite reliability for addressing the problem of assigning weights to the parts of the two-stage examinations. The consistency of the results across two quizzes is encouraging. Note, however, that this consistency supports the approach, not the particular optimal ratio obtained. For quizzes on different subject matter and with different number of items, separate studies may be needed to recommend a specific ratio.

POSTERS – PHARMACY EDUCATION

PE-53

Building diverse cases studies: A description of cases used in an advanced therapeutics course

Cheryl Sadowski[1], *HyeBin Cho*[1]

[1]*Faculty of Pharmacy and Pharmaceutical Sciences, University of Alberta*

Objectives: The purpose of this research was to describe the diversity of patients represented within an advanced therapeutics course and to provide guidance on future case development. There were 3 objectives for this study, including (1) create a case study TEMPLATE, (2) create a FRAMEWORK for integrated case studies involving therapeutics and population characteristics and (3) APPLY the framework to the case studies used in an advanced therapeutics course to ASSESS DIVERSITY.

Methods: The 14 cases used in the Pharm 448 (Advanced Therapeutics and Special Populations) course at the University of Alberta for the winter 2021 term were included. A database for case characteristics was compiled using the outline for cases previously distributed at the Faculty and resources from therapeutics textbooks. The written cases were mapped for characteristics relating to patient, case context, medical conditions/disease and types of drug related problems. Based on the cases mapped the features required were compiled into a checklist to create a framework for future case development.

Results: The 14 cases included 8 pediatrics, 3 adults and 3 geriatrics populations. Young adults were not represented in any cases. Chronic illness was present in the majority of cases, but mental health was not included in any pediatrics cases and disability was absent from adult cases. Vulnerable populations were represented in single cases, some examples being incarceration, single parent, rural/remote setting and requiring social assistance. Only one case explicitly listed Indigenous heritage; no other cases mentioned race or ethnicity. Financial stressors were included in 4 cases. Ethical considerations were explicitly addressed in only 1 case involving withholding care; abuse was integrated into 1 pediatrics and 1 geriatrics case. All adult and geriatrics cases included a cardiac disease. The template for future cases included 16 areas for diversity.

Conclusions: Cases from one offering of a pharmacy course show that the written content of cases included the most diverse context within the pediatrics and geriatrics populations, but many areas of diversity were not explicitly included across the entire collection of cases. A case development tool may provide prompts to build cases intentionally with greater diversity.

POSTERS – PHARMACY EDUCATION

PE-54

Developing a patient safety culture training curriculum for healthcare professionals

Eulaine Ma[1], *Certina Ho*[1], *Wei Wei*[1]

[1]*Leslie Dan Faculty of Pharmacy, University of Toronto*

Objectives: There is a paucity of patient safety culture training materials for regulatory or health professional bodies to apply across a diversity of healthcare settings. Our project is aimed to develop a translatable patient safety culture curriculum to support a multi-disciplinary provincial regulatory authority in Manitoba in advocating patient safety culture and leading province-wide patient safety initiatives.

Methods: We adopted the first three steps of Kerns six-step approach to curriculum development by defining goals and objectives of a patient safety culture curriculum for healthcare professionals. A structured search in MEDLINE, EMBASE and a grey literature search, with support from a faculty liaison librarian, was performed to find relevant guiding documents from patient safety organizations, including those in the United Kingdom (UK), Canada, United States (U.S.), Australia and New Zealand. We identified websites of regulatory authorities and policy institutes with a mission on patient safety, then located relevant documents on these sites via targeted Google search. Materials were synthesized through extracting overlapping competencies relevant to patient safety culture.

Results: We identified patient safety guiding documents from the UK (National Health Service), Canada (Canadian Patient Safety Institute), the U.S. (Institute for Healthcare Improvement) and the World Health Organization. A curriculum with five core competencies and 21 learning objectives, ranging from Organizational Culture, Just Culture, Safety Improvement and Evaluation, to Information Sharing and Transparency, Safety Leadership, was developed. We adopted Bloom's taxonomy and segregated the learning outcome domains into knowledge, skills and attitude in the resulting Patient Safety Culture Training Curriculum for Healthcare Professionals.

Conclusions: Our curriculum, which was presented to key stakeholders of patient safety in Manitoba, can serve as a primer for subsequent application, training evaluation and continuous quality improvement for operationalization at a site or across a jurisdiction through interprofessional collaboration. The area of patient safety culture education is one that calls for further concerted efforts and innovations from all health professions and global jurisdictions.

POSTERS – PHARMACY EDUCATION

PE-55

A virtual interactive case system innovation to support pharmacist prescribing for minor ailments

Certina Ho[1], Stephanie Lau[1], Eulaine Ma[1], Qiqi Lin[1], Joo-Young[1], Maaria Arif[1], Christina Truong[1], Nashita Tabassum[1], Song Min Lee[1], Annie Yao[1], Gordon Tait[2]

[1]Leslie Dan Faculty of Pharmacy, University of Toronto, [2]Department of Surgery, University of Toronto

Objectives: Virtual interactive cases (VICs) have been used as an educational resource for differential diagnosis training in medical students, but they have not been explored in pharmacist prescribing for minor ailments (PPMA). We aimed to share our experience and lessons learned in the development of three VICs to support PPMA.

Methods: We created PPMA VICs on allergic rhinitis, conjunctivitis and cold sores as a pilot project. Through iterative case writing, reviewing and transcribing to the VIC online environment, we recognized the benefits and challenges when attempting to fully utilize the built-in functionalities of the platform.

Results: When developing the patient assessment component of VICs, we had to embed 10% relevant or essential questions that a VIC user should ask to rule in or rule out a differential diagnosis. We included one correct and 6-10 incorrect diagnosis statements to challenge the user on differential diagnosis of each minor ailment. When managing the minor ailment, the user should be presented with only 30% appropriate interventions, including pharmacologic and self-care options. It is important to note that a VIC user would be able to solve the case scenario with the correct minor ailment diagnosis if all statements and questions were inspected during patient assessment, but costs and time associated with irrelevant actions taken would be reflected in the VIC final debriefing, implying that such clinical encounter was not practically and logistically feasible or affordable in a real pharmacy practice setting.

Conclusions: Pharmacists are not traditionally trained in performing differential diagnosis. Creating the extra irrelevant patient assessment components, the incorrect diagnosis statements and inappropriate management options was quite challenging. While the VICs are not meant for educating nor training PPMA, the VIC environment is a safe and user-friendly platform to support and challenge pharmacist knowledge and skills in providing minor ailment prescribing service.

PE-56

Patient or medication safety training: An opportunity for virtual interactive case system innovation

Eulaine Ma[1], Certina Ho[1], Amy Botross[1], Wei Wei[1], Gordon Tait[3], Christy Mak[1], Sonya Dhanjal[2], Annie Yao[1]

[1]Leslie Dan Faculty of Pharmacy, University of Toronto, [2]School of Pharmacy, University of Waterloo, [3]Department of Surgery, University of Toronto

Objectives: Current literature on virtual cases illustrates increased student self-directed learning and satisfaction. The Virtual Interactive Case (VIC) System allows educators to create online clinical reasoning scenarios, bridging theory and practice. Our project is aimed to share our experience in the development and evaluation of three VIC teaching modules on patient/medication safety.

