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The Association of Faculties of Pharmacy of Canada's (AFPC) 2024 annual Canadian Pharmacy Education and Research Conference (CPERC 2024) took place from June 11-14, 2024 in Quebec City, Quebec.

The peer-reviewed abstracts accepted for presentation at CPERC 2024 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, Pharmaceutical Science, and Teaching and Learning.

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ORAL PRESENTATIONS

M-1

Climate crisis preparedness in pharmacy: Simulation-based training for future challenges

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Background: Climate change presents unprecedented challenges to various sectors, including healthcare. As part of addressing the evolving landscape of pharmacy practice in the face of climate-induced crises, a simulation-based training program was developed. Inspired by real-life occurrences during wildfires in Canada, this initiative aimed to equip pharmacy students with essential skills to navigate pharmacy operations amidst such exigencies.

Goals: The primary goal was to simulate a scenario wherein a town, threatened by imminent danger, necessitated the evacuation of its entire populace to a distant location. The staff of a local pharmacy, similarly displaced, relocated to another town's pharmacy to serve both populations. This simulation aimed to immerse students in a scenario demanding prioritization, effective communication, leadership, resource and financial management, while sustaining essential services and assuaging the concerns of a displaced community.

Description: Third-year pharmacy students participated in a 30-minute simulation in the professional practice laboratory, confronting the complexities of serving two disparate populations in a singular pharmacy. Emotions ran high as residents grappled with the disorientation of displacement. The simulation required students to navigate the nuances of crisis management, emphasizing the need for clear communication, proactive problem-solving, and prudent resource allocation. Following the simulation, a debriefing session encouraged students to analyze the scenario and brainstorm viable solutions.

Effectiveness of the Initiative: Post-simulation, students completed an online survey, providing insights into their experience and learnings from the exercise. Out of the 106 respondents, 86% acknowledged the importance of the simulation in addressing the impact of climate change on pharmacy practice. Moreover, 84% recognized the simulation's efficacy in elucidating this impact, emphasizing its role in raising awareness among pharmacy students. The feedback regarding the simulation's quality and complexity was very positive, with 93% affirming its complexity and 96% endorsing its quality. Furthermore, 91% expressed a high level of engagement during the simulation, finding it instrumental in enhancing their learning experience (95%). The simulation effectively encapsulated crucial crisis-resource management principles, as identified by the participating students. Notably, leadership, efficient work distribution, clear communication, situational awareness, familiarity with the environment, priority setting, problem anticipation, and optimal resource utilization emerged as the pivotal discussion points.

ORAL PRESENTATIONS

M-2

Understanding the factors that affect the assessment of student performance in pharmacy practicums

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Purpose: The purpose of this study was to explore factors that may influence a practice educator's assessment of an entry to practice pharmacy student during inpatient fourth year direct patient care practicums. Why would similarly performing students receive disparate assessments from different practice educators?

Methods: This was a qualitative analysis of semi-structured interviews of existing practice educators (PE) from a variety of hospital practice environments. Participants were asked to assess a fictional case of a student's work, which provided a framework for a broader discussion of assessment practices. Data collection was based on the grounded theory model. Interviews were transcribed and subjectively analyzed for themes and factors that each study participant considered for the case as well as in their past precepting experiences.

Results: Thirteen participants consented and were interviewed. Identified themes included quality of student work, key aspects of performance by the student, professionalism, and the complexity of the patient assigned to the student. There was significant heterogeneity in both the assessment of the fictional student and the factors that influenced each participant's assessment. It was clear that not all guidance provided by the academic institution is read or followed. Participants described challenges in applying the assessment rubric, including lack of time, training, resources, knowledge of the degree requirements/structure, and psychological factors inherent in high-stakes courses.

Conclusion: Complex, varied, and often contradictory factors are used by experiential practice educators in their assessment of pharmacy students on practicum. These findings lead to inconsistency and heterogeneity when assessing a mock case and actual students. Our finding may be helpful to educators who design workplace-based assessment tools and provide guidance on their use. Educators must consider that their intentions do not necessarily align with how the tools are used in practice and consider how best to ensure PE receive the necessary education and guidance. Given that participants in our study did not always participate in or use the training and resources provided, educators should consider mandatory training with accountability processes to mitigate inconsistent use of the rubric as well as student assessment being affected by unintended influences.

ORAL PRESENTATIONS

M-3

Hospital environment discovery room: An exciting new learning initiative at Université de Montréal

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Background: The creation of a *hospital environment discovery room* is an integral component of the extensive modernization initiative within the pharmacy program, aimed at developing and consolidating skills related to the expanded scope of practice and adapting pharmacy education to contemporary practices. It fosters a comprehensive understanding of hospital pharmacy dynamics.

Goals: The primary objective is to better prepare students for their hospital clinical rotations. The focus is on the creation of a dedicated discovery room, designed to achieve specific goals such as familiarizing students with the hospital environment, introducing them to diverse information sources, and elucidating the role of hospital pharmacists.

Description: The process involved thorough planning, including the design of a dedicated space mimicking a nursing station and a patient room, with appropriate furniture and equipment. The formation of a multidisciplinary team was paramount to the success of this project. Subsequent steps encompassed brainstorming sessions to delineate the characteristics of activities within the discovery room. These activities included team exercises providing integrated feedback. Tools crucial to the success of the discovery room include the development of a patient's file in both paper and electronic formats (with aEHR), a nurse Kardex, a vital signs' chart, a hospital intranet, and a simulated *Dossier santé Québec*. To discover these information sources, a comprehensive questionnaire using H5P (with integrated feedback) was created and incorporated into the Moodle platform. This first activity was tested by both professors and voluntary students, leading to adjustments based on feedback. Further activities will involve conducting a comparative medication review, writing progress notes using SOAP format and preparing discharge prescriptions and transfer forms.

Effectiveness of the Initiative: This novel pedagogical simulation method combines autonomy and staged feedback. The first part of these activities will be integrated into the second-year pharmacy program starting January 2024. In addition to the discussion on the structured journey from conception to implementation, our presentation will provide feedback on our experience with students.

ORAL PRESENTATIONS

M-4

Professional identity formation in pharmacy learners: How do preceptors contribute?

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Purpose: Pharmacy preceptors play a role in helping students form professional identities during experiential education (EE). However, it is not clear what specific roles preceptors have and strategies that can be used to best foster professional identity formation (PIF). The objective of this study was to explore how preceptors perceive their role and their contributions to supporting pharmacy learner PIF.

Methods: This qualitative study employed an interpretative descriptive approach, to explore the experiences of pharmacy preceptors in supporting PIF in EE. Active and effective preceptors from five EE programs were recruited using purposeful sampling for individual semi-structured interviews. Interviews were recorded, transcribed, coded, and analyzed by thematic analysis. Team members used a reflective and iterative approach for data analysis and generation of themes.

Results: A total of 22 participants were interviewed from various pharmacy practice settings. Most participants precept a variety of learners including those in introductory pharmacy practice experiences (IPPEs), advanced pharmacy practice experiences (APPEs) and residents. Interviews identified that PIF was a new concept for most participants. Four main themes were identified related to preceptor roles and strategies to support pharmacy leaner PIF: making learners part of the practice and team; preparing learners to assume the role of a pharmacist; helping learners navigate emotions during practice experiences; and supporting learners in finding the right fit within the profession.

Conclusion: Preceptors can play an important role in supporting learners in thinking and acting as professionals, while also helping them navigate emotional experiences that may impact PIF. Preceptors can also support experiences and conversations to help define learner's future aspirations of the pharmacist they want to become. Strategies identified can be used to inform curricular approaches and preceptor development that intentionally support PIF. As PIF may not be a familiar concept to all preceptors, more work needs to be done to identify and prioritize areas for preceptor development.

ORAL PRESENTATIONS

M-5

ENACT: Pharmacy student perspectives on engaging in pharmacy practice

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Purpose: As the scope of practice continues to evolve for pharmacists, professional abstinence is being observed by students in workplaces and on practicums. Professional abstinence is defined as "consciously choosing not to provide the full scope of patient care activities". Exposure of students to professional abstinence may cause cognitive dissonance, as they are challenged by practices that do not match what they are taught in school. This study aims to investigate pharmacy student perspectives on professional abstinence in community practice settings and to describe potential solutions as seen by students.

Methods: All pharmacy students enrolled at an accredited Canadian pharmacy school who had previous experience at a community practice site regardless of year level were invited via email and social media to participate. Data were collected between March to November 2021 through virtual Zoom individual interviews using a semi-structured interview guide. Qualitative data analysis of the verbatim transcribed interviews consisted of three systematic stages of inductive coding using pattern coding and abstraction of the main themes observed.

Results: Twenty students representing 6 schools were recruited. Three overarching themes were identified, all underpinned by the student's professional identity formation. The themes regarding professional abstinence identified were (1) reflection upon emotions felt and excuses made for specific situations experienced and (2) acknowledgement of existing structural barriers, which encompassed an acquiescence to the status quo and perceived barriers to engagement. The solution-focused theme included continuous learning, advocacy, personal initiative, and improved logistics.

Conclusion: Students admitted to being influenced by professional abstinence in their practice environments, however, many had the conviction to shape their own futures and exert pressure on professional culture to change. Developing educational methods to help students manage the cognitive dissonance students experience is fundamental in practice change. Along with students, pharmacy educators, policy-makers, and practice sites also have a responsibility to support change in pharmacy practice for the profession to grow.

ORAL PRESENTATIONS

M-6

Professional fulfillment versus burnout: Where are year 4 students' heads at?

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Purpose: Many factors shape the professional identity of pharmacy students; however, little is known about the influence of personal and professional well-being. Two aspects of well-being explored in this study include professional fulfillment and burnout. The purpose of this study was to describe the current levels of professional fulfillment and burnout among fourth-year pharmacy students during their practicums as well as identify individual characteristics, activities, and themes associated with these topics.

Methods: We conducted a mixed methods study, utilizing quantitative and qualitative methodologies. The Stanford Professional Fulfillment Index (PFI) was used to measure professional fulfillment and burnout among students. Multivariable linear regressions were conducted to identify individual characteristics and activities as predictors of professional fulfillment and burnout. Upon completion of activities to foster personal wellness, students submitted self-reflections which were then analyzed by thematic analysis to describe student-perceived barriers and facilitators of professional fulfillment and burnout.

Results: Of 131 eligible, a total of 54 students completed the PFI, wellness activities, and self-reflection. Out of 4 points, (4 being completely true or extremely) mean professional fulfillment scores were 2.04 (SD 0.72) and burnout scores were 1.89 (SD 0.81) for work exhaustion and 0.88 (SD 0.69) for interpersonal disengagement. Having already completed the jurisprudence examination and having a job upon graduation were associated with higher professional fulfillment scores in the multivariable model (ß=0.50 and 0.58, respectively; both $p<0.05$). Working a non-pharmacy-related job was associated with higher work exhaustion scores (ß=1.13; $p<0.05$). Themes from student self-reflections included definitions of wellness and how doing what you are supposed to be doing and working in a psychologically and physically safe environment contribute to professional fulfillment. System-level factors associated with burnout were identified, with students describing the role of professional fulfillment and burnout in the quality and safety of patient care.

Conclusion: This study encourages early achievement of the steps to licensure by pharmacy students in support of their professional fulfillment. Our results also emphasize that exposing students to a variety of pharmacist-activities in experiential education and fostering well-being through educational exercises, influences students' perception of professional fulfillment and burnout, guiding who they become upon graduation.

ORAL PRESENTATIONS

M-7

PERL: Making educational scholarship count

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Background: The Pharmacy Education Research and Leadership (PERL) theme is one of four core research clusters of the Faculty of Pharmaceutical Sciences at the University of British Columbia. Building on international trends in educational scholarship and its growing importance in academic pharmacy, PERL was formalized in 2017 as the next stage in the evolution of a scholarship of teaching and learning research stream established in 2012.

Goals: PERL's aspirational goal is to advance the quality of pharmacy education and practice through leadership in pharmacy education scholarship and research locally, nationally, and internationally. The intention is to achieve this goal through capacity-building via mentorship and professional development; fostering collaborations with colleagues inside and outside the Faculty; undertaking rigorous, methodologically diverse, and impactful inquiry; and disseminating findings in a range of venues.

Description: The 49 members of PERL include faculty from all ranks and selected staff. They represent established and emerging educational scholars with considerable collective expertise in teaching, learning, curriculum development, and educational leadership. An executive council currently oversees PERL's ongoing growth and strategic directions, day-to-day operations, theme-related activities, and professional development opportunities for its members. PERL members are actively engaged in innovating in their educational practices and seeking funding, supervising students, and providing mutual support for their scholarly projects.

Effectiveness of the Initiative: With the support of the Faculty's traditional research community and senior management team, PERL is establishing educational scholarship as a legitimate scholarly activity and filling a long-standing need to recognize the full impact of the intellectual work of teaching, learning, and educational leadership. Quantitative measures of PERL's effectiveness for the three-year period from 2020 to 2023 include 62 grants totaling over $1.9 million, 54 publications, 163 presentations, and 10 awards related to the scholarly work of members. Qualitative measures include the way PERL has inspired members to deepen their engagement with educational scholarship and expand their horizons through professional development and collaborations within and beyond the Faculty.

ORAL PRESENTATIONS

M-8

Building foundations for success in decolonizing pharmacy education

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Purpose: Health inequities and anti-Indigenous racism faced by Indigenous patients has been well documented in numerous reports, and the Truth and Reconciliation Calls to Action implore progress in closing gaps in health, representation in health care, and embedding cultural competency into health education. To understand how to implement and prioritize changes needed in the academic programs of UBC's Faculty of Pharmaceutical Sciences, Building Foundations project used collaborative, Indigenous-partnered engagement to explore how to decolonize its academic programming to better train future pharmacists.

Methods: The initiative took a two-phased approach, starting first by building relationships and learning with 10 community experts and champions. These champions provided guidance on how to best undertake the research, guiding the development of questions, and sharing stories to illustrate contemporary examples of Indigenous health inequities and racism. In the second phase, the research team spoke with 15 participants including: UBC students, practicing pharmacists, and Indigenous patient partners and community members. Interviews lasted 45-90 minutes, and our semi-structured interview protocol focused on infrastructure, resources, and processes needed to actualize decolonization in the Entry-to-Practice Doctor of Pharmacy program.

Results: Thirty concrete recommendations were generated for the Faculty. Themes included advice related to curriculum improvements, prioritizing hands-on learning experiences, enhancing availability of continuing cultural safety education post-graduation, and the value of meaningful relationship building, including ensuring Indigenous patients and community members are invited to provide needed perspectives in classes and curriculum.

Conclusion: The Building Foundations project provided the Faculty's academic program with the evidence, champions, and guidance for making meaningful change through the life cycle of the health education program, from pre-pharmacy education, recruitment and admissions, within the curriculum across all years of the program, and for preceptors and practicing pharmacists seeking continuing professional education opportunities. This presentation will share the recommendations and will also highlight how they are being used to make changes within the UBC Faculty of Pharmaceutical Sciences' academic portfolio to better support student learning and future pharmacists to be equitable, compassionate and competent practitioners. Decolonization in academia becomes more complete with the long-term commitment to unlearn and relearn from Indigenous expertise.

ORAL PRESENTATIONS

M-9

Evaluation of the USask chronic pain clinic health provider mentorship program

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Purpose: The USask Chronic Pain Clinic (UCPC) is an interdisciplinary clinic operated by College of Pharmacy and Nutrition (University of Saskatchewan). The pharmacist, social worker, physical therapist, and physician team use a pharmacist-led '3M' (medication, mind, movement) approach to manage patients with chronic pain. In addition to caring for individual patients, the UCPC aims to increase capacity of the primary care system to manage chronic pain through a unique mentorship program. Health providers who refer patients to the UCPC are invited to meet with a UCPC physician/pharmacist team to receive education/mentorship on chronic pain management, often prior to the patient's initial UCPC appointment. The study aimed to determine health provider perceptions of the impact of UCPC mentorship program on their practice.

Methods: A paper-based questionnaire was mailed once monthly, from June-December 2023 to health providers who participated in UCPC mentorship sessions during the previous month. A reminder was mailed 2 weeks later. The questionnaire was pre-tested and included 14 Likert scale and 2 free-text questions and took approximately 5 minutes to complete. Respondents were entered into a draw for a gift card. The study was approved by University of Saskatchewan Research Ethics Board.

Results: Response rate was 36.5% (n=27/74) and respondents were family physicians (n=25/27, 92.6%) or nurse practitioners (n=2/27, 7.4%). About three-quarters (74.1%) reported that they were more confident managing patients with chronic pain after their mentorship session and 70.4% also reported increased knowledge about safe opioid prescribing. Most (70.4%) stated that they had applied the knowledge acquired in the session to additional patients beyond the referral. Many (51.9%) were more confident prescribing buprenorphine/naloxone for chronic pain and 37.0% had prescribed buprenorphine/naloxone for the first time because of the session.

Conclusion: The UCPC health provider mentorship service appears to be achieving the goal of increasing capacity of the primary care system to manage chronic pain. Several respondents noted improved confidence and knowledge related to chronic pain management, along with changes in prescribing practices that extended beyond referred patients, due to the mentorship program. Future research is needed to confirm these results in a randomized, controlled trial.

ORAL PRESENTATIONS

M-10

Piloting hybrid learning: Enhancing student flexibility

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Background: Both students and instructors can benefit from flexible teaching and learning strategies. Hybrid delivery and Universal Design for Learning (UDL) are two evidence-based approaches to embedding flexibility in ways that meet students' learning needs, primarily through increasing modes of access and engagement. In the University of British Columbia's Entry-to-Practice PharmD curriculum, hybrid delivery refers to the integration of online and asynchronous learning activities (ALAs) to complement in-person learning experiences. Creating content from a UDL lens provides students with meaningful avenues to access and engage with content. Through pedagogically appropriate opportunities and flexible modalities, we strive to enhance learner access and autonomy while maintaining curricular rigour.

Goals: The goals of this initiative were to 1) design, develop, and pilot ALAs of high production and educational value to replace and complement synchronous curricular elements, resulting in effective hybrid delivery within the program; and 2) align all educational deliverables with UDL principles and accessibility best practices to maximize access and success for students.

Description: Three pedagogically-sound methods of teaching have been developed through the creation of one ALA prototype in each of the following recurring content areas: 1) communication skills; 2) pharmaceutical calculations; and 3) individual disease states. This has been done by working collaboratively with students, subject matter experts, program administrators, learning designers, evaluation specialists, and faculty members with expertise in assessment, UDL, and equity, diversity, and inclusion to ensure the stated goals are being achieved.

Effectiveness of the Initiative: The first ALA was delivered to first-year students (n=225) in September 2023. Findings from the evaluation indicate students were satisfied with the autonomy over their learning; the varied approaches suited different learning needs and preferences; and there was synergy between the asynchronous and synchronous components of the hybrid activity. Findings from ALAs piloted in the 2023-2024 academic year will be presented.

ORAL PRESENTATIONS

M-11

Enhancing quality of preceptor assessments in experiential education - Frame of reference training

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Background: Achieving experiential educational outcomes in various pharmacy practice settings is dependent on many factors. An essential one is the reliability of preceptor assessments; however, these assessments are frequently discrepant. Frame of reference training (FORT) utilizes deliberate practice and feedback to establish a shared mental model for delineating students' performance.

Goals: FORT modules were created with the goal of establishing a common understanding of grading criteria to enhance the consistency of assessments. The design, implementation and evaluation of the program as well as preceptor perspectives on the perceived value and recommendations for continual improvement will be presented.

Description: A FORT program for preceptors was designed utilizing a mobile learning management system (LMS) to enable asynchronous and interactive delivery. The program consists of five modules that incorporate direct and non-direct patient care video vignettes, each demonstrating typical student activities during experiential rotations. For each activity, the same student is featured in multiple scenarios to demonstrate a range of performance levels. The vignettes were reviewed by experiential faculty to identify and categorize specific performance behaviors and pilot-tested with a representative group of preceptors to obtain consensus assessment ratings and feedback comments. FORT requires assessors to observe sample performances and compare their ratings to faculty expectations. In each module, preceptors watch the vignettes and submit ratings and comments for elements identified on the OPPCAT (Ontario Pharmacy Patient Care Assessment Tool) form. Immediate feedback is provided via comparison of their responses to the consensus ratings and sample comments. Evaluation data indicates improved preceptor confidence with using the OPPCAT form to assess knowledge and skills. Preceptors appreciated the opportunity to observe multiple, authentic scenarios of the same student and to compare their ratings with their peers. The FORT program enhanced discrimination between different levels of performance, clarification of expectations and alignment of assessment ratings with those of experiential faculty. Suggested improvements include improved LMS functionality, more examples of exceptional student performances and optional synchronous preceptor forums for discussion and debriefing.

Effectiveness of the Initiative: The FORT modules provide a valuable tool for preceptors to calibrate their ratings against faculty expectations which may serve to improve the quality of assessments in experiential rotations.

ORAL PRESENTATIONS

M-12

Student developed cases: Are they any better than Faculty at representing the communities we serve?

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Purpose: There are increasing calls to action to address and dismantle systemic racism and discrimination that exist within pharmacy education. Recent publications have exposed gaps in representation of diverse populations within our learning materials. Our objective was to determine if when students created patient cases, they used or considered patient descriptors that represented individuals from underrepresented groups.

Methods: Third year University of Alberta students complete a group assignment where they create a patient case that they will use in a simulated interaction. Groups are assigned a clinical topic and are asked to consider adding a specific patient characteristic (such as being unhoused, or having a caregiver). There are no specific instructions provided on creating the patient demographics or characteristics. Following the Winter semesters in 2022 and 2023, all enrolled students were asked to complete a survey describing their decisions about patient characteristics they used for their case.

Results: A total of 50 students in the two years of data collection responded to the anonymous survey. Of the respondents, 74% self-identified as being part of an historically marginalized community (either by race, ethnicity, culturally, sexuality, gender, or other self-reported identity). In terms of the cases they developed, 34% of respondents stated that their case included an equity-seeking group, most commonly identified as race and sexuality. In 2022, only 3 (9%) individuals reported intentionally discussing sociodemographic characteristics but this increased to 6 (38%) individuals in 2023. Only three cases across the two years of data included patients with multiple identifiers, representing any intersectionality.

Conclusion: Students are not consciously considering factors related to race, ethnicity, sexuality, gender, and/or other identities when they create cases for use in a simulation setting. There may be multiple contributing factors to this including imitation of what they see in the curriculum, structural racism, implicit biases, and potentially, social desirability. Faculty must engage in a critical examination of our own biases and social constructs that perpetuate stereotyping and racism, to more consciously ensure representation of identities across the curriculum in order to be representative of our student bodies and the communities we serve.

ORAL PRESENTATIONS

M-13

Evaluation of a novel approach to experiential learning within a pharmacy school operated patient care clinic

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Background: The Medication Assessment Centre (MAC) is a patient care clinic operated by the College of Pharmacy and Nutrition (University of Saskatchewan) that was created to offer unique experiential learning opportunities for pharmacy students, while providing valuable clinical service for the community.

Goals: The MAC has historically offered experiential learning rotations for small numbers of senior students. The goal of this initiative was to adjust the educational approach to reach more students, while maintaining the quality of the learning experience.

Description: The MAC changed from offering 8-week Advanced Pharmacy Practice Rotations (APPE) for 6 senior students/year to offering short (1/2 day) and repeated (twice/year) immersions for all students in years 1 and 3. Groups of 4 students observed (year 1) or lead (year 3) patient interviews in the MAC, followed by faculty debriefing and student assessment.

Effectiveness of the Initiative: Students were invited in April 2023 to complete a web-based survey following the 2022-23 academic year. The questionnaires contained 12-14 Likert-scale questions (year 1 students had 2 orientation questions) and 2 free-text questions evaluating student experiences with the immersions. Eighty-four year 1 students and 80 year 3 students completed the immersions and survey response rate was 100%. Almost all students, 98.8% in year 1 and 100% in year 3, agreed or strongly agreed that they were “Able to connect academic course work with experiential activities”, that preceptors “Provided thoughtful and actionable feedback”, and that preceptors “Provided adequate instruction and supervision”. Similarly, 98.8% in year 1 and 97.5% in year 3 agreed or strongly agree that “Activities enabled me to achieve care provider competencies”. Free-text comments were consistently complimentary about the positive impact on learning and competency. This evaluation suggests that the change from 8-week APPE rotations for small numbers of senior students, to short repeated immersions for large numbers of junior students appears to have been received positively and enabled student self-perceived competency achievement.

ORAL PRESENTATIONS

M-14

Increasing rural student representation in health professions programs through mentorship

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Background: Outreach strategies that recruit rural students into health professions education programs, including pharmacy, can help address shortages of rural healthcare professionals but geographic barriers can hinder the delivery of these efforts. Additionally, healthcare professional shortages limit youths' exposure to potential role models. Therefore, unequal access to mentorship and educational opportunities can limit students' awareness of their educational and career options and can make the transition to post-secondary health professions programs difficult. In an effort to close this gap, Rural eMentoring BC (ReMBC) connects rural youth to mentors who are students in health professions programs.

Goals: ReMBC aims to provide rural youth with equitable access to health professions educational and career support through mentorship; specifically by: exposing students to different healthcare career options, showcasing the various educational pathways to healthcare careers and easing the transition from a small high school in a rural community to a health professions post-secondary program in a large urban centre. Ultimately, ReMBC aims to inspire and support rural students to pursue healthcare careers with the hope that they someday practice rurally.

Description: Rural high school students are matched one-to-one with health professions students through an online platform. Dyads communicate via asynchronous messaging and discuss a semi-structured curriculum on topics such as careers, educational pathways, rural-urban transitions, and academic success. High school students who participated between 2016 and 2020 were asked about their career and educational intentions before and after participating in the program. Mentees voluntarily completed pre- and post-surveys with a mixture of structured and short answer, open text questions.

Effectiveness of the Initiative: Significantly more mentees were interested in healthcare careers after completing the program, however, their educational goals and intention to practice rurally remained constant, as they already viewed these areas positively. Mentees reported valuing the opportunity to learn from a mentor and receive personalized career and post-secondary support. By overcoming barriers to sustainable program delivery in rural communities, ReMBC shows promise for recruiting rural students to health professions programs, though future studies should determine its long-term effects on rural student representation in health professions' programs, and ultimately on the number of rural healthcare professionals.

ORAL PRESENTATIONS

M-15

PharmD in three: The University of Toronto's 3-Year proposed PharmD curriculum

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Background: After conducting an environmental analysis and considering student and stakeholder feedback, the Leslie Dan Faculty of Pharmacy (LDFP) at the University of Toronto identified opportunities to renew the PharmD program curriculum. In response, we are proposing transforming the PharmD into a 3-year program. An additional consideration is that a 3-year program reduces the time students are required to maintain housing in Toronto, one of Canada's most expensive real estate markets. This curriculum renewal aims to incorporate advances in educational methods and technology and enhance the student experience.

Goals: Goals for the curriculum changes include renewing program outcomes to emphasize the pharmacist's changing role in the health system and enabling graduates to enter the workforce one year earlier. Additionally, the change offers opportunities to 1) provide greater integration between basic and clinical sciences; 2) prioritize new educational outcomes related to Equity, Diversity, and Inclusion; 3) restructure early practice experiences (EPE) to longitudinal courses; and 4) align with best practices in teaching and learning.

Description: We launched our process with a faculty-wide retreat focused on how we envision modernizing the curriculum to align with the future of pharmacy, leveraging our strengths and identifying areas for future growth including the student experience. We established a curriculum renewal steering committee, engaged faculty by establishing working groups, and implemented new dedicated administrative support. Guided by faculty specialists on adaptive expertise and backward design, and commitment to best practices in pharmacy education, the project is moving forward with a planned launch of the 3-year curriculum in August 2025.

Effectiveness of the Initiative: Although the project is ongoing, early indicators of support came from stakeholders including those external to LDFP (e.g., hospital partners, PEBC), alumni, and current students. Currently, faculty are making difficult decisions about what information is foundational, what should be integrated, and what should be added or eliminated. The project team acknowledges both the risk and challenges associated with a change of this nature and has sought support from data, the literature, institutional colleagues, and similar 3-year programs (e.g., University of California San Francisco).

ORAL PRESENTATIONS

M-16

An innovative postgraduate diploma in specialized pharmaceutical care at Université Laval: A catalyst to foster top-level care and cutting-edge practices in hospital pharmacy.

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Background: The practice of pharmaceutical care in hospital pharmacy has undergone significant evolution over the last decade, driven notably by the decompartmentalization of practices, expanded pharmacist activities and roles, and the rapid pace of therapeutic and technological innovations. Acknowledging this dynamic landscape, our partners expressed the need for a specialized curriculum to deliver high-level care to vulnerable populations. This recognition has led to the development of an innovative third-cycle professional diploma in specialized pharmaceutical care (DP3SPS) at Université Laval.

Goals: The DP3SPS targets practicing hospital pharmacists seeking advanced expertise to provide cutting-edge pharmaceutical care and drive innovation in their specialties.

Description: The DP3SPS logically builds upon the continuum of learning level of our master's degree in advanced pharmacotherapy. It was developed by our Faculty in close collaboration with our institutional partners to enhance its feasibility, relevance, and consistency with the practical needs; a first in Canada. Four specialized domains are currently offered in partnership with the CHU de Québec-Université Laval (nuclear pharmacy, oncology, pediatric) and the CIUSSS Capitale Nationale (psychiatry). The program totals 30 learning credits (cr.) completed over 52 weeks on a full- or part-time basis. It comprises academic courses (6cr.), clinical activities (15cr.), and an integration project (9cr.). National and international internships are also strongly encouraged. Candidates are supported by a scholarship ($60K) and a mobility supplement. Learning is articulated around three key competencies (advanced pharmaceutical care; research activities integrated into care; knowledge transfer), five professional qualities (e.g., leadership, advocacy, engagement, collaboration, and rigor in application of best practices and knowledge sharing). Each trajectory in the program is highly personalized to meet specific objectives sought by candidates in their domain of expertise.

Effectiveness of the Initiative: Two pharmacists are currently active in the specialties of psychiatry and nuclear pharmacy. Specialized pharmacists will certainly play a crucial role as catalysts for positive changes in their respective domains. They can assist their peers in managing complex clinical scenarios by sharing, creating, and implementing new knowledge and practices in the clinic. This not only brings improvements for the most vulnerable patients but also contributes to the advancement of overall pharmacy practices.

ORAL PRESENTATIONS

M-17

Preceptor development through self-reflection and virtual roundtable discussion

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Background: The knowledge, skills and attitudes required to be an excellent clinical pharmacist versus an excellent student preceptor can be different. Taking time to self-reflect after precepting is a critically important step in identifying areas of your practice you want to improve. In Winnipeg, hospital preceptors do not currently have a formal opportunity to network with their colleagues about precepting topics and challenges. A self-reflective exercise followed by a virtual roundtable discussion with other preceptors, facilitated by the Office of Experiential Education (OEE), has been developed in partnership with the Winnipeg Regional Health Authority (WRHA) and St. Boniface Hospital Pharmacy programs.

Goals: 1) Foster preceptor self-reflection of their precepting skills, 2) Develop a community of preceptors to network and share best practices and strategies to address challenges and 3) Improve the quality of experiential education rotations.

Description: Hospital pharmacists in Winnipeg will be provided with a self-reflection exercise asking questions about their precepting experiences, (e.g., what they do well, what they want to improve etc.). This exercise will prepare them for the 1-hour, virtual roundtable discussion. Preceptors will be placed in small groups and the discussion will be facilitated by a member of the OEE. During the discussion, preceptors will share their answers to the questions posed in the self-reflection exercise. Plans for expansion include future discussions including hospital preceptors from outside Winnipeg and exploring a similar process for community pharmacy and primary care preceptors.

Effectiveness of the Initiative: Following the discussion, preceptors will be given a survey to obtain feedback on the benefits of the discussion and how they plan to improve their precepting skills. Additional incentives for preceptors are the ability to attend the discussion on work time and receive continuing education credits.

ORAL PRESENTATIONS

M-18

Inclusive pharmacy: Where are we and how can we do better? A study on the experiences of 2SLGBTQ+ clients receiving care and pharmacists providing care in British Columbia

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Purpose: 2SLGBTQ+ communities experience significant health disparities, attributable to negative experiences accessing healthcare and providers' lack of training in sexual orientation and gender identity and expression (SOGIE). To better understand the healthcare landscape in British Columbia and inform the training of future pharmacy graduates, we conducted two surveys focusing on (a) the experiences of 2SLGBTQ+ clients receiving care and pharmacists providing care, and (b) pharmacist competencies.

Methods: Two anonymous questionnaires were deployed, one for 2SLGBTQ+ clients and one for pharmacists. Questionnaires were piloted prior to large-scale dissemination through social media channels and 2SLGBTQ+ community organizations. The community-facing questionnaire asked participants about their experiences with their pharmacists and with the physical pharmacy space. The pharmacist-facing questionnaire asked participants to self-assess the inclusiveness of their own practice and pharmacy space. Both surveyed groups were asked to rank relevant areas of pharmacist training by order of importance. Quantitative data in the form of Likert scale responses and ranking data was analyzed numerically, while optional free-text comments were analyzed qualitatively by two independent reviewers using an inductive approach.

Results: 2SLGBTQ+ clients (n=195) and pharmacists (n=465) were surveyed. 2SLGBTQ+ clients ranked knowledge about 2SLGBTQ+ health topics and treating clients respectfully without stereotyping as key competencies pharmacists should have. Common themes emerging from 2SLGBTQ+ clients' comments of when pharmacists failed to meet their needs were lack of competency (28.9%) and making assumptions (18.1%). While 66.7% pharmacists always or often feel comfortable interacting with 2SLGBTQ+ clients, only 47.7% default to gender-inclusive language, and only 36.1% pharmacists consider their pharmacy a welcoming space for 2SLGBTQ+ people. Using inclusive language and creating safe and inclusive spaces were ranked the most important training amongst pharmacists surveyed. The lack of relevant training was a theme identified from pharmacists' self-reported barriers in providing inclusive care.

Conclusion: This snapshot of 2SLGBTQ+ pharmacy care in BC demonstrates room for improvement in pharmacists' SOGIE training. These key areas of training should be consciously and intentionally integrated into all aspects of a professional healthcare program.

ORAL PRESENTATIONS

M-19

A realist evaluation of an integrated interprofessional education program at the Leslie Dan Faculty of Pharmacy, University of Toronto.

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Purpose: The Interprofessional Education (IPE) curriculum at the University of Toronto is a developmental, integrated curriculum encompassing foundational and elective learning offered on campus and in experiential settings. The current iteration of IPE curriculum has been in place for two cohorts of pharmacy students, allowing sufficient time to determine if the program is meeting its stated objectives of producing collaborative practice-ready practitioners.

Methods: Because of the complexity of the IPE curriculum's integration with the PharmD program, a realist evaluation was selected to investigate the impact of the curriculum on pharmacy students. This evaluation focuses on understanding how the IPE curriculum mechanisms are enacted within the PharmD context linking them to the outcomes it generates. The research explores the impact of the curriculum on students' ability to be collaborative practitioners, the essential elements that enable its effectiveness and efficiency, and the most significant learning opportunities and contributing factors in preparing students to develop collaborative competencies.
This study included 2021 and 2022 PharmD graduates. It analyzed data from IPE learning activities evaluations, reflections on IPE activities, interprofessional competency assessments, graduate exit surveys, IPE student surveys and focused interviews of a selection of graduates.