Methods: We created VIC training modules on medication incident disclosure, root cause analysis (RCA) and failure mode and effects analysis (FMEA). Based on Kirkpatricks four-level training evaluation, we designed a 16-item online evaluation questionnaire and administered to pharmacy students and practitioners in Ontario from May 22, 2020, to June 8, 2020, to seek their feedback to our patient/medication safety VIC teaching modules. We asked about their knowledge, skills and anticipated practice changes that may occur after experiencing our teaching models.

Results: Most of our 18 respondents had 1-5 years of practice experience. Their practice settings ranged from associations, academia, to community pharmacies and hospitals. Respondents found the VIC platform easy to navigate. They perceived the content to be relevant and easy to implement in patient care settings. Most respondents reported with confidence when carrying out incident disclosure, RCA and FMEA at their practice settings.

Conclusions: The VIC System can be used to educate health profession students and practitioners on patient/medication safety. VIC is a safe and user-friendly platform to support patient safety in virtual care.

POSTERS – PHARMACY EDUCATION

PE-57

How to promote learner engage through observation in immersive simulation?

Marie-Laurence Tremblay[1]

[1]*Faculté de pharmacie, Université Laval*

Background: In immersive simulation, students often observe their peers perform a task. Different forms of instructional guidance can be provided to enhance the learning experience for observers and engage them with the simulation task. It is still unclear how different types of instructional guidance can turn the observational phase into an active learning experience for novices. This mixed-method study aims to understand similarities and differences between use of collaboration scripts and checklists by observers in terms of cognitive load and learning outcomes.

Methods: Second-year pharmacy students (N=162) were randomly assigned to one of four conditions when observing a simulation: collaboration scripts (heuristic to analyse in dyads while observing), checklists, combination of collaboration scripts and checklists, or no guidance. We measured observers' intrinsic and extraneous cognitive load (ICL and ECL), self-perceived learning and knowledge through questionnaires and conducted focus group interviews.

Results: Collaboration scripts imposed the highest ICL (mean 5.3/10) because collaborating and co-constructing knowledge with a peer seemed more complex. Checklists, which generated the lowest scores of ICL (4.0/10), were perceived as a simple fact-checking exercise. ECL scored significantly higher when both tools were combined (2.6/10), although scores remained very low in all four conditions. Observing the simulation, with or without guidance, was a meaningful learning experience resulting in moderate scores of self-perceived learning (5.4/10). Observers obtained good scores at the knowledge tests after tasks (6.9/10) and debriefings (7.3/10).

Conclusions: With or without guidance, observers are actively engaged with the simulation, but their effort differed depending on the tool they used. Collaboration scripts or checklists do not impose high ECL. When choosing between these two tools, educators should be guided by learners' characteristics and the type of simulation task.

PE-58

"I'm overwhelmed": Perceptions of student workload

Marion Pearson[1], *Heather Brodoway*[1]

[1]*Faculty of Pharmaceutical Sciences, University of British Columbia*

Objectives: Academic workload is a common stressor for students and contributes to surface approaches to learning. Studies show weak correlation between hours of study and perceptions of workload. Other factors such as learning environments, teaching methods, assessment strategies, curricular structure, institutional resources and personal situations play a significant role. Few studies explore workload in pharmacy programs or instructors' perceptions. Accordingly, this study aimed to address the research questions i) What factors contribute to perceptions of student workload in the UBC PharmD Program? Ii) What are the similarities and differences between student and faculty perceptions? Iii) Are there any modifiable factors relating to student workload in the program?

Methods: Data collection for this qualitative study was guided by an academic workload framework based on a literature review. Following pilot testing, student (n=10) and faculty (n=9) volunteers participated in semi-structured interviews supplemented with arts-based inquiry via a drawing and writing activity. Interview transcripts were analyzed inductively and deductively. Visual data from the drawing and writing activity were analyzed inductively, aided by reference to the written component.

Results: In the interviews, students identified amount of curricular content as the main contributor to their workload. Many of their drawings highlighted external factors, e.g., extracurricular activities, family and friendships and depicted short timeframes, e.g., a day, a week, or a term. In contrast, faculty spoke of pedagogical aspects of workload, e.g., teaching styles and assessment strategies. Their drawings focused on curricular components, in some cases for the entire four-year program, with little reference to external factors. Both groups considered the workload acceptable but worth reducing. Students requested more brief formative assessments and study guides, while faculty suggested reducing didactic content, reducing assessments and increasing integrative learning opportunities.

Conclusions: This small-scale study suggests students have a more holistic but short-term view of factors contributing to academic workload, whereas faculty have a curriculum-centric, long-term view of student workload. To support student success and wellbeing, the suggestions made for decreasing academic workload in the PharmD program should be explored further.

POSTERS – PHARMACY PRACTICE

PP-1

Investigating community pharmacy-based naloxone programs and program interventions: a scoping review

Ashley Cid[1], *Micheal Beazely*[1], *George Daskalakis*[1], *Kelly Grindrod*[1]

[1]*School of Pharmacy, University of Waterloo*

Background: Due to the continuing rise in opioid related deaths, there has been a growing emergence of community pharmacy-based naloxone programs. There is a need to investigate the variety of programs and interventions being offered to support future research designs in implementing and evaluating programs that target pharmacist and patient knowledge gaps and lift barriers for current suboptimal community pharmacy naloxone provision.

Objectives: The objective of this scoping review is to summarize the available literature on community pharmacy-based naloxone programs, including specific program interventions that have been used to increase naloxone dispensing, naloxone availability and dispensing patterns, any facilitators and barriers for optimal naloxone program performance and any knowledge gaps that exist regarding naloxone programs.

Methods: Online databases such as PubMed, EMBASE, Scopus, International Pharmaceutical Abstracts and the grey literature were used to find eligible sources. All sources were screened and compared by two reviewers for eligibility in COVIDENCE software. A data extraction form was developed and used by both reviewers to compile the results.

Results: Fifty-two sources met the eligibility criteria. The top barriers for optimal naloxone distribution were cost/coverage of naloxone, stigma and education/training for pharmacists. Program interventions included screening tools, checklists, pocket cards and patient brochures. Patient knowledge gaps involved misinformation and lack of awareness, while pharmacists had administrative, clinical and counselling related knowledge gaps. Naloxone availability was found to be variable and harder to access for populations with high rates of opioid overdoses, and/or those accessing independent and/or rurally located pharmacies.

Conclusion: This review illustrated that community pharmacy-based naloxone programs are growing in number and that the implementation and evaluation of these programs are an expanding area of research. Future efforts should focus on implementing naloxone and continuing education programs that combat the barriers, knowledge gaps and access to naloxone identified in this study.