Results: The most prominent collaborative competencies identified were role clarification and interprofessional communication. Through exposure to other health professions in the IPE curriculum, graduates understood interprofessional roles and scopes, preparing their expectations for practice. Gaps identified were in preparation of graduates for interprofessional conflict resolution in certain experiential and practice settings. Participants described how the IPE curriculum helped them build confidence and understand their value and contributions as a pharmacist in interprofessional settings, with challenges when encountering the unofficial "hierarchy" of healthcare professions. Finally, the shift to online learning during the COVID-19 pandemic impeded the development of interprofessional team functioning and communication.

Conclusion: The IPE curriculum at the University of Toronto helped PharmD graduates in the formation of the collaborative practitioner component of their professional identities as pharmacists. This study provides information that can aid educators in enhancing enabling mechanisms in the IPE curriculum, while minimizing disabling competencies and addressing gaps in areas such as hierarchy and conflict resolution.

ORAL PRESENTATIONS

M-20

Assessing pharmacy student perceptions of a new cultural safety course

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Background: Increasingly, discussion about the impacts of systemic bias on health outcomes is recognized as fundamental to healthcare professional training. In September 2023 a first iteration of a course in cultural humility was offered to address this need.

Goals: To assess student perceptions of the initial offering of a mandatory cultural humility course for 120 first-year pharmacy students.

Description: The team developed a mandatory 12-week hybrid course comprised of two hours/week of online and/or in-person material. Responding to the Truth and Reconciliation Commission's Calls to Action, the course highlighted Indigenous Peoples' health experiences. Online material development was guided by an Indigenous advisory committee with content developed by Indigenous experts. Online modules were supplemented with guest speakers on topics ranging from racism, gender and sexual minorities, Indigenous health, to bias in online spaces. Brief written feedback was solicited in weeks 1, 6 and 12, and a written survey was administered in week 12. Students also completed three written reflections on course content.

Effectiveness of the Initiative: At the mid-point assessment, students described the course as "thought provoking" and information specifically relating to Indigenous history as new knowledge. Half of students indicated that the course was quite educational (50%), followed by extremely (23%) and moderately (20%) educational. Overall, students identified that the most impactful online modules/speakers related to bias, microaggressions and structural and systemic racism. The most impactful seminars were on Indigenous healing practices, and a community-based activity for National Day for Truth and Reconciliation. Students identified areas for improvement including broader representation of diverse groups (e.g., neurodiversity), perceived biases by classmates both in and outside class, and attending challenging but non-mandatory seminars. The takeaways students most frequently noted were the importance of listening to the patient, being open-minded in providing safe patient care, continuously learning, and recognizing all patients are unique. Our evaluation identified that students find learning related to cultural humility valuable but challenging. Instructors must exercise care in framing the course purpose and building (and monitoring) opportunities for safe discussion and questions. While content relating to Indigenous health was seen as impactful, intentional planning and engagement with local Indigenous communities and experts is critical.

ORAL PRESENTATIONS

M-21

Navigating Emotionally Challenging Situations During Clinical Placements

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Background: Students in health professions have reported experiencing difficult situations during clinical placements that may have a significant impact on them and produce strong emotions. While these may happen commonly, students often feel unprepared for their own emotional responses, and they may be left alone to handle these experiences. Examples of situations reported in the literature include confronting illness and death, dilemmas regarding treatment, encounters with difficult patients, relating to patients and becoming emotionally involved, and witnessing unprofessional behavior by clinical teachers and other health care providers. While specific emotionally challenging situations experienced by pharmacy students is lacking, anecdotal reports by experiential education staff and post rotation written reflections completed by students have revealed similar experiences to those of other health care provider students. If students do not learn how to manage their emotions, they might be at risk of developing compassion fatigue and burnout. Unprocessed emotions and reactions may also have a negative impact on student's mental health and on their journey to becoming a professional.

Goals: To develop and deliver a pre-rotation orientation session to expose students to emotionally challenging situations and help raise awareness of personal strategies of managing emotions

Description: A 50-minute session was developed with the following components: 1) a mini-lecture to raise awareness of emotionally challenging situations in experiential learning placements, common possible situations reported by students in health professions, the variety of emotions and student behaviors that result from these situations, and strategies learners have used to manage emotions identified in the literature; 2) a small group discussion of fictional narratives that were developed based on pharmacy student experiences; 3) a large group debrief and sharing of resources to access when experiencing situations during clinical placements. Strategies to ensure psychological safety during the discussion were considered. The session was delivered by the Course Coordinator (NK) involved in rotation orientation.

Effectiveness of the Initiative: Student reaction to the session captured by a brief volunteer post session survey and course coordinator reflection is used to evaluate the session after its initial implementation to help inform future changes.

ORAL PRESENTATIONS

M-22

Patient experiences and perceptions of health professionals on the effects of advanced practice of pharmacists in family medicine groups (EXPAND project)

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Purpose: Pharmacists have been practicing in Family Medicine Groups (GMF) in Quebec in increasing numbers since 2015. Bill 31 adopted in 2020 broadens their scope of practice and authorizes pharmacists in a clinical team to prescribe medications independently via an advanced practice partnership (EPAP) agreement. Primary objective: evaluate patients' experience with their GMF pharmacist's advanced practice. Secondary objective: Describe this practice and explore GMF health professionals and community pharmacists' perceptions of this practice.

Methods: STUDY POPULATION: 1) Patients from 3 community GMFs and 3 academic GMFs; 2) All physicians (MDs), nurse practitioners (NPs) and nurses from participating clinics ; 3) community pharmacists (CPs). Each participating GMF had to recruit 20 patients (n=120) and 2 CPs (n=12). DESIGN: Quantitative and qualitative mixed methods. Only quantitative part of the study is reported here since qualitative data collection is still in progress. 1) Patients completed a cross-sectional online survey exploring accessibility, trust, advantages, satisfaction. 2) MDs, NPs and nurses completed a cross-sectional online survey exploring acceptability, advantages, barriers and collaboration. Individual interviews with patients, focus groups with GMF health professionals and focus groups with community pharmacists will complement the surveys.

Results: A total of 80 patients and 70 GMF professionals completed the survey. Most patients trust GMF pharmacists to prescribe medications; 77% trusted them as much as their MD and 19% felt more confident with GMF pharmacist prescriptions. Only one person felt less confident toward GMF pharmacist prescriptions and 2 had no opinion. Most patients (81%) reported having faster access to the GMF for their medication-related needs, increasing their satisfaction. Most MDs, NPs and nurses (94%) felt comfortable or very comfortable with the independent initiation of new medication by GMF pharmacist. Half of the respondents noted spending less time validating GMF pharmacist' suggestions or following up on therapy adjustments for their patients and having more time to devote to tasks for which their expertise is essential.

Conclusion: Implementation of an EPAP allowing GMF pharmacists independent prescribing was well accepted by both patients and professionals and increased fluidity of care and services while freeing up time for other professionals to carry out tasks requiring their unique expertise.

ORAL PRESENTATIONS

M-23

Artificial Intelligence: A wealth of opportunities for pharmacy practice and education.

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Background: Artificial intelligence (AI) is becoming more and more actively integrated into everyday life, and its potential is just immense. In the specific context of pharmacy, AI offers significant opportunities to improve healthcare delivery, optimize pharmaceutical management processes and contribute to more informed medical decisions. In parallel, information technologies (IT) also play a crucial role. They encompass a wide range of tools and systems, such as electronic medical records, electronic prescriptions, pharmacy practice management systems, telepharmacy, and robotics.

Goals: In the present study, a literature survey was performed from September to December 2023 with the following objectives: *i)* to assess how IT and AI are currently mobilized in the practice (both community and hospital) and teaching of pharmacy; and *ii)* to comprehensively understand the potential of AI for improving the formation of the pharmacists.

Description: Results of the survey indicate that AI and ITs are mainly used in the context of telepharmacy practices, the utilization of automated pharmacy packaging and dispensing systems, the development of electronic prescription and patient record management, stock and supply management, marketing, decision making (i.e. IBM Watson) and improvement of treatment adherence (virtual nurse). In the context of education, our results also identify numerous ways in which AI could be used to improve and personalize the training of community and hospital pharmacists. While this aspect will be extensively discussed during the presentation, one can envision the major impacts that generative AI will have on the development of novel pedagogic tools, strategies, and simulation. Beyond its potential, the concept of AI in pharmacy practice and education is also associated with several concerns in terms of confidentiality, evolution of the role of the pharmacist and empathy within the pharmaceutical care ecosystem.

Effectiveness of the Initiative: These analyses reveal that the potential for AI to improve pharmacy education and practice is enormous. However, the success of its development is crucially dependent on the active participation of all stakeholders including faculty, pharmacists, patients, and other partners. Additionally, it is essential to consider, all ethical barriers that this revolution in practice may encounter.

ORAL PRESENTATIONS

M-24

Equity-diversity-inclusion and Indigenous training for pharmacy professionals and students working in and with interprofessional primary care teams

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Background: There is a lack of pharmacy specific equity, diversity, inclusion (EDI) and Indigenous health education for pharmacy professionals and students. *Team Primary Care: Training for Transformation* is a Canada wide initiative seeking to enhance integrated and comprehensive primary care training for health professionals and has an overarching goal of integrating EDI and reconciliation through all project components. The Indigenous Pharmacy Professionals of Canada (IPPC), in collaboration with the Association of Faculties of Pharmacy of Canada, led the Pharmacist Training for Comprehensive Primary Care component of the overall project.

Goals: The goal of this initiative was to create educational modules that increase pharmacy professionals' and students' understanding and abilities to practice cultural safety and humility and care for equity-deserving groups, including Indigenous Peoples.

Description: The project team and collaborators were representatives of equity deserving groups from diverse backgrounds. The content development and review process included content experts from the UBC Faculty of Pharmaceutical Sciences' PRIDE-RX team and IPPC, peer reviewers from the Black Pharmacy Professionals of Canada, and advisory members who are pharmacy professionals with disabilities and other intersecting identities. A review of literature and existing standards was completed, including the use of a peer reviewer familiar with trauma-informed practice, to support content development. Intersectional feminist, queer, and Indigenous lenses were applied to the modules as it related to practice integration of inclusive strategies and cultural competencies for 2SLGBTQ+ and Indigenous patients. The project resulted in a 5-module series whereby outcomes for learners include increasing: 1) Understanding of health inequities, cultural safety, and humility with respect to equity-deserving and diverse patient populations; 2) Confidence to provide EDI and Indigenous health leadership and culturally responsive care through medication management services, pharmacy systems and programs, and individual practice styles and 3) Trauma-informed support by pharmacy professionals to equity-deserving groups.

Effectiveness of the Initiative: This initiative brought together pharmacy professionals' representative of equity-deserving populations to develop comprehensive and engaging content that provides the foundations for EDI and Indigenous health-related work. The next step will be evaluating the modules via feedback surveys.

ORAL PRESENTATIONS

M-25

What do we need and when do we need it? An environmental scan of the current assessments of pharmacy human resource requirements in Atlantic Canada.

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Purpose: The current labour shortages in pharmacy are leading to temporary closures and reduced hours, impacting the accessibility of pharmacist care. Direct demand side information is the most accurate method to determine the need for pharmacists. Human resource (HR) modelling has frequently been used in other health professions. Pharmacy in Canada has not made adequate use of these tools in its workforce planning. This presentation examines two recent projects in Atlantic Canada that have attempted to assess pharmacy HR needs and considers the implications for Faculties of Pharmacy tasked with cohort size planning and allocation of available seats.

Methods: We conducted a review of the efforts to model the HR requirements in some Atlantic Provinces. In Newfoundland and Labrador (NL), Memorial University and the Pharmacists Association of Newfoundland and Labrador (PANL) conducted a cross-sectional study to directly assess pharmacist vacancies in the province. A survey of community pharmacy vacancy data was combined with changes in hospital pharmacist licensure to estimate the total number of pharmacists needed in the province. In New Brunswick (NB), a workforce study was conducted as a joint venture between the NB Pharmacists' Association and the Canadian Pharmacists Association. This project modelled the workforce requirements of pharmacy professionals over a 10-year period using population forecasts, burden of illness data, prescription data, and the impact of pharmacy scope changes.

Results: In NL, a total vacancy of 106 pharmacists was identified. Vacancies were attributed to lateral movement, retirement, provincial outmigration, and parental leave. In NB, the model estimated a need for 940 pharmacists and 496 pharmacy technicians over the next 10 years. Furthermore, based on the estimated current level of supply, a deficit of 429 pharmacists and 236 pharmacy technicians over the next 10 years was predicted.

Conclusion: The level of current shortage (NL) and modelled shortage (NB) vastly exceed the current supply of pharmacists graduating from Atlantic Canadian universities. It is important for Faculties of Pharmacy to be engaged in HR forecasting as a way to take an evidence-based approach to decisions about expanding enrollment to meet the needs of a strained healthcare system.

ORAL PRESENTATIONS

M-26

Indigenous students' experiences with pharmacy education in Canada

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Purpose: This study's purpose was to characterize the individual and collective experiences of Indigenous Peoples with pharmacy education in Canada. Following the release of the Truth and Reconciliation Commission of Canada's Calls to Action in 2015, pharmacy faculties have collectively engaged in decolonization, Indigenization, and reconciliation efforts; however, to appropriately respond to the Calls to Action, Indigenous representation in the pharmacy profession is required but remains low and with unclear explanations for the continued underrepresentation. This PhD study examined, for the first time, the holistic experiences Indigenous Peoples have had throughout their first professional degree in pharmacy and offered suggestions for pharmacy programs to engage in decolonization, Indigenization, and reconciliation.

Methods: This study used Indigenous methodologies and, specifically, the conversational method. Five individuals gifted their stories over three separately scheduled conversations for a total of 15 conversations. Inclusion criteria was self-identification as First Nations, Métis, and/or Inuit and currently enrolled in, or a former graduate of, an entry-to-practice pharmacy program in Canada. Analysis was completed using Indigenous Theorizing and shared back to participants for their feedback and validation before finalizing conclusions.

Results: Three major themes were identified: 1) Isolation, 2) Whiteness and white supremacy, and, 3) Incomplete pharmacy curricula. Subthemes and other common experiences included epistemic, systemic, institutional, and interpersonal racism, being 'othered' and tokenized, and not witnessing or learning from Indigenous worldviews and experiences.

Conclusion: Perhaps the most important conclusion and recommendation from this work was that Indigenous Peoples in pharmacy education and practice feel extraordinarily isolated in their places of study and work, are eager to meet and learn from other Indigenous Peoples in pharmacy, and to feel a sense of community and belonging. The recommendation that resulted from this finding was that a national organization should be created for Indigenous pharmacy professionals in Canada, inclusive of pharmacy assistants, pharmacy technicians, pharmacists, and students in each of these programs. This critical finding and associated recommendation was prioritized and completed in 2023. 27 recommendations for Canadian faculties of pharmacy arose from this study within the areas of recruitment and retention, admissions, curriculum and pedagogy, assessment and evaluation, experiential learning, and general faculty considerations.

ORAL PRESENTATIONS

M-27

What to do and when? Representation of diversity in learning materials: The Dalhousie experience

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Background: There are urgent calls to ensure better representation of diverse populations in student learning materials yet little guidance exists to ensure this is done safely without unintentionally propagating negative and harmful stereotypes. This presentation will integrate the findings of three research projects aimed to address the safety and effectiveness of representing diversity within student learning materials.
Goals: This research program had three primary goals: 1) To establish a baseline inventory of diversity representation within case-based learning materials as part of the therapeutics curriculum; 2) To determine how students conceptualize patient case data when diversity is apparent and 3) To develop community-informed guidance for deliberately representing diversity within learning materials.

Description: Three studies were completed that informed representation of diversity within learning materials. First, it was determined that diversity was not represented well within learning materials and when done, reinforced negative population stereotypes. Second, it was determined that students default to 'problem seeking behaviours' when diversity is represented within patient cases. Specifically this means that students attempt to relate the solution of the case to the diversity marker present (e.g., race, sexuality, gender, etc.). Lastly, a study was conducted to provide the academy with a conceptual framework to improve the effectiveness of diversity represented within learning materials. This model includes components such as deliberate identification, community engagement, conscientious representation, and resource identification.

Effectiveness of the Initiative: Three studies have been completed to improve the representation of diversity within learning materials. Findings support the notion that diversity should be represented but needs to be deliberate and conscientious. Future studies are required to determine the influence of diversity representation of student competency, as well as preparation for encountering diverse populations within practice experiences.

ORAL PRESENTATIONS

M-28

Alexander First Nation Members' views of their relationships with community pharmacists: Providing ethical space

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Purpose: The Truth and Reconciliation Commission has created Calls to Action to improve Indigenous health equity. Respectful and positive relationships that are reflective of relational Indigenous worldviews and are the basis of pharmaceutical care must be built between pharmacists and Indigenous Peoples. The objective of this research is to explore a First Nation's members' views of their relationships with community pharmacists.

Methods: Indigenous research principles and creation of ethical space informed study design. Research proposal design, including framework, methodology, recruitment, data collection and analysis was co-developed with Alexander Research Committee. Alexander First Nation is a Cree Nation in Treaty 6 territory approximately 45 minutes northwest of Edmonton, Alberta. The Nation has a health centre but relies on surrounding communities for pharmacy care. Inclusion criteria were members of Alexander First Nation who have had at least one interaction with a pharmacist as an adult. Data were collected through one-on-one semi-structured interviews as conversation. Indigenous conversational methodology is built on respect, relevance, reciprocity, and storytelling. Areas such as trust, expectations of pharmacists, and willingness to share information about traditional medicines with pharmacists were discussed.

Results: Nineteen adults were interviewed at Alexander First Nation. Trusting relationships were established with familiar pharmacists who provided options and explanations, identified drug-related problems, and knew patients by name. Participants also described experiences of discrimination and perceived unethical practices which eroded trust with the pharmacist. Policies and institutional approaches to care, including provision of generic medications and missing medication coverage were perceived as dishonouring Treaty rights. Importance of being treated without discrimination and pharmacist understanding of Treaty history were discussed as essential foundations for engaging in services from the pharmacy. Spirituality surrounding traditional medicines differed between participants, with some identifying these as sacred, never to be shared or discussed, while others felt it would be appropriate to explain to their pharmacist that traditional medicines are incorporated into healing practices.