POSTERS – PHARMACY PRACTICE

PP-2

Implementation of a pharmacy-based intervention for patients with uncontrolled asthma

Rébecca Fénélon-Dimanche[1], Claudie Turcotte[1], Catherine Lemière[2], Marie-France Beauchesne[1], Bachir Abou-Atmé[1], Isabelle Chabot[1], Lucie Blais[1]

[1]Faculté de pharmacie, Université de Montréal, [2]Faculté de Médecine, Université de Montréal,

Background: Achieving optimal asthma control is challenging, despite the availability of effective treatments. Community pharmacists can play an important role in the management of patients with uncontrolled asthma.

Objective: To test the feasibility of implementing a pharmacy-based intervention to identify patients with uncontrolled moderate to severe asthma and provide patient's support.

Methods: We used a prospective cohort design to evaluate the feasibility of implementing the intervention. The measurement of indicators of implementation such as the number of patients who completed the different steps of the intervention was completed. The intervention plans a structured face-to-face consultation between the patient and the pharmacist in order to measure asthma control with the Asthma Control TestTM (ACT), to identify the cause of uncontrolled asthma and assist the patient accordingly and to set goals for a follow-up consultation with the pharmacist 3 months later. Surveys were used to assess pharmacists' and patients' satisfaction with the intervention. Level of asthma control was measured at baseline and 6 months after the intervention.

Results: The intervention was implemented by 11 pharmacists and 20 patients had the first consultation with their pharmacist. Fourteen patients were found to have uncontrolled asthma and 13 patients completed the study. The two most common causes of uncontrolled asthma were poor adherence to controller medications (70 %) and comorbidity (57 %). Among the 14 patients with uncontrolled asthma at baseline, 7 had a follow-up consultation 3 months later, 8 had asthma control measured 6 months post-intervention and 7 of them had controlled asthma (88 %). The analysis of asthma control at baseline (mean ACT = 17.8 ± 4.9, n= 13) and 6 months post-intervention (mean ACT = 22.1 ± 2.3, n= 13) showed a significant improvement (p-value = 0.007). Pharmacists reported that the intervention had a positive impact on the progress of their patients' asthma control. However, the COVID-19 pandemic made the implementation difficult because of patients' and pharmacists' desire to limit interactions and pharmacists' lack of time to intervene.

Conclusion: The intervention adapted to pharmacists' practice and needs was found efficacious to improve asthma control, but the COVID-19 pandemic limited its implementation.

POSTERS – PHARMACY PRACTICE

PP-4

A cost-utility analysis of naloxone dispensing from community pharmacies in Canada

Ashley Cid[1]*,Nikita Mahajan*[1]*, William W.L. Wong*[1]*, Michael A. Beazely*[1]*, Kelly Grindrod*[1]

[1]*School of Pharmacy, University of Waterloo*

Background: The opioid crisis grows exponentially each year in Canada, particularly during the COVID-19 pandemic. Naloxone, the antidote for opioid-induced respiratory depression (OIRD), is publicly funded across Canada in the intramuscular (IM) format, but the intranasal (IN) format, which is more expensive, but easier to administer, is not publicly funded in all provinces. The effectiveness of naloxone in reducing ORID related mortality has been demonstrated, however, no economic evaluation of pharmacy-based naloxone distribution for either format has been conducted in Canada.

Objectives: To conduct a cost-utility analysis of both IM and IN naloxone distributed through community pharmacies in Canada.

Methods: A Markov model with an integrated decision tree for pharmacy-based distribution of both IN and IM naloxone was developed. We simulated distribution of naloxone every 3 years to illicit opioid users, prescription users, opioid-agonist therapy (OAT) users and non-opioid users. Scenario analysis of distribution to only illicit, prescription and OAT users was also conducted. One-way sensitivity analysis and microsimulation using a Monte Carlo simulation was also performed. A monthly cycle length, lifetime horizon (120 years) and government perspective were used. Costs (2020) and quality-adjusted life years (QALY) were discounted at 1.5% annually.

Results: Distribution of both IM and IN naloxone were cost effective with a willingness to pay threshold of 140,000 per QALY. One way sensitivity analysis determined distribution to illicit opioid users to be the most cost effective.

Conclusion: Distribution of IM and IN naloxone to all Canadians every 3 years is deemed to be cost effective. Distribution to illicit opioid users alone is even more cost effective and prevents more overdose deaths. This study is important for each province and territory in Canada to consider, as more OIRD deaths can be prevented through the public funding of IN naloxone kits where it is not currently publicly funded.

POSTERS – PHARMACY PRACTICE

PP-5

USask Chronic Pain Clinic phase I evaluation

Katelyn Halpape[1], Derek Jorgenson[1], Anan Ahmed[1], Isobel Johnston[1], Jennifer King[1], Kelly Kizlyk[1], Eric Landry[1], Radjika Marwah[1], Taylor Raiche[1]

[1]College of Pharmacy and Nutrition, University of Saskatchewan

Background: One in five Canadians experience chronic pain. Saskatchewan residents have limited access to interdisciplinary chronic pain management. The Medication Assessment Centre Interprofessional Opioid Pain Service (MAC iOPS) was established in 2020 to fill this gap. The MAC iOPS is a pharmacist-led interdisciplinary chronic pain clinic at the College of Pharmacy and Nutrition, University of Saskatchewan (USask). The MAC iOPS team includes pharmacists, social workers, physical therapists and a chronic pain physician. Services can be delivered virtually or in-person.

Objective: To assess the effectiveness of the MAC iOPS.

Methods: This evaluation includes: 1) retrospective chart audit of MAC iOPS patients, 2) survey of MAC iOPS patients and 3) survey of referring healthcare professionals. USask Research Ethics Board approval was obtained.

Results:

Table 1: Chart Audit (n=103)

Mean age of patients (years)	57 (range 22-87)
Opioid use at baseline (n)	75/103 (72.8%)
Patients transitioned to buprenorphine/naloxone (bup/nal) (n)	5 (4.9%)
Mean morphine daily dose reduction for patients remaining on opioids (excluding bup/nal) (%)	14.2% (233mg/day to 200mg/day)
Clinical Global Impression-Severity (CGI-S) Score Change	4.1 (moderately ill) to 3.4 (mildly ill)
Naloxone Kits Provided	11

Table 2: Survey Results

Patient Survey (n=26, response rate 33%)	
Overall health status much improved or improved	62%
Very satisfied or satisfied with MAC iOPS	96%
Health Profession Survey (n=21, response rate 34%)	
Recommend MAC iOPS to colleagues	100%
Strongly agree/agreed that consult letters from MAC iOPS were helpful	100%
Were more confident in prescribing opioids after having their patient come to MAC iOPS	52%
Were more confident in managing chronic pain after having their patient come to MAC iOPS	71%

Conclusion: Through provision of pharmacist-led interdisciplinary chronic pain management, the MAC iOPS has improved the overall self-reported health status of people referred to the clinic, which is a difficult outcome to achieve for people with living with chronic pain. The MAC iOPS also objectively improved patient function (i.e., CGI-S scores), while reducing the risk of negative outcomes from opioid use (i.e., lower opioid doses, switching opioids to buprenorphine/naloxone, providing naloxone kits). The service has also been well received by patients and referring health professionals.