Conclusion: Many members of this First Nation described hesitation in some encounters with pharmacists due to institutional barriers, lack of trust, and lack of personalized care. Findings provide a basis for pharmacist education on relationship building with First Nations.

ORAL PRESENTATIONS

M-29

Empowering pharmacy students to challenge the social determinants of health through community service-learning projects

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Background: Recent accreditation and university reviews identified the necessity for reintroducing CSL at the University of Alberta (UofA) to reinforce understanding of social determinants of health and expand experiential experiences. A Behavioural Administrative Social and Evidence-Based (BASE) 5 course was developed for third-year pharmacy students in 2020 with the Health Advocate role. CSL was a natural complement to BASE 5 and was added in 2021.

Goals: To describe how we integrated Community Service-Learning (CSL) into a third-year course focused on Health Advocacy.

Description: In BASE 5, pharmacy students learn that social determinants of health are "conditions to be challenged and changed" rather than "facts to be known." While several didactic lectures exist, students primarily explore health advocacy through CSL. In 2021, CSL was open format and evolved into a group project for 2022-3. The UofA CSL office identified four community partners with health-related challenges, serving as the focal point for student team advocacy efforts. Four teams start a journey of applied learning with each partner. The project comprises three components: seminar activities, a showcase, and an individual reflection. Seminar activities were spread across five sessions, and 16 student teams were guided through the project using templates and two virtual visits with partners. The instructor provided formative feedback on templates, fostering continuous improvement. The completed advocacy projects were presented at a showcase, like a science fair, to encourage engaging conversations on community issues among students, community partners, and faculty members. Finally, students reflect on pharmacists' roles in addressing health inequities. They critically analyze their reactions, social location, and contributions to encourage self-awareness and integrate insights into future practice. Using an existing course and UofA resources facilitated the introduction of CSL with minimal resources.

Effectiveness of the Initiative: Pharmacy students gained valuable skills by applying course material to new situations, developing critical thinking and problem-solving abilities, enhancing their capacity to handle ambiguity, and deepening their understanding of social issues and their root causes. Our course-based CSL model empowered students to be agents of positive change in healthcare and community well-being, enriching their education and building their confidence to effect real change.

ORAL PRESENTATIONS

M-30

Development and implementation of an advanced primary care pharmacist training program

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Background: With the expansion of pharmacists' scope of practice across Canada and a shift towards more comprehensive, team-based models of primary care, a need for training to transform how practitioners work effectively together to provide patient care was identified. A subproject of the Team Primary Care initiative, the Pharmacist Training for Comprehensive Primary Care: An Advanced Primary Care Pharmacist Training Program, was developed and implemented to meet this need.

Goals: 1. Increase the number of advanced primary care pharmacist leaders with the knowledge and skills to provide team-based care. 2. Develop an educational program to enhance the knowledge, skills and professional behaviours necessary to a) build confidence in managing complex medication-related problems in a collaborative manner; b) demonstrate pharmacist leadership in change management and advocacy in primary care; and c) promote effective teaching, coaching and mentoring in practice.

Description: The program was a combination of asynchronous and synchronous training and was completed by 14 pharmacists from October 2023 to February 2024. The training consisted of 1) learning while working (12-weeks); 2) external training in an interprofessional primary care clinic (4-weeks); and 3) reflection and evaluation (4-weeks). Learning activities included 1) Clinical Onboarding: foundational activities related to the primary care landscape, interprofessional teamwork and information technology/resources 2) Clinical Blocks: activities related to skills in providing complex medication management, and 3) Clinical Leadership and Teaching: activities related to change management, advocacy, and teaching.

Effectiveness of the Initiative: The program was evaluated using surveys, thematic analysis of learner reflections and assignments, semi-structured interviews and focus groups. Phase 1 surveys assessed learner satisfaction, effectiveness of program activities and mentorship. All 14 learners agreed or strongly agreed that the Clinical blocks were helpful in preparing for external placement training. 92.8% and 78.5% agreed or strongly agreed that the Clinical Leadership and Clinical Teacher module, respectively, were helpful. While time required was cited as a common challenge, the practice cases, coaches' feedback and opportunities to network were reported as valuable to advancing their knowledge and skills as primary care leaders. Analysis of Phases 2 and 3 is underway. Sustainability options are being explored, including partnering with pharmacy faculties to deliver advanced training programs.

ORAL PRESENTATIONS

M-31

Approaches to preparing for experiential practicums in pharmacy (APPLY)

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Purpose: Since the launch of the UBC Entry-to-Practice PharmD program, the faculty's Office of Experiential Education established approaches to support student transition to experiential practicums including animated videos, in-person orientations, and print-based resources. This project sought to evaluate the effectiveness of these approaches from the student perspective, address gaps to optimize student preparation for practicums, and also characterize the nature of student involvement in, and preparation for, mutually beneficial activities (MBAs) during inpatient practicums.

Methods: Four student-led steps were undertaken: focused environmental scan of open-access website resources from Canadian pharmacy schools; two literature searches, one focusing on practicum preparation, the other on student involvement with MBAs and clinical pharmacy key performance indicators; student survey of perceptions regarding current preparation resources and opportunities; and semi-structured interviews with experiential education faculty in pharmacy programs across Canada to consider unique approaches to practicum preparation and how other programs characterize MBAs. Both quantitative and qualitative approaches were utilized to analyze data from the interview and survey steps.

Results: Methods for practicum preparation such as simulation, preparation courses and electives, and workshops were approaches identified through the environmental scan, literature reviews, and interviews. Number of respondents to the student perception survey varied per question, with 45/92 respondents completing the entire survey. When asked about current approaches, in addition to positive responses, some respondents did note they were either unaware of some tools for preparation (e.g. online videos), or noted "ineffective" or "neutral." Notably, 78% (56/72) indicated they were interested or possibly interested in a pre-practicum preparation course proposed in the survey. The concept of a pre-practicum course also arose during interviews with faculty across Canada; additional approaches employed by other programs were consistent with UBC's. Hosting a preceptor-led and peer-led session were ideas that also emerged from the findings.

Conclusion: Although consistent approaches to practicum preparation are employed at pharmacy programs in Canada, there are some opportunities to optimize UBC's approach, ensuring students are well-prepared to transition to engaging in safe and effective patient care. Specifically, a pre-practicum course will be explored; preceptor and peer involvement to support transitions to practice will also be incorporated.

ORAL PRESENTATIONS

M-32

Fostering a culturally safe experiential learning environment

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Background: The Office of Experiential Education at UBC's Faculty of Pharmaceutical Sciences supports experiential learning practicums across the province for a diverse student body. However, with limited formal training on the topic, students have shared that Practice Educators (PEs) may not be versed in addressing situations related to racism on practicum; they may inadvertently not know how to fully support equity-seeking students.

Goals: This project sought to develop specific training for PEs to support students on practicum by creating and delivering a live, accredited workshop providing anti-racism and cultural safety training for PEs aiming to (1) define and build antiracism awareness and knowledge in the healthcare context, (2) explore justice, equity, diversity, and inclusion (JEDI) concepts in pharmacy experiential education and (3) provide a framework and approach for PEs to manage and address racism arising on practicum.

Description: Preliminary steps included a local and national environmental scan, as well as a literature review. It was important to ensure the training focused on the context of experiential practicums and did not overlap with resources already available for pharmacists in their role as healthcare providers. In collaboration with and led by two content expert facilitators, a four-hour live-in person workshop was developed and delivered in October 2023. Student input informed case studies and workshop topics. PE attendees represented diverse practicum settings and included pharmacist and non-pharmacist PEs. The decision to deliver the workshop in-person, although to a small audience (n=13), was intentional, as being able to develop a safe space for vulnerable conversations was felt to be particularly important for this training.

Effectiveness of the Initiative: Quantitative and qualitative data were collected using pre- and post-workshop surveys. Based on post-workshop survey data (n=9) all respondents agreed/strongly agreed that the workshop quality and content were relevant to their practice and met their educational needs. Open-ended responses suggested that respondents found it valuable to learn about navigating situations of conflict and EDI conversations, as well as strategies to create a welcoming and safe space for students. Scenarios, case examples, and learning from others' experiences were noted as valuable learning tools.

PE-1

Master's program in advanced pharmacotherapy: Focus on the primary care concentration.

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Background: Pharmacy practice in primary care (community pharmacies and outpatient clinics) is constantly evolving across Canada. The "Faculté de pharmacie, Université de Montréal, has offered, since about 1999, a master's program with a concentration focusing on primary care practice (year 1 of pharmacy residency). This program has gone through a few iterations since its creation. Recent legislation changes in health along with the intent to increase interest in advanced practice in this area have motivated a process of re-evaluation of this program.

Goals: The main objective of this project was to reassess the curriculum of the Master's program in advanced pharmacotherapy (MPA). More specifically, our goal was to determine whether the outpatient concentration of the program met current practice needs. Furthermore, we sought to identify the essential knowledge and skills required to provide advanced pharmaceutical care in the primary care setting.

Description: Various consultations were conducted with different stakeholders, including undergraduate students from the Faculté de pharmacie (Pharm.D, QeP), graduates of the primary care concentration of the MPA program, teachers, heads of pharmacy departements, preceptors, and the associations and organizations (*Association des pharmaciens en établissement de santé (APES), Association des bannières et chaînes de pharmacie du Québec (ABCPQ), Association professionnelle des pharmaciens salariés du Québec (APPSQ), Association québécois des pharmaciens propriétaires (AQPP), Ordre des pharmaciens du Québec (OPQ))*.

Effectiveness of the Initiative: The mains results from the consultations indicate that the program's concentration meets needs, particularly in the context of advancing community pharmacy practice. Graduates of this program are expected to be leaders in practice, to support their colleagues, and to promote the development of professional care and services in the ambulatory setting. The notions of geriatrics and chronic disease management have been identified as essential. In addition to skills in pharmaceutical care and critical analysis, skills in management, research, teaching, and scientific communication emerged as important. Following these consultations, an revision of the program was conducted and a new version will be launched in the 2024 fall semester.

PE-2

Virtual immersive simulations and in-person experiential opportunity in pharmacy education for secondary and post-secondary students from underrepresented communities

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Background: Pharmacy professionals have a critical role in health promotion and acute/chronic disease prevention and management. There is a need for greater diversity amongst pharmacists and pharmacy technicians as Black and Indigenous communities, continue to be underrepresented in these professions. Thus, these professions and the communities they serve would benefit from applicants that represent these communities.

Goals: 1. To enhance the understanding of secondary and post-secondary students from underrepresented Black and Indigenous communities about the pharmacy profession and design a social media campaign to promote diversity in pharmacy, 2. To develop videos to hear Black and Indigenous pharmacists and pharmacy technicians discuss their experiences and knowledge about the profession, 3. To collaboratively create and develop virtual scenarios grounded in topics that resonate with secondary and post-secondary students and reflect scopes of practice and diversity in pharmacy professions, and 4. To deliver a one-day experiential learning opportunity for aspiring students to engage with pharmacy students and faculty.

Description: We set out to develop case-based virtual simulations (Phase 1) which feature topics relevant to youth (i.e., sexual health, immunization, sports injury) and reflect diversity in the pharmacy professions, followed by an in-person experiential opportunity (Phase 2). We collaborated with a community college to develop a social media campaign to highlight diverse personal stories/journeys and virtual simulations.

Effectiveness of the Initiative: Three registered pharmacist and pharmacy technician pairs from different community settings collaborated to develop the case scenarios. The cases on which the virtual simulations are built were reviewed and feedback was incorporated into the final versions prior to production. We forged new partnerships, with a post-secondary college (non-pharmacy program), STEM fellowship, and the Toronto District School Board, in effort to better reach and understand secondary and post-secondary students. These collaborations went beyond our initial expectations and resulted in the development of a survey to gather student input and the development of a social media campaign to draw interest to our simulations and in-person event. The culminating experiential opportunity is scheduled for March 2024. At the time of the conference, in additional to sharing the completed campaign/simulations, we will be able to share student outcome data from the experiential event.

PE-3

Preparing future pharmacists as antimicrobial stewards: Experiences implementing a 3rd year PharmD elective

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Background: Antimicrobial resistance (AMR) is one of the leading public health threats worldwide. Recognizing the increasing role of pharmacists in leading antimicrobial stewardship (AMS) initiatives, an elective course for PharmD students was implemented.

Goals: The goal of this course was to prepare pharmacy students to engage in AMS initiatives and promote appropriate antimicrobial use in community and hospital settings.

Description: This course was developed using the World Health Organization's "Health Workers' Education and Training on Antimicrobial Resistance" curricula guide. This 3-credit hour course was offered to 3rd year PharmD students at Dalhousie University and delivered predominantly in person over 12 weeks (fall 2023). Students were exposed to a range of advanced topics in infectious diseases and AMS. Content was delivered through lectures, case-based discussions, and a panel discussion. Students also participated in interactive activities in class including gamification using "Empiric" (https://sites.google.com/view/empiric-pediatric/home) and a journal club which provided additional exposure to advanced infectious diseases topics. Groups of 2-3 students were paired with a mentor (pharmacist or physician) to complete a major project. Students worked with the clinician to identify a current AMR related challenge in practice. Students were assigned to explore this challenge further and develop an AMS initiative considering local context and published literature. Students submitted a written description of their challenge at the midpoint and presented proposed solutions as a final oral presentation at the end of the term.

Effectiveness of the Initiative: Demand for the course was high with maximum enrolment of 20 students. The course was viewed favourably by all 7 of 20 students that completed final evaluations. These students (7/7) agreed or strongly agreed that the course helped them think more critically. Eight of 10 mentors that participated in the course also provided feedback. All mentors agreed or strongly agreed that the course prepare students to engage in AMS initiatives that promote appropriate antimicrobial use. At least one mentor has shared the students' proposed intervention with clinicians at their practice site and has incorporated student work into design of an intervention for acute otitis media.

PE-4

Competency profile in the international pharmacy bridging program (IPGP) QeP

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Background: The Pharmacy Qualification program (QeP) at the University of Montreal began in 2011.
The program curriculum was significantly reformed in September 2021. The sequence and number of credits allocated per course, skills labs and practicums have been redesigned. A competency-based program approach was implemented.

Goals: Develop a Personalised Competency Profile and provide individual feedback on competency-development to learners throughout the program.

Description: Based on a curricular mapping linking competencies, courses, learning goals, and mastery levels, the curriculum committee and the program's team developed a Competency Profile reporting currently achieved mastery levels. The Competency profile was intended to nurture competency development by providing individualized feedback to each learner at the end of each semester and at the end of the program. The levels of Miller's pyramid of clinical competence Knows, knows how, shows2, were selected to align learning outcomes with what learners should be able to do at any stage of the learning process. The matrix listing competencies and courses, include a color code based on the literal grading obtained by the student at the end of the course. For example, the color pink codes for a literal grading from A to A+. The entire course section is then highlighted in pink in the competency profile. A comment is also associated with each of the color codes. EX; dark green says Very Good: Your work and efforts are focused on the final objective is based on the literal grading level (B to B+) in the University's rules for undergraduate studies. Two cohorts (2021-2022 and 2022-2023 cohorts) have so far received a complete Competency profile for the total 4 trimesters including the program exit profile. The goal is also for this feedback tool to help them continue to develop their competencies during their 600-hour internship that follows the program's completion and in their future practice.

Effectiveness of the Initiative: For pharmacy educators, competency development feedback should be an ongoing process. Learners should use this feedback for efficient professional development., How learners perceive and use the competency profile will be further studied. The two first graduated cohorts will be surveyed.

PE-5

Student creation of rubrics for assessment of patient role plays in a pharmacy skills course

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Background: In constructivist learning theory, the student is an active and informed participant in the learning process including teaching and assessment. Assessment is an important tool to support and measure learning and a number of types of formative and summative assessments including patient role plays and Objective Structured Clinical Exams (OSCE) are used in the pharmacy skills program. Both types of assessments should strive to improve the students' learning and provide feedback about student progress. Pharmacy students have commented to instructors that they often do not know how they are being assessed. We developed an activity where students had the opportunity to create and apply an assessment guide for role plays within a pharmacy practice skills course.

Goals: 1) Introduce students to the process of developing assessments to support and measure learning and 2) Develop students' skills in providing assessment and feedback.

Description: Students enrolled in a year 3 practice skills course (n=125) participated in the activity. Groups of 3-4 students were assigned one of two role play scenarios and were to develop an assessment guide to evaluate student performance. Students were provided with a general structure for elements to incorporate: *information gathering, management/recommendations, monitoring and follow up, and communication skills*. Cases were then role played with students using the guide from the opposite scenario to provide feedback on its utility and effectiveness.

Effectiveness of the Initiative: Students most commonly created an assessment guide with either a dichotomous (yes/no) or numerical scale for their identified assessment criteria. Students indicated challenges with identifying the most relevant criteria for assessing student performance for each of the role play cases. Students tended to struggle with creating a reliable and valid guide that would have good generalizability. When students applied the guide to the role play there was variability in scoring consistency. Overall, instructor observations and student feedback indicated that this was a valuable exercise to help students understand assessment methods of OSCE or role play scenarios.

PE-6

PharmD experiential training in hospitals - Evolution of the 4-week clerkship of exposure to hospital practice in the 2nd year at Université de Montréal

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Background: As part of the entry-level doctorate in pharmacy (Pharm.D.), students must complete a 4-week clerkship in a hospital at the end of the 2nd year. During the pandemic, a virtual training surrounding the medication circuit was developed during the first week of clerkship in 2020 and was continued in 2021 and 2022. In 2023, the clerkship returned to a 4-week face-to-face to meet accreditation standards.

Goals: Describe the week's conversion process related to the drug circuit from virtual to face-to-face mode and its improvements to meet the accreditation requirements.