POSTERS – PHARMACY PRACTICE

PP-6

Supporting self-governance of medication practices in a remote Indigenous community

Larry Leung[1], *Jason Min*[1], *Idaylia Swanson*[1]

[1]*Faculty of Pharmaceutical Sciences, University of British Columbia*

Background: Indigenous peoples of Canada have self-governed since time immemorial, but Canada's past and present history of colonialism has dismantled traditional governing systems. In response, there has been an ongoing shift to return power back to communities, allowing each Nation to develop their own self-governing jurisdictions related to internal and local affairs, including healthcare and medication practices.

Objectives: To collaborate with one remote, Indigenous community in British Columbia on: 1) The exploration of community-identified needs for policies and existing legislative procedures to govern medication practices and 2) the co-development of a comprehensive policies manual for medication practices to support self-governance.

Methods: A community-based participatory action research framework was used to ensure research was Indigenous-driven, grounded in community needs and action-oriented. It was conducted in four phases: 1) Interviews with healthcare providers and community members to identify opportunities and challenges related to current medication practices, 2) Scan of legislative procedures governing safe medication use, 3) Qualitative analysis to develop general themes and updated medication policies and 4) Creation of a tangible, comprehensive manual.

Results: To honour First Nations Principles of Ownership, Control, Access and Possession, all results were anonymized or de-identified. A total of 16 community partners participated in the interview process and thematic analysis identified three key policies required for improving medication practices in the community: 1) medication ordering, 2) dispensing and administration of medications and 3) medication disposal. Identified opportunities for improvement include better clarity on remote nursing scope of practice, simplified ordering procedures, treatment algorithms and educational materials related to safe medication disposal. Examination of existing western legislation resulted in several competing policies and procedures used for medication practices, which poses significant challenges for self-governing communities.

Conclusions: This action research highlights the disconnect between standard legislative procedures and practical applications for self-governing communities. Utilizing both community-specific and existing legislative standards allowed for the development of unique medication practices specific to one self-governing Indigenous community.

PP-7

Parent and healthcare providers preference factors, decision-making and knowledge on medication use during lactation: a Canada-wide survey study

Uma Yakandawala[1], Christine Leong[1], Lauren Kelly[2]

[1]College of Pharmacy, University of Manitoba, [2]Dept. of Pharmacology and Therapeutics, University of Manitoba

Background: Decision-making around medication use during lactation is often a challenge for both birthing parents and healthcare providers (HCP) due to limited evidence-based information.

Objectives: To understand preference factors, knowledge and decision-making of Canadian parents and HCP regarding medication use during infant feeding with human milk.

Methods: Two separate online surveys were disseminated to (1) birthing parents (2) HCP over a three-month period. Participants were recruited through advertisements and social media. The surveys collected demographic information, participant's attitudes and preference factors, decision-making factors and knowledge regarding medication use during infant feeding.

Results: There were 149 parent and 47 HCP that completed the surveys at the one-month time point. Within three months post-partum (N=141/149,94.6%) of the participants had fed directly from the breast/chest. Majority (N=138/146,94.5%) of the parents in this study used a medication postpartum. Almost half (N=72/146,49.3%) of the participants had changes in their medications within six-months of giving birth. Over half (N=68/124,54.8%) of the parents found decision-making on medication use while nursing to be difficult and very few parents felt certain about what to do when making decisions (N=11/124,8.8%). Parents ranked the leading factor impeding decision-making to be lacking information about options, benefits and risks of medications. HCPs role in parents' decision-making included sharing the decision with parents (N=19/29,65.5%) and providing support/advice for parents to make the decision on their own (N=17/29,58.6%). HCPs listed their training on medication use during lactation as being below average (N=9/29,31.0%) and extremely poor (N=9/29,31.0%). HCPs stated reliable resources, improved patient resources/pamphlets and more education on medication safety would help them better support parents' decision-making.

Conclusion: Parents' decision-making process on medication use during lactation and HCPs role in parents' decision-making was evaluated. Parents and HCPs would benefit from improved educational material and reliable sources for information on medication use during lactation. Finding from this study suggests a shared decision-making tool could be beneficial for clinical practice.

POSTERS – PHARMACY PRACTICE

PP-8

Pharmacogenomic considerations in proposed COVID-19 treatment and management: A systematic review

Dalia Hamdy[1], *Jennifer Young*[1]

[1]*Faculty of Pharmacy and Pharmaceutical Sciences, University of Alberta*

Background: COVID-19 was declared a global pandemic in 2020, it has caused an unprecedented healthcare crisis with high morbidity and mortality . The SARS-CoV-2 virus continues to overwhelm existing healthcare infrastructure nationally and globally and many existing small molecules have been repurposed for its treatment.

Objectives: A scoping literature search was conducted to study possible PGx applications in COVID-19 treatment and management.

Methods: Five research questions related to possible PGx applications in currently repurposed COVID-19 treatment molecules doses, current treatment protocols and PGX recommendations level of strength were formulated. Twenty keywords for search were developed and five data bases Medline, EMBASE, Scopus, CiNAHL and Cochrane were searched. Inclusion criteria included English peer-reviewed literature published within the relevant time period of January 2019 to April 2021. Five COVID-19 treatment protocols from Canada, USA, Egypt and Qatar were also collected.

Results: Out of the 376 citations extracted, 14 articles fulfilled the inclusion/exclusion criteria, 10 review articles, 2 retrospective cross-sectional analyses and 2 letters to the editor. The following drug categories antimalarials, antivirals, corticosteroids, macrolides, interferons as well as genes CYP2D6, CYP2C8, ABCB1, SLCO1B1, SLCO1B3, CYP3A5,CYP2C9, CYP2C19, MDR1, IL28B, were identified as the most with potential actionable PGX interventions discussed. Only five strongly evident PGX lead interventions were suggested that included hydroxychloroquine, ribavirin, atazanavir/ritonavir, NSAIDs and corticosteroids. The rest of the potential medications discussed still require further studies and evidence.

Conclusion: PGx guidelines do not have strong evidence to guide current COVID-19 therapy management for repurposed drugs but it has great potential that requires further investigation.

PP-9

Peripartum mental health and the role of the pharmacist: A scoping review

Randilynne Urslak[1], Nardine Nakhla[1], Colleen J Maxwell[1], Charity Evans[2]

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

Background: The global prevalence of peripartum mental illness (occurring from conception to one year postpartum) is 20%, though estimates have increased considerably since the start of the COVID-19 pandemic. Chronic medical conditions (CMCs) impact one in five pregnancies and may be associated with higher rates of peripartum mental illness. Pharmacists are well-positioned to provide education to patients on the safe and effective use of drug and non-drug therapies to optimize co-occurring mental and physical health outcomes.

Objectives: To understand the current evidence supporting the role of Canadian pharmacists to improve the outcomes of women with peripartum mental illness, with and without CMCs.

Methods: A scoping review was performed with assistance from an interdisciplinary team following the Joanna Briggs Institute framework. MEDLINE, EMBASE and International Pharmaceutical Abstracts databases were searched with assistance of a research librarian. English-language articles (published up to January 2022) were screened and assessed for eligibility and data were charted to collate results, by dual independent reviewers.

Results: The search strategy produced 502 articles. After screening, 9 articles were included (5 narrative reviews, 4 primary research). None were published or conducted in Canada and only two included pharmacists as study participants. There was limited discussion about the opportunities (accessibility, managing stigma, patient-pharmacist relationships) and barriers (lack of privacy, time constraints, adequate remuneration, training) for an expanded role of pharmacists in peripartum mental health care. The clinical complexity arising from co-occurring mental health and CMCs was not explored, other than a pilot study involving pharmacists screening for depression among pregnant women with diabetes.

Conclusions: This review highlights the limited evidence available on the explicit role of pharmacists in supporting women with peripartum mental health and concurrent CMCs. More research, including pharmacists as participants, is required to fully understand the potential roles, barriers and facilitators of integrating Canadian pharmacists to improve the outcomes of women in the peripartum period.

POSTERS – PHARMACY PRACTICE

PP-10

Pharmacy practice research for urinary incontinence in older adults: Insights into pharmacist participation

Cheryl Sadowski[1], Julia Vu[1], Yazid Al Hamarneh[2]

[1]Faculty of Pharmacy and Pharmaceutical Sciences, University of Alberta, [2]Faculty of Medicine and Dentistry, University of Alberta

Objectives: Pharmacists are frontline healthcare primary care providers who see older adults frequently. Evidence supporting their interventions in chronic diseases is well supported in the literature. A trial in Alberta was designed to evaluate pharmacist intervention to address urinary incontinence. However, recruitment has been a challenge. And so, we conducted a narrative review to understand the challenges of pharmacy practice research and describe its barriers and facilitators.

Methods: A systematic search was conducted on MEDLINE, EMBASE and Scopus to identify relevant published literature on community pharmacists' attitudes and experiences with practice research, as well as the barriers and facilitators to participation from database inception to May 2021. Data extraction and thematic analysis were performed by the main author in consultation with co-authors.

Results: A total of 35 studies from 11 countries were included. Studies used a variety of methods such as questionnaires, interviews, and/or focus groups. Main drivers for participation included improving patient health outcomes, advancing the profession, satisfying a personal interest in research and solidifying therapeutic knowledge. Main barriers included time, inadequate staffing, lack of remuneration, self-perceived incompetence, patient skepticism and corporate/physician resistance. Pharmacist characteristics were also found to impact engagement.

Conclusion: In addition to the 'usual' barriers, i.e. time, staffing and lack of reimbursement, our review uncovered 'new' barriers specific to pharmacists, researchers and stakeholders (e.g. physicians) that influence participation. The findings of this review has informed the research team to develop a new engagement strategy, recruitment of frontline resources in the pharmacies and an increase in empathy for pharmacists during COVID.

POSTERS – PHARMACY PRACTICE

PP-11

An environmental scan of patient safety reporting and learning systems in community healthcare for multi-disciplinary teams

Wei Wei[1], *Certina Ho*[1], *Eulaine Ma*[1]

[1]*Leslie Dan Faculty of Pharmacy, University of Toronto*

Objectives: Patient safety reporting and learning systems (RLSs) are increasingly employed globally as a tool for continuous quality improvement in healthcare. Although multi-disciplinary RLSs are widely used in hospitals, little is known about their use in community care. Collaborating with the Manitoba Alliance of Regulatory Health Colleges (MARHC), we aimed to identify multi-disciplinary, community-based RLSs that have been implemented in other jurisdictions and discuss lessons learned to inform the implementation of a similar patient safety initiative in Manitoba.

Methods: We conducted an environmental scan in formal and grey literature. The formal literature search was performed on OVID MEDLINE and EMBASE databases, with titles and abstracts of journal articles screened. The grey literature search involved identifying websites and publications from regulatory authorities and policy institutes with a mission on patient safety and personal communication with subject matter experts. Inclusion criteria include the RLSs being community practice-oriented and reporting being done by two or more health professions.

Results: We retrieved 629 articles from our formal literature search. RLSs meeting our inclusion criteria were identified in the United Kingdom, British Columbia (Canada), Spain and the United States. Under-reporting of safety incidents was observed, with barriers of reporting associated with subjectivity in defining errors, lack of time, feedback and organizational support and the fear of blame and punishment. We also identified facilitators of reporting, such as, an enhanced feedback mechanism, education- and training-centric nature of reporting and ensuring confidentiality and anonymity. Many of these factors indicated the importance of an established safety culture for adequate user engagement of RLSs.

Conclusions: The MARHC will benefit from lessons learned that were shared by the various RLSs identified to inform the future endeavour of a multi-disciplinary, community-based patient safety initiative province-wide. Healthcare providers' knowledge, training and appreciation of patient safety initiatives (like the RLSs) and an established in safety culture among practitioners, are crucial prerequisites for successful user adoption, engagement and operation. Undergraduate training and continuous professional development present various opportunities for healthcare providers to acquaint and have early involvement in quality improvement and patient safety efforts.

POSTERS – PHARMACY PRACTICE

PP-12

Development and evaluation of an online pocket guide to quality improvement

Wei Wei[1], *Certina Ho*[1], *Corlissa Chan*[1], *Eulaine Ma*[1]

[1]*Leslie Dan Faculty of Pharmacy, University of Toronto*

Objectives: Continuous quality improvement empowers healthcare professionals to optimize patient safety and quality care. Our project is aimed to develop and evaluate an infographic-based online Pocket Guide to Quality Improvement (PGQI).

Methods: We consulted various national and international resources for training healthcare professionals on QI and consolidated into a concise and infographic-based online pocket guide. We pilot tested the PGQI to a convenience sample of pharmacists and pharmacy students in Canada and administered a 14-item online survey to gather their user experience of the PGQI during a four-week period in October 2021.