Description: The second-year clerkship is carried out within a hospital, 5 days per week for 4 weeks under the supervision of a clinical pharmacist. Students must complete a portfolio that includes a learning contract, a success plan, a table of activities to be achieved, an assessment tool and a new logbook. To take advantage of the virtual activities surrounding the drug circuit created during the COVID19 pandemic, a logbook was developed to support learning with various activities in different modes completed within the pharmacy department and in outpatient units/clinics. The themes are pharmacy department visit, organization of the department, medication use and prescription rules, roles and responsibilities of the pharmacist and of the technical staff in distribution services, drug management, clinical research and Special Access Program, care pathway, medication circuit on the care unit, roles and responsibilities of the pharmacist on the care unit linked to the circuit, quality and risk management. Eight videos of the previous virtual experience were kept for mandatory viewing; the virtual platform has also been reviewed and updated for a selection of relevant optional videos and documents. On the 4th week of the clerkship, a virtual integration activity in the form of a panel (4 pharmacy managers) was implemented.

Effectiveness of the Initiative: Four groups completed their clerkship from May to August 2023 and were very satisfied with the experience. Students appreciated the tools and the hybrid exposure to the drug circuit.

PE-7

Development of a Canadian historical pharmaceutical dictionary

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Background: Historical exhibitions, dedicated funds, articles and books promote the pharmaceutical heritage. Historical dictionaries are another interesting avenue less explored. One such initiative exists in France, however, no equivalent is available in Canada. A historical dictionary tailored to the Canadian pharmaceutical history would be a useful tool for the profession and for education purposes. This foundational work will allow for a common vocabulary and for easily providing the historical background of key pharmaceutical terms.

Goals: Describe the process involved in creating a Canadian historical pharmaceutical dictionary.

Description: A documentary review of pharmaceutical dictionaries and lexicons was carried out, with the initial contribution of three pharmacy students during their optional internship. Meetings were held with experts from the Académie nationale de pharmacie, and linguistic experts. The research team mapped 30 elements relating to the design, development, distribution, and use of a dictionary. Standard operating procedures support this approach. Each term is listed on a standardized sheet that includes both a short definition and a detailed description. Different data collection sheets were created for different types of terms, after the conclusion of the pilot testing phase. Common nouns include name, definition, related terms, other definitions, historical elements, usage and images. Proper nouns include first and last names, years, diplomas, employers, contributions to the profession, distinctions, historical elements and images. Drug names include generic and commercial name, manufacturer, therapeutic class, indications, historical elements and images. Thus far, around a hundred terms have been defined using this standardized data collection sheet. After exploring multiple web distribution approaches, a proprietary website is under development. An online translation tool will be used to provide a bilingual online dictionary.

Effectiveness of the Initiative: Our group successfully piloted the creation of a Canadian historical pharmaceutical dictionary. The use of standardized procedures and data collection tools allowed for the involvement of pharmacy students. The online dictionary will be easy to use for educational purposes and for promoting the historical fund of the Faculty of Pharmacy. The evolutive dictionary will allow teachers to submit terms that would prove useful for their classes.

PE-8

Description and evaluation of an elective academic teaching practicum

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Background: Since 2018, UBC's Entry-to-Practice Doctor of Pharmacy (E2P PharmD) program has provided an Academic Teaching practicum as an elective for fourth-year pharmacy students. As part of the PHASE (Pharmacy Students as Educators) program, it further promotes the development and identity formation of student pharmacists as educators. Anecdotally, this elective is well received by students, but formal evaluation has not been conducted. Quantitative and qualitative analysis of the practicum and its preceptors was completed using data from mandatory course evaluations from 2018-2022.

Goals: To describe, evaluate, and discuss future plans for an Academic Teaching practicum in the E2P PharmD program at UBC.

Description: The Academic Teaching practicum is a 4-week elective provided by educators responsible for teaching pharmacy practice skills in the faculty. Approximately twelve practicums are offered throughout the academic school year. Practicum objectives include: 1) developing teaching skills through instruction, coaching, or facilitation, 2) contributing to lesson plans which may include writing educational goals and objectives and creating/revising instructional content and, 3) employing practice assessment strategies which may include feedback, evaluation, and self-reflection. Student evaluation of the practicum includes questions that assess both the practice site and their preceptor. Survey questions consist of a Likert scale rating and open-ended responses.

Effectiveness of the Initiative: The Academic Teaching practicum is an important component of the PHASE Program and allows pharmacy students to further develop their knowledge and skills as educators. Thirty-one student evaluations were included in the data analysis. The quantitative analysis indicated that the practicum offered opportunities to fulfill course objectives and provided learning experiences to successfully complete the required activities (mean = 4.86/5). Students also strongly agreed that their preceptor was effective and engaging (mean = 4.98/5). Qualitative analysis showed positive themes such as preceptors providing timely and constructive feedback, setting clear expectations, and being available and approachable. It also highlighted areas for improvement, such as fostering additional discussions with preceptors on educational theories and teaching philosophy and extending the practicum's duration. Future directions would include addressing some of the opportunities for improvement and conducting an evaluation of the practicum's impact on future teaching opportunities upon graduation.

PE-9

Implementation of a peer-review, self-reflection, SOAP note activity in pharmacy case-based learning at the University of British Columbia

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Background: UBC's Entry-to-Practice Doctor of Pharmacy (E2P PharmD) program Year 2 (PY2) cohort has approximately 220 students. Therefore, the ability for faculty to review assignments and provide feedback and/or evaluation is limited. In pharmacy education, there is an existing body of literature that shows positive student perception of peer review and positive correlation between peer review and instructor grading. Additionally, the literature has shown that self-reflection is an important aspect of the metacognitive process. As such, a PY2 SOAP note documentation activity in pharmacy case-based learning was implemented using a peer-review, self-reflection process, in order to help students build their metacognitive skills.

Goals: To describe the implementation of a peer-review, self-reflection, SOAP note documentation activity, its perceived benefits and challenges, and future plans in a PY2 E2P PharmD program student cohort.

Description: A SOAP note documentation activity using peer review and self-reflection was first implemented in 2020. At the end of a case-based learning session on a seizure case, each student would submit an individual SOAP note. Using the learning management system (Canvas), the SOAP note would then be randomly assigned to another student to provide anonymous peer feedback. A self-reflection assignment was then submitted based on the students' reflection of their experience providing and receiving anonymous feedback. The peer review provided feedback alone and the self-reflection component was graded using a rubric.

Effectiveness of the Initiative: The SOAP note activity has been successfully incorporated into PY2 case based learning (CBL). Based on anecdotal reflection comments, students report this activity to be beneficial in their learning and understanding of what constitutes a good SOAP note. By receiving feedback on their note and providing feedback as a reviewer, this allowed students to reflect on different perspectives as both the author and the audience. Challenges include the students expressing their inexperience and discomfort providing peer feedback, even though this feedback was anonymous. Future direction would include addressing this challenge, conducting an evaluation of the qualitative data to identify themes that may emerge from this activity, and exploring the impact of self-reflection after peer review on student's metacognitive strategies for future learning.

PE-10

Implementation of an adapted digital minute reflection form to improve student learning and session design

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Background: Students are frequently inundated with surveys to evaluate their learning experience and teaching effectiveness. As a result, instructors find it difficult to receive timely feedback regarding session effectiveness. In response to the challenge of getting timely feedback on teaching effectiveness, a digital "minute reflection form" was introduced on Canvas for Program Year 3 (PY3) students. This tool aims to enhance student learning by prompting immediate recall of key points post-learning, providing real-time feedback to instructors, identifying areas needing further clarification, and guiding future session improvements.

Goals: The goal is to seek timely feedback on the session and evaluate student learning from the session. Additional aims involve students reflecting their learning and the potential improvement in exam results stemming from the recall of key learnings.

Description: During 2023W1, all 210 students attending Program Year 3 (PY3) tutorials were assigned to complete the digital minute reflection form inside UBC's learning management system Canvas. At the beginning of the term, students were provided with the rationale for this activity and told that completion was not mandatory and not worth any marks. The survey consisted of three questions and the responses were recorded anonymously. Upon submission, student responses could be viewed by the instructor on Canvas or exported to a spreadsheet for further analysis.

Effectiveness of the Initiative: A Qualtrics survey was conducted at the end of the semester to assess student views on the intervention's effectiveness, 148 out of 209 students responded. When asked to rate the impact of minute reflection papers on their learning in PY3 IA tutorials on a scale of 1 (least effective) to 5 (most effective), 59% rated it 4 or 5. However, 38% were neutral, and 25% found it minimally effective. These results offer valuable feedback for refining teaching methods and enhancing clarity in future sessions. Despite a majority finding the intervention effective, a significant number remained neutral. Future plans include continuous feedback review, enabling students to revisit their responses during the term, and possibly forming a focus group to delve deeper into the efficacy of minute reflection papers and self-reflection in learning.

PE-11

Evaluating the first nationwide Canadian oncology mentorship program (2022-2023) by the University of Toronto NCODA chapter

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Background: Oncology is a rapidly evolving field, prompting the expansion of the National Community Oncology Dispensing Association (NCODA) into Canada. In 2022, NCODA's University of Toronto Student Chapter initiated Canada's first oncology pharmacy mentorship program, modeled after their US-based mentorship program.

Goals: To assess the effectiveness of the first Canada-wide mentorship program and identify areas for improvement.

Description: The mentorship program engaged a total of 28 student mentees and 19 pharmacist mentors. A mixed-methods approach was applied; online surveys were used to gather mentor and mentee feedback, which were then categorized into the following: 1) Satisfaction Evaluation: statements rated on a 1-to-5-point Likert scale, 2) Engagement Metrics: frequency and the duration of interactions, 3) Communication methods: Zoom, MS Teams, FaceTime, Phone Call, In-Person, and Email and 4) Qualitative feedback: open-ended questions. Statistical analysis was performed to identify variables associated with higher program satisfaction. Given the ordinal nature of the Likert scale, Spearman's rank-order correlation was employed to 1) identify specific statements linked to higher overall satisfaction and 2) assess the relationship between program satisfaction and engagement. To assess how each communication method influenced program satisfaction, the dataset was binarized (e.g. Zoom was "used" or "not used") and point-biserial correlation applied.

Effectiveness of the Initiative: The mentorship program demonstrated high satisfaction among student mentees, with more varied responses from mentors. Engagement metrics exceeded minimum requirements, with a preference for more frequent, shorter interactions. Teams and Zoom were the main form of communication, although feedback showed a desire for more in-person interaction. Correlation analysis revealed that mentor satisfaction was linked to their perception of the program's value while student mentee satisfaction was linked to the clarity of program materials and the quality of their relationships with their mentors. Open-ended feedback emphasized the need for structured guidance, better scheduling and communication between mentor-mentee pairs, and greater industry involvement. Recommendations for future iterations include enhanced pair matching based on interests and location, more structured guidance, and greater industry involvement.

PE-12

Workload reduction in the Master's program in advanced pharmacotherapy at Université Laval

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Background: The master's degree in advanced pharmacotherapy at Université Laval is designed to prepare future healthcare facility pharmacists. In 2017, the program underwent revision, resulting in an increased credit allocation of 60 to better align with the workload. The 16-month program includes a classroom session and a year-long residency in Quebec healthcare facilities. A total of 22 courses, including 8 clinical rotations, are included in the program. In 2023, a decrease in program admissions, feedback from graduates, and a recommendation from Université Laval's Institutional Program Evaluation Committee prompted a review of the student workload by the program management.

Goals: 1. Support student success; 2. Reduce student work overload and the stress that goes with it, thus aiming for student well-being; 3. Increase annual program enrolments and 4. Maintain up-to-date, comprehensive and high-quality training.

Description: Members of the program management and faculty conducted a comprehensive review of the overall workload for students in the Master in Advanced Pharmacotherapy program. This involved a thorough analysis of each course and its content. Consideration was given to the relevance of activities, assignments, self-assessments and assessments in achieving pedagogical objectives while avoiding redundancy. The following elements were reviewed: assignments requested in some courses, the frequency of writing in assessment forms for rotations, the number of self-assessments, the duplication of reflections related to learning, and portfolio management. Additionally, the hospital residency year schedule was reviewed and residency coordinators were consulted in this process.

Effectiveness of the Initiative: It is crucial for educators to provide support for students in achieving academic success and to ensure that training remains both current and complete. Balancing these dual objectives poses a significant challenge. The decrease in self-assessments and reflections on learning, along the withdrawal of specific assignments, will substantially alleviate the mental workload on student during their residency year. The subsequent phase involves a review of assignment schedules to evenly distribute them throughout the program.

PE-13

Experiential education rotations in remote areas; how to get students far away from home!

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Background: Labour shortage is a major problem, even more in remote regions. Although the faculty requires students to complete a minimum number of weeks in regions, Montreal and Quebec metropolitan areas remain the most attractive. In fact, for the 2022-2023 academic year, 58.3% of clinical rotations (1476 rotations out of 2532) were carried out either in the Greater Montreal or Quebec area. Furthermore, according to the students and literature, regional assignment with its well-known financial challenge, is creating dissatisfaction among them.

Goals: Our goal was to find out ways to promote regional internship of students by incentives other than money allowances.

Description: Initially, an open-ended survey about the limiting factors for regional assignments was sent out to the 709 students of the PharmD program. 326 responses were received. The results of this survey were in line with current knowledge: financial problems, organizational difficulties and feelings of remoteness. A second survey, focused on the facilitating actions needed to improve acceptance of regional internships, was carried out afterwards. With almost 200 responses, the answers were a little more specific on the need for faculty support in organizing travel and accommodation. However, only few concrete solutions were proposed to address the issues. As a result, a focus group bringing together a dozen of students from various regions is to be organized to discuss, to precisely understand students' needs and to find realistic solutions.

Effectiveness of the Initiative: Along with the financial resources required, it is also important to consider the two other key issues raised by the students: the feeling of remoteness and the need for organization. Within current financial limits, it is on these two issues that faculties can take action. Those regional rotations are significant to ensure the diversification of experiences and practice environments. It is therefore important for the Faculty of pharmacy to find innovative ways of supporting students, beyond money allowance. Hence, during their training, they could also enjoy themselves in discovering new people and new regions before commencing their professional careers as pharmacists.

PE-14

Demographic diversity of patient cases in the undergraduate pharmacy curriculum

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Background: Given the increasing focus on equity, diversity and inclusion in pharmacy education, it became necessary to begin to assess the extent to which the curriculum in the entry to practice PharmD program at Memorial's School of Pharmacy reflect the society in which the majority of our students practice. The first step in this process was to gather and review the demographic information provided in clinical patient cases used in teaching and assessment in the pharmacotherapy and pharmacy practice courses and compare this data to the demographic diversity of the population of Newfoundland and Labrador.

Goals: 1) To determine the demographic diversity of clinical cases in the entry to practice pharmacy program at Memorial University 2) To compare the diversity of clinical cases in the entry to practice pharmacy program to the demographics of the population of Newfoundland and Labrador 3) To compare the diversity of teaching clinical cases and evaluated clinical case and 4) To discuss the proposed approaches to resolving discrepancies in demographic diversity of Newfoundland and Labrador and the diversity of clinical cases in the entry to practice pharmacy curriculum.

Description: Clinical patient cases used in teaching and evaluation during the 2022-2023 academic year were solicited from faculty. Demographic and clinic details were extracted from teaching cases and descriptive statistics were reported. National and provincial (NL) demographic data was gathered and the difference in prevalence of various demographic characteristics was determined. Subsequently, demographic and clinical details were also extracted from clinical cases used in student assessment and compared to national and provincial demographic data. Diversity in teaching and assessment cases was also compared and reported.

Effectiveness of the Initiative: An initiative has not yet been implemented with respect to this work but is being developed and will be forthcoming. It will be assessed after implementation to determine any changes in the diversity of clinical patient cases and alignment with provincial demographic data.

PE-15

Improving the efficiency of documentation in an academic pharmacy clinic through quality improvement and education

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Background: Documentation of clinical encounters continues to be a challenge to implement in practice and there is a lack of literature regarding documentation best practices in pharmacy. In order to inform documentation practices at an academic pharmacy clinic, a quality improvement initiative that included an educational component was implemented at the UBC Pharmacists Clinic (Clinic).

Goals: The goal of this educational initiative was to improve efficiency of consultation note writing and determine what facilitators and barriers existed for the pharmacists.

Description: Phase 1 conducted an online survey among Clinic pharmacists to assess each clinician's documentation practice at baseline. Phase 2 implemented new interventions that could advance these skills. There were four main interventions introduced: 1) revised consultation note templates, 2) a documentation "checklist" to standardize expectations for documentation 3) a "decision tree" to guide what type of note should be sent following consultations 4) a documentation "guide" providing tips and examples to improve writing skills. These interventions culminated in a peer-feedback workshop, where clinicians exchanged consultation notes and provided 1:1 feedback using the documentation checklist. The main learning outcomes were shared in a group discussion. During Phase 3, pharmacists re-answered the same survey questions 10 months later. This allowed for a direct comparison of documentation practices and skills before and after the interventions.

Effectiveness of the Initiative: After the interventions and workshop, pharmacists reduced the time to complete their notes by nearly 14 min (from 48 to 34 minutes). In addition, the Clinic changed their approach to documentation by starting consultation notes with the clinical assessment and recommendation, followed by subjective and objective information, as opposed to the traditional SOAP format. The revised consultation note structure resulted in an increased uptake of template use from 33% to 100%. Furthermore, prior to the interventions and workshop, the majority of pharmacists ranked writing consultation notes as the most burdensome aspect of their daily workflow. Afterwards, the level of difficulty in writing consultation notes reduced significantly. These findings can be used to inform how pharmacists and students are taught documentation. The results have also been used by AFPC for the Team Based care project to educate primary care pharmacists.

PE-16

Identification of barriers and facilitators for course development within the spiral curriculum model at the University of Ottawa PharmD Program: A qualitative study

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Background: The University of Ottawa developed a unique four-year undergraduate Doctor of Pharmacy (PharmD) program which started in fall 2023. The program adopts a non-traditional approach known as a spiral curriculum to address the evolving demands of the pharmacy profession. Course development within a spiral curriculum presents unique challenges that can impede effective implementation of the innovative curriculum.

Goals: To identify and understand the barriers and facilitators encountered by educators during the process of course development within a spiral curriculum.

Description: From January to May 2023, we conducted one-on-one semi-structured interviews via Teams with educators actively involved in developing Year 1 PharmD courses. These interviews, conducted in both French and English, were transcribed verbatim and subjected to deductive thematic content analysis within a theoretical domains framework by two bilingual investigators using NVivo. 11 educators from the University of Ottawa pharmacy program participated. The study identified five key themes in the course development process which encompassed “Common Understanding of the Spiral Curriculum”, “Balancing Depth and Breadth Challenges”, “Intention for Integration via Collaboration”, “Support and Leadership Characteristics”, and “Time and Workload Challenges”. Sub-themes were organized according to relevant TDF domains, where the Environmental Context and Resources, Intention, and Social Influences emerged as the most prevalent. These outcomes offer a detailed view of the obstacles and facilitators experienced and perceived during the early phase of implementation of a spiral curriculum. Environmental context and resources, particularly workshops, play a crucial role in enhancing course development and fostering a unified vision. Social influences, such as peer and faculty support, contribute significantly to a collaborative environment. Barriers center on professional roles and identities, emphasizing the need for role clarity among coordinators and the Program Implementation Committee (CIP). Participants exhibit a strong intention to collaborate, hindered by limited access to essential resources, including names of course contributors and shared documents. Addressing these barriers is crucial for proactive promotion of the spiral curriculum.

Effectiveness of the Initiative: To identify and understand the barriers and facilitators encountered by educators during the process of course development within a spiral curriculum.

PE-17

Curriculum design to foster leadership identity development in emerging pharmacy leaders

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Background: The new Graduate Diploma in Pharmacy Leadership (GDPL) was designed to pioneer leadership development in pharmacists. Consciously and successfully developing and adopting a leader identity aligns with leadership effectiveness. Drawing from this understanding and the literature on how adults make sense of and develop a leader identity, we designed a learning environment to facilitate the movement of students across the stages of Leader Identity Formation (LIF).

Goals: Our goal was to develop and embed across the new curriculum individual and group-based learning experiences that would foster leadership development beyond the knowledge, skills and abilities imparted by traditional course work. We sought to instill a deep sense of leadership identity through a curated, foundational LIF curricular program-level approach.

Description: Blending theory with hands-on application, we developed a series of teaching and learning strategies across the one in-person and four online courses, founded on student reflections. After a didactic in-person session to set the stage for LIF, to review current theories and practices, and to encourage group discussions, we worked with course leaders to design activities (aligned with their respective course content) that would require students to reflect on their evolving understanding of their leader identities. This entailed having students focus the building of their leadership self-efficacy through reflection of: their emerging views of the self and others, the development of their confidence as leaders, understanding the dynamics in specific organizational contexts, and the non-static nature of leadership development.

Effectiveness of the Initiative:
Seizing the opportunities that the design and development of a new curriculum presented, we developed a LIF pedagogical stream strategically embedded into the student experience in the program. This unique initiative represents an advancement in hybrid pharmacy education that will be of interest to those with a desire to positively impact the next generation of pharmacy leaders through curriculum design.

PE-18

Implementing Harvard business case studies in a Pharmacy Practice Management and Leadership course

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Background:
AFPC outcomes highlight the need to develop effective leadership and management skills. In response to feedback from students in the UBC Entry-to-Practice (E2P) PharmD Program, who reported challenges in applying concepts learned in the business course, we have integrated Harvard Business School Cases into the pharmacy business curriculum. This initiative aims to provide a more contextual and relevant learning experience for students.

Goals: The main goal of this approach is to enhance students' comprehension and application of fundamental business concepts by offering real-life examples to contextualize theoretical learning. Additional goals encompass prompting students to think critically and fostering increased interest in pharmacy business, leadership, and management topics.

Description: In Winter Term 1 of 2022, 209 3rd year entry to practice pharmacy students were assigned a Harvard Business School Case as a pre-reading. This case, priced at $4.25 (USD), was the sole mandatory text required for the course. The instructor utilized the Socratic method, which fosters a dynamic dialogue between the instructor and students by posing thought-provoking questions, and actively engaging students, who were also encouraged to ask questions. Typically, the case presents a complex dilemma or situation requiring crucial decision-making. The 90-minute session incorporates numerous questions related to core concepts previously taught in the course, enabling students to apply their knowledge.

Effectiveness of the Initiative: To assess the effectiveness of the case-based learning approach, a short four-question survey was conducted by a separate faculty member to gather student feedback on the session. The survey included queries like whether working through the Graham's Pharmacy case helped students apply previously learned concepts, and how the instructor's methodology enhanced their learning. Out of 209 students, 22 (about 10.5%) responded, with most feedback being positive. Students appreciated the practical application of business concepts and found the session engaging. However, they suggested improvements in the session's pace and recommended making the case materials free to reduce financial strain. This pilot project demonstrates the potential advantages of incorporating more diverse business cases in pharmacy education. Future initiatives include adding more cases and exploring funding options to ease financial costs.

PE-19

PEGGY 2.0: Advancing online pharmacy communication skills training

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Background: PEGGY 1.0, first co-developed with pharmacy students, is an online course designed to teach communication skills. Pharmacy students learn skills, test their understanding in activities, and apply skills in patient simulations, where they can observe the outcomes of their choices. More than 1000 pharmacy students have benefitted from PEGGY's personalized learning experience, promoting curiosity and motivation. PEGGY required upgrading to keep up with technological advancements, evolving pharmacy practices, and increased awareness of equity and inclusion in pharmacy education. Moreover, PEGGY needed to better align with our practice skills teaching for cross-curricular applications.

Goals: A pharmacy education team aimed to modernize an online interactive learning tool to engage students in patient-pharmacist communication skills.

Description: In the summer of 2022, PEGGY was revised to align with our Patient Care Process. Content on inclusivity, pharmacy information management systems, electronic health records, lay language and electronic medical records were also added to prepare students for current practice. PEGGY 2.0 continued its focus on helping collect relevant medical and social history in an empathetic and patient-centred manner. In 2023, PEGGY's capabilities were taken to the next level by upgrading from Storyline to RISE 360, creating an appealing interface with user-friendly navigation. This software allowed us to collaborate on PEGGY online. PEGGY's avatar was replaced with a more sophisticated PEGGY 2.0 software concept, catering to the Gen Z demographics. The Practice Skills team applied the expertise from PEGGY to develop a series of patient case scenarios. The cases were integrated into three labs, enabling students to seamlessly integrate newly acquired skills as they progressed through the PEGGY modules. In the fall of 2023, over 140 pharmacy students accessed PEGGY 2.0 more than 2500 times, showcasing the software's utility.

Effectiveness of the Initiative: Pharmacy educators must engage students in developing patient-centred skills. However, the cost of patient simulations is high. PEGGY 2.0 provides a scalable, low-risk environment for students to experiment with communication techniques and to learn from mistakes. In future, we plan to evaluate PEGGY 2.0's effectiveness, integrate AI into patient-pharmacist conversations, and expand the content to include advanced skills.

PE-20

Implementing a minor ailments curriculum into the pharmacy technician program at Humber College

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Background: Pharmacists in Ontario have recently been granted legislative authority to prescribe medications for 13 minor ailments. Given this increased responsibility placed on pharmacists, pharmacy technicians play a crucial role in facilitating minor ailments prescribing in the pharmacy setting, to best utilize pharmacy resources. This role includes initial screening and appointment scheduling, creating patient profiles, initial assessments, billing, device counselling, and prescription filling and checking.

Goals: The goals of this initiative were to implement mandatory minor ailments training into the Pharmacy Technician Program to prepare students for their role in this program and to evaluate students' perception of the training.

Description: A series of asynchronous, online modules were developed. The modules comprised of an introduction to minor ailments, descriptions of the various roles for pharmacy technicians, documentation guides for initial patient assessments, billing information, and foundational therapeutic content on each minor ailment. Assessments were also implemented, including knowledge-based checkpoints throughout the modules and a series of multiple-choice questions based on patient cases. Following the completion of the modules, students completed a feedback survey evaluating their satisfaction with the module format, content, and perception of its applicability in their future practice. Survey items were evaluated through Likert scale and open-feedback questions and analyzed through descriptive analysis.

Effectiveness of the Initiative: Thirty-three students completed the minor ailments module. Twenty-two students (67%) answered the survey after module completion. Most students strongly agreed or somewhat agreed with all survey questions, suggesting overall satisfaction. Most students (64%) enjoyed the asynchronous format of the modules. A majority of students (77%) thought the module instructions were clear (77%) and well-organized (73%) and 68% felt as though they would apply what they have learned in the modules in their future practice. Written feedback highlighted increased knowledge about minor ailments, an appreciation of the asynchronous module format, a better understanding of the roles of pharmacy technicians in minor ailments prescribing, and increased comfortability in participating in the program. Student-outlined areas of improvement included additional case studies and audio and video components integrated into the module.

PE-21

Supporting learner's patient care process and clinical reasoning and decision-making in clinical placements using the SNAPPS approach: Initial implementation and evaluation

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Background: The ability to succinctly present a patient case is an important skill to acquire while learners develop patient care skills in experiential clinical placements and begin to take responsibility for patient care under the guidance and supervision of pharmacist preceptors. The SNAPPS approach has been widely used in medicine and has been shown to facilitate concise patient summaries, clinical reasoning, and case-based uncertainties.

Goals: To support learners in succinctly presenting patient care work ups to preceptors in experiential learning placements to foster development of patient care, clinical reasoning, and clinical-decision-making skills.

Description: The SNAPPS approach offers learners a framework to summarize a patient's case and therapeutic options to the preceptor, share difficulties and uncertainties then implement a plan under feedback and guidance. The adapted SNAPPS approach developed consists of six main steps – *Summarize* (history and findings), *Narrow* (drug therapy problems identified), Analyze (options to resolve problems), *Probe* (ask preceptor about uncertainties, difficulties, or alternative approaches), *Plan* (management of patient and care plan), *Select* (a case-related issue for self-directed learning) – was developed and implemented. Learners are introduced to the approach in Skills Lab for a case in an interactive lab station simulating a conversation with a preceptor. Learners present assigned patient cases using the SNAPPS approach as a rotation activity during their second year IPPE in hospital. Preceptors are provided with introductory information about the approach and microskills (i.e., probe, model, feedback, guide) to support the process are outlined.

Effectiveness of the Initiative: Implementation of the SNAPPS approach has been evaluated by collecting learner and preceptor satisfaction in course feedback. Related to the ability of SNAPPS to support presenting a case in an organized, concise way and to demonstrate clinical decision-making, 53% (2022), and 48% (2023) of learners reported agreement, while 80% (2022) and 58% (2023) of preceptors reported agreement. Both students and preceptors have suggested more training and practice in using the approach would be beneficial. The SNAPPS approach has been implemented in the pharmacy practice experience program curriculum, however more work is needed to train learners and preceptors and to better understand potential challenges to using this approach.

PE-22

Micro-credentialing in pharmacy: A needs assessment

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Background: Pharmacists have an evolving role in an overburdened healthcare system, providing patient care to increasingly complex patients. As such, professional development opportunities need to correspond to the evolving learning needs of pharmacists. Micro-credentialing is focused learning in a chosen area of study that is cost-effective and completed in a shorter length of time than a degree. It provides working pharmacists the opportunity to refresh their knowledge, skills, and competencies in a convenient and flexible manner.

Goals: The College of Pharmacy at the University of Manitoba is committed to supporting the professional development needs of pharmacists with the goal of enabling enhanced patient care practices and moving the profession forward in Manitoba. The College is interested in offering a Micro-certificate that is tailored to the current interests and needs of pharmacists in a manner that is of high-quality, relevant, convenient, and accessible.

Description: Consultations with several internal and external prominent pharmacy stakeholders were completed to inform a framework for the Micro-certificate as well an environmental scan to inform projected tuition costs. From May-June 2023, the College distributed a survey to licensed pharmacists in Manitoba with the proposed framework for a Micro-certificate program, potential courses, and projected tuition. There was a 12% (201/1667) response rate (of those 45% from hospital practice and 31% from community practice, 23% other). Twenty % (n=41) of respondents were very interested in a Micro-certificate program with 50% (n=101) generally interested. The most common reason for interest was the desire to enhance the ability to provide quality patient care, with the most common barrier being cost. Details related to the program will be presented.

Effectiveness of the Initiative: This needs assessment has endorsed interest in the proposed professional development opportunity and as such, the College will be offering the Micro-certificate; *Essentials in Advanced Patient Care for Pharmacists* in 2024. The needs assessment has directly informed the program framework; clinical topics, number of contact hours, preferred delivery method and projected tuition.

PE-23

Professional development programming: A needs assessment

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Background: Professional Development ensures that pharmacists are continuously enhancing their skills in chosen areas of study to meet their professional goals as well as serve the evolving needs of patients. Professional development opportunities vary in breadth, depth, time commitment and cost. PharmD Bridging Programs have been available in Canada as early as 2015, providing Baccalaureate trained pharmacists an opportunity to refresh their skills through a university delivered degree program. Alternatively, Micro-credentialing is focused learning in a chosen area of study that is cost-effective and completed in a shorter length of time than a degree.

Goals: The College of Pharmacy at the University of Manitoba is committed to supporting the professional development needs of pharmacists with the goal of enabling enhanced patient care practices and moving the profession forward in Manitoba. The College sought to ascertain interest in a locally delivered PharmD Bridging Program and a Micro-certificate program in Manitoba.

Description: Consultations with several internal and external prominent pharmacy stakeholders were completed to develop frameworks for a PharmD Bridging Program and a Micro-certificate program. From May-June 2023, the College distributed a survey to licensed pharmacists in Manitoba to understand their interest in both programs. There was a 12% (201/1667) response rate (45% of respondents were in hospital practice and 31% in community practice, 23% other). Of these, 6.5% (n=13) were very interested in a PharmD Bridging Program with 14% (n=29) generally interested; 20% (n=41) of respondents were very interested in a Micro-certificate program with 50% (n=101) generally interested. The most common motivator to undertake either program was to enhance the ability to provide quality patient care, with cost being the most common barrier.

Effectiveness of the Initiative: The needs assessment endorsed more interest in a Micro-certificate program versus a PharmD Bridging Program. Discussions with stakeholders with this new data led to the College's decision to offer a Micro-certificate, *Essentials in Advanced Patient Care for Pharmacists,* in 2024. Detailed program information for both initiatives enabled pharmacists to make an informed decision and as such, the College will proceed with an initiative that will best meet the current professional development needs of pharmacists.

PE-24

Improving pharmacist facilitator preparation for teaching via a novel online training program

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Background: Each week, practicing pharmacists participate as facilitators (PFs) in the entry-to-practice PharmD program at the University of British Columbia (UBC) in pharmacy practice labs, case-based learning sessions, and tutorials. While PFs have a wealth of clinical experience, they have little to no formal training in pharmacy education. A one-day in-person workshop proved untenable during and after the COVID-19 pandemic. As a result of these challenges, a teaching and learning grant was utilized to develop a foundational training program.

Goals: The goal of this foundational training was to improve knowledge of pharmacy education to (1) foster excellence in teaching, (2) increase student engagement, (3) implement inclusive teaching practices, and (4) improve assessment validity. A secondary goal included enhancing experiential education learning for students and residents completing an academic teaching rotation.

Description: Five modules were created as part of the Next Step-PF online training program, including (i) Pedagogy, (ii) Inclusive Teaching Practices, (iii) Engagement, (iv) Feedback, and (v) Assessment. Module development was supported by a learning design team and included Vyond animations, H5P interactive activities (e.g., knowledge checks), and videos with trained actors. These five modules, now openly available online via a learning management system, are a requirement for both new and experienced PFs to prepare for the responsibilities of teaching pharmacy students in years 1, 2, and 3 at UBC. All modules have received accreditation for a cumulative seven continuing education units (CEUs), and successful completion requires completion of a knowledge assessment quiz with a minimum passing score of 70%. CEUs can be applied toward the mandatory yearly training requirements for pharmacists.

Effectiveness of the Initiative: Surveys and a focus group with a pilot group of PFs who completed modules 1-4 of the program revealed the program's strengths were the design, relevance, usefulness for preparation, and practicality. Difficulties identified were the resource intensiveness of module development and the need for a direct linkage to teaching sessions. Post-publication quality improvement surveys show that 95% (n=39), 86% (n=28), 95% (n=21), and 95% (n=21) of PFs who completed modules 1-4, respectively, agree that their learning needs were met and that modules were useful.

PE-25

Pharmacists and the environment - Evaluation of a novel online educational module

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Background: The healthcare system contributes substantially to annual greenhouse gas emissions. Pharmacists are in a unique position to implement strategies to mitigate and adapt to climate change and promote environmentally sustainable practices. The limited existing education on this important topic prompted the development and initial inclusion of a mandatory Professional Year 4 module titled Pharmacists and the Environment for the 2023/2024 academic year.

Goals: To evaluate student perspectives regarding the module's effectiveness and identify areas of improvement to meet students' learning needs.

Description: All Year 4 students exposed to the content were surveyed and invited to participate in post-survey focus groups/interviews consisting of open-ended questions regarding module content, delivery format, and ideas for improvement.

Effectiveness of the Initiative: Within the first cohort of students, 39.5% (n=45) of students participated in the survey, and three participated in an interview. Almost all respondents (98%) agreed that the module was an effective introduction to the topic of pharmacy and the environment. In open text responses on the strengths of the module, students indicated that they enjoyed learning about the topic and felt it was important; “[The module] created an awareness on the healthcare system’s impact on climate change. Brought up an issue I did not know existed.” A majority (80%) supported incorporating this topic throughout the pharmacy program - identifying an important gap in the current curriculum. Sixteen students (53% of respondents to this item) identified that this module increased feelings of stress/anxiety related to the healthcare systems’ impact on climate change, indicating a need to expand the module to include supports for students to manage these feelings. Results also included valuable suggestions on how to further refine the module content and format. Key areas for improvement included reducing the length of content by removing repetitive information and including more supplemental resources (e.g., visuals, summary one-pagers). Students enrolled in the second cohort of the course during the 2023/24 program year will also be invited to participate in the evaluation; these results will also be shared during the conference. Feedback gathered from students will help further refine and improve content for future iterations of the course.