Results: We developed an infographic-based online PGQI, which outlines key concepts in QI, including defining quality, identifying a quality gap, applying systems thinking and QI tools (e.g., root cause analysis, model for improvement, plan-do-study-act cycles). The PGQI is a resource to educate pharmacists and pharmacy students on QI. A total of 20 responses were collected from our user experience online survey. The respondents' primary practice was diversely located in community, hospital, administrative and regulatory colleges, with representation from six provinces. The length of time to review the PGQI ranged from five to 15 minutes. Users found the materials relevant and easy to understand. Notably, 70% respondents perceived a significant increase in QI knowledge after viewing the PGQI; 90% would recommend the PGQI to other healthcare professionals; and 65% respondents were interested in planning a QI project in the next 12 months. Many respondents appreciated the effective use of graphics, charts and visuals to explain and illustrate QI concepts. They suggested to include external resources for further reading, examples/elaborations of QI tools and case scenarios.

Conclusions: The PGQI effectively presented QI concepts in an easy-to-read format. Our pilot testing revealed that the PGQI can be easily accessible and utilized by pharmacists and pharmacy students who wish to learn more about defining, planning and conducting a QI project.

POSTERS – PHARMACY PRACTICE

PP-13

The SMART pharmacist podcast: Medication safety learning anywhere anytime

Wei Wei[1], *Certina Ho*[1], *Jim Kong*[2]

[1]*Leslie Dan Faculty of Pharmacy, University of Toronto,* [2]*School of Pharmacy, Universiy of Waterloo*

Objectives: The recent engagement of pharmacy regulatory authorities across Canada to improve medication safety culture in pharmacies via medication incident reporting and shared learning has demonstrated a national interest to take steps to prevent errors and patient harm. Medication safety learning through podcast will provide pharmacy professionals with a dynamic and engaging educational resource that can be accessible anywhere anytime. The objective of the SMART Pharmacist Podcast was to create as a virtual resource for pharmacy professionals to learn more about contemporary topics in medication safety.

Methods: We developed a series of five educational podcast episodes on different patient/medication safety-related topics, from the aftermath of an incident, medication incidents associated with students, to compounding errors and drug-drug interactions in older adults. We released the episodes on SoundCloud and iTunes and administered a 12-item online questionnaire to pharmacy professionals across Canada to obtain feedback from listeners.

Results: A total of 13 responses were collected within a month. Respondents practiced in Ontario, Nova Scotia, Saskatchewan and New Brunswick. Responses with respect to the accessibility, information accuracy/validity, relevance of information to pharmacy practice and scope/coverage of information of the podcast were generally very positive. Respondents perceived the podcast episodes to contain information that has an impact on pharmacy practice and that the medication safety recommendations presented are feasible and effective.

Conclusions: The SMART Pharmacist Podcast is an accessible, evidence-based educational resource that can be utilized by any healthcare professionals who wish to learn more about effective and feasible (i.e., SMART = Specific, Measurable, Attainable, Relevant and Time-based) medication safety prevention strategies.

POSTERS – PHARMACY PRACTICE

PP-14

Regulatory body disciplinary action: What do pharmacists, dentists and nurse practitioners get in trouble for?

Ai-Leng Foong-Reichert[1], *Sherilyn Houle*[1], *Kelly Grindrod*[1]

[1]*School of Pharmacy, University of Waterloo*

Objectives: The objective of this study is to determine the causes and consequences of disciplinary action for pharmacists, dentists and nurse practitioners in Canada by identifying the reasons for discipline and penalties applied and identifying differences in discipline across professions, provinces and demographics.

Methods: Regulatory body disciplinary action cases for pharmacists, dentists and nurse practitioners from 10 Canadian provinces were obtained. Cases were either publicly available online or were obtained through the regulator by request. Demographic information such as gender, years since graduation and practice setting/specialty were obtained from the disciplinary case or from the online register of professionals maintained by the regulator. Cases were coded to identify the reason for disciplinary action, penalties applied and demographic factors.

Results: There were 1025 cases from 10 provinces that occurred between 2010 –2020. Specifically, there were 665 pharmacist cases, 344 dentist cases and 16 nurse practitioner cases. Rates of disciplinary action were low. Dishonest business practice violations were more common among pharmacists and dentists and clinical care concerns were more common among dentists and nurse practitioners.Males were more likely than females to be disciplined.License revocation was uncommon and never occurred in cases concerning one-time, clinical violations.Lack of transparency in access to disciplinary action cases and demographic factors limited the associations that could be drawn and limited comparisons within provinces.

Conclusion: This study was the first in Canada to characterize disciplinary action outcomes for dentists and nurse practitioners and updates previous work on pharmacists. However, a main finding of this study was the lack of transparency in the reporting of disciplinary action cases across Canada and a lack of transparency regarding the information available on each regulator's online register of professionals. Interagency improvements in this area will be important to improve disciplinary processes and transparency in Canada.

PP-15

Adverse fetal outcomes associated with gabapentin use in pregnancy: A cohort study and a scoping review with meta-analysis

Brianne Desrochers[1], *Alekhya Lavu*[1], *Eunice Valencia*[1], *Christine Vaccaro*[1], *Sherif Eltonsy*[1]

[1]*College of Pharmacy, University of Manitoba*

Background: With the increase in gabapentin use since the last decade, it became crucial to better understand its neonatal safety profile, considering its prevalent use among pregnant people.

Methods: This study includes a cohort study and a scoping review with meta-analysis. We conducted a population-based cohort study using the Manitoba administrative health databases between 1995 and2019. Pregnancies exposed to gabapentin were compared to unexposed pregnancies. We examined the association between maternal gabapentin use and the prevalence of all congenital malformations, major congenital malformations (MCMs), cardiac and orofacial malformations and neonatal intensive care unit (NICU) admissions. Generalized estimating equations models were used. For the scoping review, we searched MEDLINE and EMBASE databases for observational studies and conducted a meta-analysis using random effects models including our study.

Results: Among 289,227 included pregnancies, 870 women were exposed to gabapentin. Exposure to gabapentin in first trimester was associated with a non-significant increased risk of any malformations (aOR 1.17 [95%CI 0.91-1.50]), MCMs (aOR 1.00 [95%CI 0.72-1.38]), cardiac malformations (aOR 1.29[95%CI 0.72-2.31]) and orofacial malformations (aOR 1.37 [95%CI 0.50-3.77]). Gabapentin exposure in all/any trimester was associated with a statistically significant increased risk of NICU admissions (aOR 2.18 [95%CI 1.81-2.62]). In the scoping review, we identified 1,351 citations. The meta-analysis showed an increased risk of any malformations (OR 1.27 [95%CI 0.68-2.38, I240%]), MCMs (OR 1.51 [95%CI 1.21-1.89, I226%]), cardiac malformations (OR 1.59 [95%CI 1.22-2.08, I234%]), orofacial malformations (OR 0.63 [95%CI 0.09-4.49, I20%]) and NICU admissions (OR 3.74 [95%CI 3.33-4.19, I210%]).

Conclusions: In both the cohort and meta-analysis, gabapentin use showed a significant increased risk of NICU admissions (3 studies). Meta-analysis showed significant increase in MCMs (5 studies) and cardiac malformations (3 studies) with gabapentin use. Additional studies are needed to determine the potential association between gabapentin use and any and orofacial malformations. The results suggest that clinicians must prescribe gabapentin with caution during pregnancy.