PE-26

Competency mapping and backwards design the intersection of interprofessional and experiential education

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Background: Interprofessional education (IPE) for PharmD students at the University of Toronto includes nine mandatory events and two electives. IPE in a Practice Setting is mandatory with three activities across three experiential courses. Connecting the Collaborator (COL) Association of Faculties of Pharmacy Canada (AFPC) competency is essential. Competency mapping is a strategic process to analyze specific knowledge and skills required to deliver competencies. One risk in Pharmacy Education is curriculum overload, new content consistently added without removing irrelevant coursework. Backward design, a process to create learning experiences to achieve competencies, and program evaluation, to monitor date and assess the meeting of those competencies, are approaches to measure changes in pedagogy, delivery, and operationalization within a curriculum.

Goals: This initiative focused on competency mapping and designing a program evaluation for the experiential educational IPE opportunities to meet AFPC COL competencies.

Description: Competency mapping provided a reliable mechanism to identify misaligned content and skills including under-represented areas such as AFPC COL 2. We adapted one Flexible Activity for the 2024-25 year to be focused on Transitions in Care, which aligned with the competency and provided a clear signpost to previous learning. We also noted over-teaching of lower levels of IPE learning such as describing your own role. Included in the revision was application of their role including a reflection on how roles determined actions during handover. During the 2023-24 year, reflections were noted as complete/ incomplete, which lacked a feedback component and did not support the acquisition and demonstration of competencies. This was an opportunity to build in an assessment, balancing faculty resources, students' time, and linkages to other competencies including reflection and professionalism.

Effectiveness of the Initiative: The competency map provided a clear visual of teaching, areas of redundancy and gaps, and linkages to currently available data. Course changes have been approved for a Transitions in Pharmacy handout with personal reflective narrative as an assessment. The preliminary evaluation framework will be piloted in 2024/25 to inform further changes as LDFP embarks on curriculum renewal.

PE-27

Development and implementation of minor ailments prescribing activities within program Year 1 of an Entry-to-Practice PharmD program

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Background: On June 1, 2023, pharmacists in British Columbia were granted authority to diagnose and prescribe prescription medications under the Pharmacist Prescribing for Minor Ailments and Contraception (PPMAC) program. Pharmacy students may also participate in PPMAC services under the supervision of a licensed pharmacist. Of the 21 minor ailment conditions, 13 conditions align with year 1 of the medication management modules in the University of British Columbia's (UBC) Entry-to-Practice Doctor of Pharmacy (E2P PharmD) program. Students may also be asked to participate in PPMAC during their year 1 practicums. Having knowledge about and developing skill in conducting PPMAC services will enable students to help facilitate the expansion of the pharmacists' scope of practice in BC. As such, minor ailments tutorials and activities were developed and piloted during the 2023W academic year.

Goals: To describe the development, implementation, and evaluation of PPMAC activities in year 1 of the UBC E2P PharmD program.

Description: During the summer, directed studies students created three PPMAC tutorials. The first tutorial included an introduction to PPMAC, available resources for pharmacists, and a patient case. During the remaining two tutorials, students will participate in a group activity where they will be assigned a patient case to present to their peers and an instructor. Six different minor ailments conditions will be addressed in each of these two latter tutorials and each group's clinical documentation will be marked. During their December exams, students completed a 7-minute station where they completed PPMAC documentation and wrote a prescription for their patient.

Effectiveness of the Initiative: The raw and scaled mean score for the December PPMAC 7-minute station was 65% and 69% respectively. The station was standard set with the cut-off established at 54%. To further evaluate these learning activities, a survey will be deployed to students following implementation of the remaining two PPMAC tutorials to determine students' preparedness to deliver PPMAC while on practicum.

PE-28

Bite-sized educational resources and a virtual community of practice to engage healthcare professionals and students in quality improvement

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Background: Bite-sized educational content (e.g., infographics, podcasts, video microlessons) about quality improvement (QI) can be shared online and tailored to diverse learning styles of healthcare professionals (HCPs) and students. A virtual community of practice (CoP) facilitates knowledge exchange/translation of QI initiatives among HCPs/students.

Goals: We aimed 1) to develop and evaluate educational resources for HCPs about QI concepts using infographics (Online Pocket Guide to QI; PGQI), video microlessons, and provide real-world examples of QI/leadership (Leading with Quality Podcast; LQP); 2) to engage HCPs/students by featuring the content in a virtual QI CoP.

Description: Development of educational resources involved consulting national/international resources for training HCPs on QI (PGQI, video microlessons) and interviewing guest speakers (e.g., faculty members, clinical directors) about their experiences with QI/leadership (LQP). Resources were featured on a QI CoP for pharmacists hosted on QID. The PGQI and LQP were individually pilot-tested to a convenience sample of Canadian pharmacy professionals/students through online surveys based on Kirkpatrick's four-level training evaluation. We asked about perceived value, relevance, and knowledge gain after reviewing the PGQI or LQP.

Effectiveness of the Initiative: The PGQI, video microlessons, LQP and QI CoP have been developed. Survey respondents for both PGQI (n = 20) and LQP (n = 20) found the materials to be relevant and easy to understand, indicated improved knowledge on QI and/or leadership, and recommended the resources to other HCPs/students. PGQI respondents suggested more external resources, QI examples, and case scenarios, while LQP respondents suggested improving clarity by explaining concepts and jargon at the beginning of the episode, and to divide some episodes into two sessions for greater elaboration of subject matter. Our bite-sized content (PGQI and LQP) will serve as resources to support a virtual QI CoP for HCPs/students for knowledge exchange, personal and professional development, and fostering student leadership in QI.

PE-29

Creating space for professional advocacy in experiential learning: Development and implementation of an elective advanced pharmacy practice experience

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Background: The work of professional advocacy associations intersects with at least four educational outcomes described by the Association of Faculties of Pharmacy of Canada, namely Leader-Manager, Health Advocate, Scholar, and Professional. These organizations aim to unite, support, and advance the pharmacy profession by working collaboratively with key stakeholders (e.g., government, universities, regulators). Furthermore, many Canadian faculty members serve in leadership roles within these organizations, creating opportunities for role-modeling and mentorship of pharmacy students. Here we describe a collaboration between the Memorial University School of Pharmacy and the Pharmacists' Association of Newfoundland and Labrador (PANL) to develop and implement an Advanced Pharmacy Practice Experience (APPE) focused on advocacy.

Goals: The primary goal of the APPE is to develop leaders in the profession who are committed to improving patient care and the accessibility of health services by supporting and advancing pharmacist scope of practice. Learning activities also aim to enhance students' critical appraisal, communication, collaboration, and project management skills.

Description: Planning and development for this six-week APPE began in 2022. A list of readings and learning activities was developed in collaboration with the PANL Executive Committee as well as the Professional Practice and Full Scope Committees, as the work of these committees aligned with the responsibilities of the primary supervisor. The final list of activities was constructed with input from the pharmacy student—to ensure the student's learning goals were achieved. Activities focused on developing tools and resources for PANL members, a proposal for remuneration of pharmacist services—prescription extensions, and a provincial survey of vacant community pharmacist positions.

Effectiveness of the Initiative: This APPE presents a unique learning opportunity for pharmacy students to contribute to provincial advocacy initiatives, offering benefits to the student, PANL, and the University, as well as pharmacists and their patients. One student completed the rotation in 2022-23 and reported it as an eye-opening experience to see the work that goes into policy development. Further, the student described gaining knowledge of community services and patient care resources that he continues to use in his practice. PANL noted that the APPE advanced their advocacy agenda and commitment to supporting pharmacists.

PE-30

Bridging the knowledge gap: Sexual and gender minority related care in the PharmD curriculum

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Background: Sexual and gender minorities (SGM) face a variety of barriers to healthcare, including knowledge gaps in practicing healthcare providers. To reduce such gaps, professional associations, universities, and individual allies and SGM identifying individuals have called for action for better representation and inclusion of SGM content in pharmacy curricula.

Goals: This project aims to assess and improve how SGM-related care is incorporated into the PharmD curriculum at the University of Puerto Rico-School of Pharmacy (UPR-SOP) through the following objectives: a) Identify 1) what content related to the care of SGMs is included in the current PharmD program 2) where is it being included (i.e. courses) and 3) how it is being taught (i.e. pedagogical methods) and b) Provide specific recommendations to the curriculum committee based on these findings to better prepare our graduates to provide high quality care.

Description: The first aim will be accomplished through a multifaceted assessment of the PharmD curricula at UPR-SOP. An assessment of all course syllabi for the program will be conducted to identify SGM-related content specifically listed in course content descriptions. Additionally, a questionnaire directed toward all UPR-SOP faculty members in the PharmD program will collect information on current inclusion of SGM-related content in the PharmD curriculum. The questionnaire assesses directly the three main components of the first objective including course, specific content, teaching methods, and student assessment. The questionnaire also addresses faculty members' own training and experience teaching these topics and provides an opportunity for additional input. Questionnaire responses will be collected digitally and tabulated using Microsoft Excel. Content inclusion in the curriculum will be mapped across individual courses and the entire curriculum and evaluated to identify gaps in topics covered to provide specific recommendations to the UPR-SOP curriculum committee.

Effectiveness of the Initiative: This initiative is underway with results expected in Spring, 2024. It is anticipated that the initiative developed and the faculty questionnaire can be utilized by other institution to evaluate their own curriculum. A proper evaluation of the current inclusion of SGM-related care in PharmD curricula is crucial to develop quality material to help reduce the identified knowledge gap in this area.

PE-31

A collaborative approach to preceptor development in hospital pharmacy

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Background: Literature regarding preceptor development programs for Pharmacy Schools and Residency Programs appears lacking in regard to collaborative development programs. The Pharmacy Residency Program at Newfoundland and Labrador Health Services (NLHS) and Memorial University's School of Pharmacy (SoP) Experiential Learning Program have collaborated to form a Preceptor Development and Support Committee, whose members consist of Pharmacist and Registered Pharmacy Technician (RPhT) preceptors, the SoP's Experiential Learning Program and the NLHS Residency Program leadership. The committee's purpose is to develop a holistic team-based approach to preceptor development and provide support to all pharmacy preceptors. Here we describe the results of a needs assessment survey and the resulting workshop that was developed, along with participant feedback.

Goals: This initiative aimed to develop a team-based approach to pharmacy preceptor development through collaboration of committee members and represented programs. The committee is focused on improving and enriching the experiences of both preceptors and, as a result, students during experiential learning placements, and cultivating a positive community of preceptors.

Description: A needs assessment survey of pharmacist and pharmacy technician preceptors was conducted within the Eastern Region of NLHS. Information was gathered regarding perceived barriers to precepting, confidence in precepting skills, areas for improvement, and methods of program delivery. The committee then prepared and delivered an in person interactive workshop comprised of three topics, and focused on providing support for all preceptors. Didactic material and best practices were presented for each topic, followed by application of concepts. Facilitated discussion occurred throughout. Participants completed a feedback form at the end of each workshop delivery.

Effectiveness of the Initiative: Positive feedback was received for the effectiveness of the discussion-based program. Participants also expressed the desire and provided ideas for further development of preceptor supports. Attending the live sessions proved fruitful in engaging preceptors in development efforts. Support amongst and between pharmacist and technician preceptors was embraced by participants. We aim to complete further evaluation of effectiveness long term as we continue to build upon successes.

PE-32

Description and Implementation of the RENAL (Reinforcement of Education for Nephrology Academic Learning) Project

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Background: UBC's Entry-to-Practice Doctor of Pharmacy (E2P PharmD) program's Medication Management course is comprised of modules based on different body systems. The Nephrology module, a component of this course, is embedded in program year two (PY2). Since its inception in 2015, there have been minimal changes to the Nephrology module which the Reinforcement of Education for Nephrology Academic Learning (RENAL) Project hopes to address. A unique aspect of the RENAL Project is its collaborative modular redesign based on a student-faculty partnership funded by the Students as Partner's grant. The RENAL Project is a collaborative student-centric approach to introducing innovative educational activities to enhance the student learning experience within the Nephrology module.

Goals: To describe and discuss the implementation of the RENAL Project in the E2P PharmD program. By fostering transformative teaching with academic support, RENAL aspires to improve student learning and engagement.

Description: Starting in the 2023W academic year, PY2 E2P PharmD students engaged in transformative learning activities which included an escape room case study, an interactive case walkthrough using animation software, a patient empathy activity, and a dialysis activity. In addition to traditional lectures, practice knowledge test questions and one-page summary notes were provided. Each of these activities were led by student partners with support from Faculty; therefore, they embodied a collaborative and student-centric approach to educational innovation.

Effectiveness of the Initiative: The RENAL Project anticipates positive outcomes in student learning, engagement, and enjoyment of the Nephrology module. The project employed student surveys and focus groups post-activities to assess the impact of these innovative educational initiatives. Simultaneously, the faculty-student partnerships within the project team were also being evaluated using self-evaluations and regular reflective journals with the aim to assess the effectiveness of this type of collaborative model. By analyzing the quantitative and qualitative data, the RENAL Project seeks to provide valuable insights into the dynamic interplay between transformative teaching, student engagement, and the success of a faculty-student partnership in shaping pharmacy education at UBC.

PE-33

Closing the education/practice divide in interprofessional education by leveraging an academic electronic health record platform

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Background: Health professional programs are facing rapidly escalating challenges in the sustainability and scalability of interprofessional education (IPE) as programs distribute, expand and create new delivery models in response to the healthcare workforce shortage crisis. To address this problem, an Academic Electronic Health Record (aEHR) platform was leveraged to provide asynchronous interprofessional learning opportunities for prelicensure students.

Goals: Our intention is to design an approach that can reduce logistical challenges in coordinating IPE, support the full involvement of distributed students, and help to bridge the education/practice divide. This includes responding to the current challenges of team-based practice such as relying on electronic health records as the primary communication tool, building relationships with limited face-to-face opportunities, and working with team members that are not co-located at the same site. Exploring ways to scale to up to 1000 UBC health professional students per year was a secondary goal.

Description: Two interprofessional student teams (PharmD, MPT, BSW and MOT) collaborated on a case housed within the aEHR and initiated team member communications within and outside of the aEHR. During the week, students engaged in asynchronous activities. They introduced themselves, independently analyzed a case, negotiated care priorities, posed virtual questions to the patient, and collaboratively developed an interprofessional care plan. A synchronous debrief session was held at the end of the 1 week period, involving facilitators from each participating discipline, and an exemplary care plan was shared with the student groups.

Effectiveness of the Initiative: Evaluation of the initiative was done through a post-activity semi-structured focus group with students to discuss their learning experiences. Qualitative themes derived from focus group transcripts generated recurring opinions on the logistics of the activity, the case content, and the aEHR platform. The success of this pilot has informed on a second pilot scheduled for May 2024, aiming to further enhance the student experience and learning outcomes.

PE-34

Longitudinal embedding of a complex mental health case across 3 years in the PharmD program

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Background: The current PharmD program at UBC teaches psychiatry in a 4-week intensive module during the final didactic year of the curriculum. This challenges students to understand the many complexities and the natural disease progression of mental health conditions in relative isolation, not conducive to cross-cutting topics such as destigmatizing communication. The purpose of our project is to use a "students-as-leaders" approach in embedding a longitudinal, electronic health record-based, complex psychiatry case that progresses throughout the program.

Goals: To enhance the mental health scaffolding within the PharmD program, a focus on improving student engagement is paramount. This can be achieved by developing cases that are not only meaningful but also tailored to appropriate levels of difficulty. Additionally, incorporating learning activities that tap into students' pre-existing knowledge of de-stigmatizing practices is crucial. This comprehensive approach aims to create a more supportive and effective learning environment for mental health-related aspects in the PharmD curriculum.

Description: There were a total of 3 activities, one in each of the first three years of the curriculum, developed in collaboration with a small group of students. They follow the patient journey, starting as a young adult with ADHD and depression, eventually becoming an older adult with dementia, and finally an advanced-age adult with psychosis. By utilizing the Academic Electronic Health Record (aEHR) system, students reviewed the progression and development of the psychiatric conditions. Eventually, more complex learning objectives included understanding relationships between neurologic conditions and psychiatric conditions. Care planning was done at each year, with the final case focusing on the mental health status. Co-curricular learning opportunities accompanied these activities, focusing on patient-led destigmatizing education.

Effectiveness of the Initiative: This initiative continues to be evaluated through the collection of ongoing student feedback and iterative cycles. The activities were successfully embedded throughout the three didactic years of the program, scaffolding other current therapeutic topics. Early success noted by positive student feedback, has led to deeper ways to embed mental health concepts, including a follow-up grant-funded project focusing on patient-led destigmatizing language.

PE-35

From principles to practice: the use of province-wide leadership group discussions during elective placement experiences

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Background: Elective leadership development experiences are offered to University of Alberta Faculty of Pharmacy and Pharmaceutical Sciences students in their 4th year or in the PharmD for Practicing Pharmacists program. As preceptors, we desired 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. One strategy was inviting other healthcare leaders to facilitate discussions on a variety of leadership topics with cohorts of students on leadership placements across the province during each block from 2021 onwards.

Goals: 1) To help students enhance their theoretical and practical knowledge, reflect upon their own experiences and form relationships with other healthcare leaders through facilitated leadership topic discussions and 2) To examine and adapt our approach to facilitated discussions based on student and preceptor feedback.

Description: Preceptors across Alberta partnered to create, coordinate and facilitate discussions on leadership topics for pharmacy students. Examples of topics included authentic leadership, situational leadership, change, facilitation skills, vulnerability, overcoming imposterism, psychological safety, persuasion & influence, delegation, and systems thinking. Twenty-eight preceptors and sixteen students responded to an anonymous, voluntary survey with a mix of open and closed-ended questions on a Likert scale between 2021- 2023.