POSTERS – PHARMACY PRACTICE

PP-16

Pharmacists' role in mental health care: exploring the current state and factors impacting service provision

Amy Soubolsky[1], *Katelyn Halpape*[1]

[1]*College of Pharmacy and Nutrition, University of Saskatchewan*

Objectives: Involvement of pharmacists in mental health care improves medication use, reduces hospitalizationand costs and increases patient satisfaction. Although pharmacists can have an essential role in addressing the mental health crisis, there are gaps in the understanding of the current extent of Saskatchewan pharmacists'involvement in caring for patients with mental illness and of their readiness to effectively providethis care.This study describesthe current practices of Saskatchewan pharmacists in providing care to individuals with mental illness and assesses factors that may impact these practices.

Methods: Cross-sectional,electronic survey emailed to pharmacists in Saskatchewan. Pharmacists were recruited through the Pharmacy Association of Saskatchewan and Canadian Society of Hospital Pharmacists Saskatchewan Branch and were eligible if theircurrent practiceincludeddirect patient care.For a list of pharmacy clinical services, respondents were asked torate 1) their extent of current provision, 2) the extent to which they feel motivated to provide,and 3) the extent to which they agree it is a pharmacist'srole to provide. Other questions were asked to assess attitudes, beliefs and potential barriers. Data was analyzed using descriptive statisticsand content analysis.

Results: Fewer than 20%of respondentsare providing clinical services to most or all patients with mental illness, except forproviding basic medication education (61%). However, most agree it is a pharmacist's role to provide these services, especially basic education(98%), monitoringtherapy (94%) and performing comprehensive medication management(91%). Many pharmacists feel motivated to provide these services and to a much higher degree than they currently are.The factors most frequently selected as having the greatest impact on service provision were insufficient knowledge (27%), competing priorities (19%) and inadequate staffing (15%).

Conclusion: Saskatchewan pharmacists are well-positionedto enhance the care of patients with mental illness, although several barriers impede their ability to increase service provision. Further research and targeted funding should be prioritized tosupport pharmacists in providing this care.

PS-1

Alterations of neurovascular insulin receptors in Alzheimer's disease.

Frédéric Calon[1], *Manon Leclerc*[1], *Philippe Bourassa*[1], *Cyntia Tremblay*[1], *David A. Bennet*[2]

[1]*Faculté de pharmacie, Université Laval,* [2]*Department of Neurological Sciences, Rush Medical College*

Background: The hypothesis that central insulin resistance plays a role in Alzheimer's disease (AD) is gaining interest. However, insulin is secreted by the pancreas and must first interact with the blood-brain barrier (BBB) before having an impact on brain function. In addition, amyloid-β peptides (Aβ) can compete with insulin binding to its insulin receptor (INSR). INSR is a heterotetrametric receptor formed of 2 extracellular α chains (substrate binding) which exists in 2 isoforms, one long (INSRα-B) and one short (INSRα-A); combined with 2 intracellular β-chains (INSRβ) where auto-phosphorylation sites are located to trigger the signaling pathway.

The aim of the present study was thus to investigate the association between INSR and Aβ in brain microvessels isolated from frozen human brain samples.

Methods: We used microvessel-enriched brain parietal cortex samples from participants of the Religious Order Study, a longitudinal clinical and pathological cohort study of aging and dementia where individuals were classified as either Controls (N=20), mild cognitive impaired (MCI)(N=20), or AD (N=20). To obtain a fraction enriched in cerebral microvessels, we extracted those from frozen human brain. Then, we performed protein extractions to study INSR, AD neuropathology and/or BBB proteins by Western Blot and/or immunofluorescence.

Results: First, the INSR was found enriched in human brain microvessels, compared to parenchymal fractions. We next observed that subjects diagnosed with AD had lower levels of the INSR precursor (proINSR) and INSRα-B in the parietal cortex, while INSRβ remained unchanged between groups. A shift toward a higher INSRα-A:INSRα-B ratio was detected in AD brain, consistent with insulin resistance. Western blot analyses showed that INSRα-B levels positively correlated with cognitive scores. Moreover, proINSR and mature INSR (INSRβ and INSRα-B) were inversely correlated with Aβ plaques in brain cortex and β-site APP cleaving enzyme 1 (BACE1) of microvessels. In addition, positive associations between INSRα-B and proteins involved in Aβ production or clearance were established.

Conclusion: Overall, our data support the hypothesis of brain insulin resistance in AD, implicating INSR localized in microvessels. Alterations of vascular INSR were associated with ante mortem cognitive impairment and with Aβ or proteins involved in its production or clearance.

POSTERS – PHARMACEUTICAL SCIENCE

PS-2

MPE-298, a cyclic azapeptide ligand of CD36/SR-B2, slows progression of atherosclerosis in hypercholesterolemic apolipoprotein E-deficient mice

Jade Gauvin[1], *Genevieve Frégeau*[1], *Liliane Ménard*[1], *Huy Ong*[1], *Sylvie Marleau*[1]

[1]*Faculté de pharmacie, Université de Montréal*

Background: Monocytes/macrophages express scavenger receptor B2 (CD36), known to play a key role in the development and pathogenesis of atherosclerosis.

Objective: To underscore CD36/SR-B2 as a potential therapeutic target in atherosclerosis, a cyclic azapeptide derivative of growth hormone-releasing peptide (GHRP-6), MPE-298 (Ala-AzapropargylGly-D-Trp-Ala-Trp-D-Phe-Lys(allyl)-NH2) was evaluated for its potential anti-atherosclerotic properties in a mouse model of the disease.

Methods: Male apolipoprotein E deficient (apoE-/-) mice were fed a high fat high cholesterol (HFHC) diet containing 1.25% cholesterol (D12108, Research Diets, USA), from 4 weeks of age. Mice were treated by daily subcutaneous injections of 300 nmol MPE-298/kg or MPE-003 (positive control) or vehicle (0.9% NaCl), from 12 to 20 weeks of age, with 11-12 mice in each group. The effect of treatment on aortic lesion progression was assessed by "en face" analysis of aortic crosses. Oil Red O-stained lesion areas were analyzed with computer-assisted planimetry.

Results: The results show that, compared to the vehicle-treated group, MPE-298 reduced aortic arch lesion progression by 40% ($p < 0.0001$), in a manner similar to that observed with the positive control group (42%). In addition, MPE-298 reduced aortic sinus necrosis by 24% compared to the vehicle group ($p = 0.04$). These effects were associated with a 53% reduction of IL-1β ($p = 0.04$) and with a 43% reduction of TNF-α ($p= 0.03$) plasma levels, compared to vehicle-treated, HFHC-fed apoE-/- mice. No significant change was observed in plasma cholesterol levels.

Conclusion: This study shows that the macrocyclic azapeptide MPE-298 reduced atherosclerotic lesion progression in aortic cross and necrosis in aortic sinus. This effect may in part be due to its anti-inflammatory activity but unlikely through the modulation of cholesterol metabolism.

Characterization of the uric acid transporter URAT1 (SLC22A12) in platelets

Imane Boukhatem[1], Jean-Christophe Bélanger[1], Omaima Ghafoud[1], Samuel Fleury[1], Mélanie Welman[2], Marie Lordkipanidzé[1]

Faculté de pharmacie, Université de Montréal, [2]Research Centre, Montreal Heart Institute

Background: Urate Transporter 1 (URAT1), encoded by the SLC22A12 gene in humans, acts as an organic anion transporter that plays a key role in uric acid and oxidative homeostasis. High levels of uric acid lead to urate crystal formation in the joints or in urine resulting in gouty arthritis or kidney stones, respectively. Less well-known, the epidemiological association of hyperuricemia with adverse cardiovascular events poses the question of the contribution of high uric acid circulating levels to platelet reactivity and thrombosis.

Objective: To characterize URAT1 expression and function in human platelets and megakaryocytes.

Methods: URAT1 expression was verified by immunoblotting and by flow cytometry using different antibodies in platelets and the megakaryocytic cell line MEG-01, with HEK293 as positive controls. Platelet aggregation in response to classical platelet agonists (collagen, arachidonic acid, ADP and thrombin receptor activating peptide (TRAP)), in the presence or absence of pharmacological URAT1 inhibitors (lesinurad and verinurad) was verified by light transmission aggregometry in washed platelets prepared from whole blood of healthy male and female volunteers.

Results: URAT1 immunoreactivity was detected on the surface of and within platelets and MEG-01 cells, at the expected molecular weight of 65 kD. Cell fractionation experiments were consistent with flow cytometry results. Incubation of washed platelets with uric acid (50-100 µg/ml) did not induce spontaneous platelet aggregation, nor did it induce synergistic effects in the presence of low concentrations of classical platelet agonists. However, collagen-, arachidonic acid-, ADP- and to a lesser extent TRAP-induced platelet aggregation was inhibited by pre-incubation of washed platelets with either lesinurad (IC50 125 nM - 1.6 µM) or verinurad (IC50 145 nM - 14 µM).

Conclusion: Human platelets and megakaryocytes express the URAT1 transporter. Whether platelets and megakaryocytes can sense and respond to uric acid fluctuations in their environment remains uncertain and merits further investigation.

POSTERS – PHARMACEUTICAL SCIENCE

PS-4

Theranostic nanomedicine for imaging and treatment of multiple joints in rheumatoid arthritis

Zeynab Nosrati[1], Tullio Esposito[1], Marta Bergamo[1], Cristina Rodriguez-Rodriguez[1], Katayoun Saatchi[1], Urs Hafeli[1]

[1]Faculty of Pharmaceutical Sciences, University of British Columbia

Background: Many Rheumatoid arthritis (RA) patients fail to respond satisfactorily to frequently given anti-arthritic drugs or experience side effects. The main reason for non-ideal treatment is that insufficient drug doses reach the joints, therefore higher and more frequent doses needed.

Objectives: To improve drug pharmacological profile and direct the anti-inflammatory activity to the inflamed joints, we synthesized a pro-drug to deliver more of the drug specifically to inflamed joints, to maintain appropriate drug concentration thereafter and to avoid side effects in other organs.

Methods: Our methods encompass the chemical syntheses of the polymeric prodrugs and the investigation of their stability and release kinetics. The pharmacokinetics of the prodrug was established after radiolabeling with In-111 and preclinical SPECT/CT imaging in an RA mouse model. The efficacy of the prodrugs is also established in the same RA model and compared to the free drug given in the same form/ timing as it is currently administered to patients. In vitro stability measurements of the prodrugs in human synovial fluid from rheumatoid arthritis patients is ongoing to better understand the impact of the local environment of an inflamed joint and how that influences drug release.

Results: Delivering methotrexate (MTX) bound to a carrier polymer produces a significant increase in drug uptake in the inflamed joints. When MTX was delivered as a prodrug, a 2 to 4 times lower dose given every two weeks was just as effective as two standard dosages per week of free MTX. In addition, attaching folic acid (a targeting ligand that selectively binds to folate receptors) to the polymeric carrier helped to keep the active drug longer in the targeted lesion.

Conclusion: In this study, using SPECT/CT we show our prodrug approach delivers higher concentrations of anti-arthritic drugs to inflamed joints than has previously been possible, despite lower and less frequent drug doses.

POSTERS – PHARMACEUTICAL SCIENCE

PS-5

An Infrared thermography approach to monitor disease activity in collagen-induced arthritis mouse model

Zeynab Nosrati[1], Marta Bergamo[1], Cristina Rodriguez-Rodriguez[1], Katayoun Saatchi[1], Urs Hafeli[1]

[1]Faculty of Pharmaceutical Sciences, University of British Columbia

Background: Collagen induced arthritis (CIA) model has been used widely for screening new medicines for potential use in rheumatoid arthritis (RA). The methods of clinical scoring and paw thickness measurement are conventionally being used to evaluate arthritis onset detection and monitoring disease progression. Due to subjective nature of these methods, evaluation may be quite challenging, leading to biases and inter-rater variability.

Objective: Here we refined and validated infrared thermal imaging (IRT) as a standardized framework to provide reproducible quantitative data as a precondition for clinical studies.

Methods: The accuracy and reliability of a digital infrared (IR) camera attached to a smartphone was tested against known temperature objects as well as certified blackbody calibration equipment. A standardized protocol incorporating contactless image acquisition and computer-assisted data analysis was developed. This setup was used to establish a simplified temperature index as a non-invasive indicator of disease severity and a measure of the degree of inflammation in mice. To assess IRT's ability to evaluate drug efficacy, we tested the beneficial therapeutic effect of nanoparticle drug delivery versus free methotrexate (MTX) in vivo in parallel to clinical arthritis scoring and paw thickness measurement.

Results: The calibrations revealed satisfactory reliability and accuracy (± 0.2 °C) of the IR camera for detecting temperature changes in the rheumatoid arthritis animal model. Significant positive correlation was found between temperature changes and paw thickness measurements as the disease progressed. IRT was found to be superior over the conventional techniques, especially at early arthritis onset when it is difficult to observe subclinical signs and measure structural changes.

Conclusion: IRT proved to be a useful and precise method for evaluating disease activity and arthritis severity in longitudinal pre-clinical and drug development studies working with the CIA mouse model.

Canadian Pharmacists Journal (CPJ) is published bimonthly for the Canadian Pharmacists Association, by SAGE Publications.

FOR MORE INFORMATION ON CPERC ABSTRACTS PLEASE CONTACT:

Janet Cooper, Executive Director
Association of Faculties of Pharmacy of Canada
PO Box 59025 Alta Vista, Ottawa, ON K1G 5T7
613-298-7167 | executivedirector@afpc.info | www.afpc.info