Effectiveness of the Initiative: Responses revealed that students valued learning about leadership experiences with a group of their peers, leadership concepts were reinforced through placement experiences and project work and 100% of students would recommend a leadership placement to a peer. Preceptors also valued the discussions and incorporated the learnings into the placement experiences. The key findings will be shared with preceptors and pharmacy leaders and their input will help inform a sustainability plan for offering this in ongoing placements. Creating opportunities for shared learning during elective experiential education placements supports a culture of learning for preceptors and learners. Facilitated leadership discussions are a province-wide coordinated approach that helps enhance knowledge, skills, relationships and integration of concepts into practice during experiential leadership placements.

PE-36

Pharmacists' experiences of precepting during Alberta wildfires

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Background: In 2023, Alberta was affected by record wildfires affecting healthcare facilities in North Zone Alberta Health Services (AHS). During this time, 21 pharmacy students were assigned to 19 preceptors in the North Zone AHS. Preceptors faced challenges of uncertainty and additional responsibility of precepting while under threat of wildfires. Understanding this experience can direct how managers and the experiential education team can support pharmacists and students during a natural disaster and emergency response.

Goals: 1) To describe the Emergency Response Student Placement Communication approach developed and 2) To understand the experiences of Alberta pharmacists precepting learners during a natural disaster and emergency response to identify supports required for future placements in similar circumstances.

Description: Prompted by the first evacuation, the pharmacy managers, clinical practice leaders and the institutional faculty liaison collaborated to create a proactive communication plan regarding student placements. After the disasters, focus groups were conducted with pharmacists who had precepted at sites impacted by the wildfires to understand their experiences and identify supports required for future similar circumstances. Inductive thematic analysis of recorded and transcribed interviews was performed.

Effectiveness of the Initiative: Clear and timely communication was an imminent issue. The Emergency Response Student Placement Communication plan identified what needed to be communicated and by who at each phase of an emergency. Pre-placement communication for students was developed to direct students to updates, prepare them for "what if" situations, and who to contact with concerns. In the preceptor focus groups, major themes emerged: work and placement changes, communication, well-being and recommendations. Workload changed with increased patient transfers. The situation changed rapidly, and student activities were adapted accordingly. Updates on safety alerts came primarily through the media, and communication regarding rotations often lacked timely direction. Safety was a concern due to highway closures and concern for family. Lone practitioner sites missed colleague supports. Recommendations were increased engagement of preceptors in decision making around rotation changes, a debrief after the placement, proactive communication plan, and alternative rotation plan.

PE-37

A glance at a century of excellence in pharmaceutical education at Université Laval

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Background: In June 2024, we will inaugurate the festivities commemorating the 100th anniversary of our Faculty of Pharmacy. The history of the Faculty of Pharmacy is too rarely brought to light. Tracing the achievements of the faculty members who, through their convictions and actions, have left their mark, allows us to understand the significant events that have occurred over a century.

Goals: To summarize the significant developments and milestones in the 100-year history of the Faculty of Pharmacy at the Université Laval. To this end, Gilles Barbeau and Marthe Huot, both Faculty alumni, undertook the task of gathering information and towards the publication of a well-documented commemorative book.

Description: The establishment of the first School of Pharmacy affiliated with the Faculty of Arts at Université Laval was in 1924. Dr. Alfred-Émile Francoeur served as its inaugural director. The director, Marquis, held the position for more than 37 years (1929-1967). Under his leadership, there was a significant expansion in education and research, marked by the recruitment of young professors holding doctoral degrees obtained abroad. In 1990, the school relocated to the Ferdinand-Vandry Pavilion, and in 1997, it attained the status of a faculty. The study program leading to pharmacist training underwent major adjustments over the years to meet the growing needs of the profession. The evolution of clinical education, hospital training, and the establishment of the entry-to practice doctor of pharmacy (PharmD) program in 2011 are significant aspects of the transformation. In 1980 the hospital pharmacy training was offered as a post-graduate certificate transitioning into a master's program in 1992. The last decade has prepared the Faculty of pharmacy for a promising future, based on a 50% increase of faculty members, doubling of the number of graduate students and grant incomes, and the obtention of 4 new research chairs. The Faculty of Pharmacy is nowadays developing rapidly, demonstrating innovation, and tackling new challenges.

Effectiveness of the Initiative: The history of the Faculty deserves to be known. It is crucial to foster historical awareness and document the accomplishments of the past century. This documentation will be made accessible for the benefit of future generations.

PE-38

Unveiling nanoprograms: A revolutionary approach to continuous education tailored for practicing pharmacists

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Background: The demand for pharmacists to uphold competency levels throughout their career is pressing. Practicing professionals have voiced concerns about the prolonged and theoretical nature of conventional university programs. With recent changes in Québec's legislation expanding the scope of pharmacists' practice, there is a clear need for the creation of succinct and focused programs that align with the evolving demands of their professional responsibilities.

Goals: To describe an innovative approach to continuous education for practicing pharmacists called “nanoprograms”.

Description: The nanoprogram framework empowers practicing pharmacists to curate personalized learning experiences by selecting from various thematic nanoprograms. Each nanoprogram, equivalent to 2 university credits, spans 6 to 10 months and is developed by expert pharmacists. Our nanoprograms have engaged nearly 400 pharmacists across diverse themes like Geriatrics, Cardiology, Diabetes, Digital technology, and Mental Health. Through practical learning scenarios, the nanoprograms enhance knowledge and skills in managing pathologies within a specific domain. Flexible for practicing pharmacists, they incorporate active learning methods such as lectures, videos, case resolutions, synchronous meetings, and a community of practice with forum discussions. Encouraging reflection and aligning strategies with professional goals, the nanoproject offers a practical application of acquired knowledge, fostering seamless integration into real-world scenarios. The evaluation of nanoprograms attests to their well-balanced approach, providing practicing pharmacists with an optimal blend of workload, flexibility, and practical learning experience.

Effectiveness of the Initiative: The nanoprograms represent concise and meticulously structured training initiatives, prioritizing a rigorous focus on practical application. Tailored for practicing professionals, this adaptable format allows pharmacists to align it with their daily practices, empowering them to navigate the pharmacotherapy of specific pathologies proficiently. This well-appreciated pedagogical framework facilitates the prompt application of acquired knowledge into practical workplace applications. The culmination of the program involves completing a nanoproject, enabling pharmacist to fulfill their roles effectively with heightened competence. The excellence of mental health nanoprogram’s continuing education was recognized through an institutional award.

PE-39

Instilling cultural safety: Supporting sexual and gender diversity in pharmacy

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Background: The University of Waterloo School of Pharmacy introduced a second-year course on cultural sensitivity during fall 2023. The course invites students to explore topics regarding equity deserving groups, including 2SLGBTQ+ people. The author provided a 2-hour lecture within this new course to prepare students to care for 2SLGBTQ+ patients.

Goals: To evaluate undergraduate pharmacy students' confidence and attitudes regarding 2SLGBTQ+ patient care subsequent to an educational intervention. The intent of the intervention was to increase student understanding of the 2SLGBTQ+ community and the challenges these patients face in pharmacy settings.

Description: The lecture included lived experience, interactive polling, and didactic content. The main topics were understanding the relationship between sex, gender identity, gender expression and sexual orientation, challenges 2SLGBTQ+ patients experience in pharmacies, health disparities among 2SLGBTQ+ people, and fostering inclusive pharmacy practices. Students completed a pre and post 7-item survey and rated their confidence and attitudes about caring for 2SLGBTQ+ patients. Two open response questions asked students whether there was anything they would like the presenter to know and whether they identified as a member of the 2SLGBTQ+ community themselves. Anonymous survey data were collected using a google form and were analyzed using Wilcoxon signed-rank tests. The qualitative data were evaluated by reviewing written responses and identifying common themes within the comments.

Effectiveness of the Initiative: Twenty-three students attended the lecture and twenty-one completed both the pre and post surveys. Students reported a statistically significant increase in their confidence to explain important 2SLGBTQ+ terms and to describe the challenges faced by 2SLGBTQ+ patients in pharmacies. Students increasingly recognized that 2SLGBTQ+ people have different health care needs compared to the broader population and greater comfort communicating in an affirming manner. Five students self-identified as part of the 2SLGBTQ+ community. Students reported that the lecture was very affirming to hear, that it should be mandatory, and being disappointed by the low turnout among their peers to the lecture.

PE-40

Piloting universal design for learning approaches in a final year online pharmacy course

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Background: Students in UBC's Entry-to-Practice Doctor of Pharmacy Program participate in online courses concurrently with experiential learning opportunities throughout their final year of the program. Universal Design for Learning (UDL) is a pedagogical framework for improving accessibility and engagement for all learners.

Goals: To pilot and evaluate UDL informed course modifications.

Description: UDL advocates for providing students multiple means of representation, engagement, and action in their coursework. In one course UDL was piloted and flexibility was prioritized to increase students' sense of belonging, and to support their development as self-regulated learners. Course modifications made to align with UDL included: (1) Representation: Including a course accessibility statement and improved visibility of learning management system supports; clarifying assignment due dates; adding captions and transcripts for all pre-recorded content (2) Engagement: Including Course Coordinator positionality and equity, diversity and inclusion statements in course welcome, and (3) Action: self-registration in preferred academic term, allowing flexibility in completing some assignments, and enabling multiple means of submissions for discussions (written, video or audio recordings).

Effectiveness of the Initiative: Those enrolled in the course were surveyed at the end of the term. All respondents (n=15) agreed that self-registration in their preferred term (as opposed to program level registration to balance cohorts) was an improvement. Students appreciated the flexibility of the course design, with 93% (n=15) agreeing that the flexibility of course delivery allowed them to balance coursework and other responsibilities and helped them take ownership of their own learning: "Being on rotations, this course was designed in a way that helped me incorporate it into my schedule as I saw fit." Students also appreciated the flexibility of submissions for discussion assignments.
Students indicated that the course helped them feel part of a community of pharmacists, with 86% (n=14) indicating agreement. The Course Coordinator's welcome video encouraging engagement and explaining important aspects of the course was also seen as beneficial (80% and 93% respectively). All respondents also indicated that assignment due dates were clear. These pilot findings have guided continuous improvement in the course, and we will iteratively evaluate these course modifications in the second term. Cumulative results will be shared.

PE-41

Dispensaries and drugs: A dice-driven branching narrative case resolution framework for experiential learning in paper cases

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Background: Problem-based learning cases and examination questions commonly assume that a correct answer implies the chosen treatment's effectiveness and safety. However, seemingly correct choices may lead to treatment failure or side effects, while incorrect decisions may surprisingly result in treatment success without adverse effects. Allowing learners to navigate case resolutions based on their decisions provides an opportunity for management reasoning development and skills in adjusting pharmacotherapeutic plans.

Goals: This initiative aimed to develop and pilot a framework for branching narrative case resolution, utilizing dice rolls to immerse learners in the consequences of their decisions.

Description: The branching narrative case resolution framework was developed using the general statistical principles of Dungeons and Dragons. The case resolution framework is divided into 6 steps: 1) For a given case, identify the best available evidence for effectiveness and safety. 2) Transform efficacy and safety event rates into 5% increments. 3) During the case resolution, after the learner has made a decision, the learner then rolls a 20-sided dice twice to determine the results for safety and efficacy. 4) The game master then narrates what happens to the patient based on the learner's rolls. 5) Based on the outcomes, learners then must adjust their pharmacotherapeutic plan, deciding to continue or change therapy based on their therapeutic reasoning which can be discussed with the game master. 6) Continue steps 3-5 until an option is both safe and effective.

Effectiveness of the Initiative: The case resolution framework was piloted with three cases, including weight management and diabetic neuropathy, for 2nd and 3rd-year pharmacy students. Framework adjustments with pilot testing included specifying safety outcomes and including a maximum of 4-5 reasonable choices for a case. Anonymous survey results (n=60) revealed over 90% of learners agreed or strongly agreed that the format allowed them to experience how effective and safe a treatment is more than statistics alone, increased their tolerance to ambiguity, believed the activity was useful, easy to understand, and would play it again. Formal evaluation of learner experiences with the branching narrative case resolution design is needed including how this innovation impacts learner's management of uncertainty, management reasoning, and biases in decision-making.

PE-42

From networking to nation-wide initiatives: The building of the geriatrics special interest group

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Background: While experts in geriatrics are found in most pharmacy schools, they often experience a sense of isolation, functioning as a solitary entity within their programs. They grapple with the challenge of incorporating special populations content into an overloaded curriculum designed for therapeutics, with variable support. To facilitate collaboration, sharing of ideas and best practices, and networking, the Geriatrics Special Interest Group (SIG) was proposed for the Association of Faculties of Pharmacy of Canada, culminating in its inaugural event at the annual CPERC meeting in 2022.

Goals: The Geriatrics SIG aims to unite pharmacy educators and scholars with a focus or expertise in geriatrics from each pharmacy program in Canada. Its objectives include facilitating the exchange of approaches for geriatrics education and assessment, advocating for best practices in geriatrics education, creating shared resources, liaising with stakeholders to support geriatrics content and build capacity for research.

Description: The SIG meets quarterly with shared leadership of two co-chairs. The co-chairs networked across each school of pharmacy to identify and invite a lead geriatrics expert to join. Other participants were then invited, including those interacting with geriatrics curricula, such as skills lab SIG members. The SIG strives to be an inclusive space for geriatrics experts and novices, senior faculty, new instructors, and educators specializing in geriatrics across various curricular areas. The meetings initially begin with an update from each school, describing the context for their geriatrics curriculum and teaching experiences. Within the first year, generalized discussions led to the identification of needs and proposal of various projects.

Effectiveness of the Initiative: Despite an early 7:30am launch at CPERC in Newfoundland, the Geriatrics SIG successfully recruited and engaged members from across Canada. The SIG continues to grow and is now at 14 participating members. Centralized resource sharing was set up through a shared drive. A nationwide collaborative project has been initiated to study geriatrics content in our curricula to promote inclusion of geriatrics competencies. The SIG has also been invited to collaborate with the AACP Geriatrics SIG on an initiative to establish standards for entry-to-practice geriatrics pharmacy curricula.

PE-43

Implementation of a capstone exam series in an entry-to-practice Doctor of Pharmacy program

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Background: The Integrated Comprehensive Exam (ICE) is a summative capstone exam in the Medication Management (MM) course series in our Entry-to-Practice (E2P) Doctor of Pharmacy (PharmD) program. These five courses comprise 70% of the curriculum and are designed to integrate pharmaceutical sciences, therapeutics, and practice skills. The ICE is administered at the end of each course to assess consolidation of current and previous learning and knowledge.

Goals: To describe the implementation of a series of capstone assessments in Program Years (PY) 1 to 3 of the University of British Columbia's (UBC) E2P PharmD program.

Description: The ICE is administered following the second semester of PY1 and both semesters in PY2 and PY3. Approximately 224 students are enrolled annually in each year. The ICE is a must-pass course component comprised of two parts: Practical and Cases. The Practical Component follows an Objective Structured Clinical Exams (OSCE) format with interactive and non-interactive stations. Interactive stations utilize pharmacist examiners and standardized patients; examples include patient counselling and medication recommendations. Non-interactive stations include prescription assessment and drug information requests. The original Cases Component included a 35-minute open-book work-up of a novel patient case, followed by a 10-minute oral and two 20-minute written exams. The oral exam was recently removed and now includes only a single 55-minute written exam. The ICE is blueprinted on experiential education learning objectives and standard set for the expected level of performance for that PY.

Effectiveness of the Initiative: Many pharmacy programs utilize capstone assessments; however, there is a paucity of literature describing a summative capstone examination that is administered at fixed intervals throughout the program as a measure of readiness to progress to the subsequent didactic or experiential course. To our knowledge, no pharmacy program has described the use of a novel capstone assessment format like ours, which integrates OSCE with a case-based assessment. A major benefit is it provides us with a method of determining whether students meet program competencies and are ready for practice. Challenges of ICE include labour-intensive logistics, cost, and shortage of pharmacist examiners. Next steps include linking ICE with experiential rotation performance and program success.

PE-44

Teaching sustainable development at the Faculty of pharmacy at Université Laval

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Background: The Faculty of Pharmacy of Université Laval aims to train pharmacists who can make a real positive impact on sustainable development. To this end, we conducted an exhaustive review of the course syllabus to identify concepts related to the United Nations Sustainable Development Goals. This could include topics such as reducing pharmaceutical waste, promoting environmentally friendly practices in drug manufacturing, advocating for equitable access to healthcare, and addressing social determinants of health. It's crucial for future pharmacists to understand the broader implications of their to contribute positively to sustainable development efforts.

Goals: The aim was to make an inventory of sustainable development objectives integrated into the various PharmD undergraduate courses and to suggest recommendations for improvement wherever appropriate.

Description: Seven PharmD students completed their internships in non-clinical pharmacy related milieu. They participated in various workshops on sustainable development. They subsequently conducted an exhaustive analysis of all course syllabi of the PharmD program according to the Sustainable Development Goals adopted by the United Nations in 2015. This analysis enabled us to classify the courses according to the 17 sustainable development goals. Of the 44 eligible mandatory courses, 31 (70%) already contain concepts included in the sustainable development goals. Of the courses identified, 66% address goal 3 (Good health and Well-being), 20% address goal 4 (Quality education), 18% address goal 12 (Responsible consumption and production), 11% address goal 10 (Reduced inequalities), 9% discuss goal 2 (Zero hunger), 7% talk about goals 11 (Sustainable cities and communities) and 13 (Climate action) and 2% of our courses talk about goals 14 (Life below water),15 (Life on land) and 17 Partnership for the goal). Recommendations have been made for courses in which no sustainable development elements have been identified. For instance, a recommendation concerning impacts of inappropriate drug destruction on the environment was made for a particular course.

Effectiveness of the Initiative: An in-depth analysis of all the courses syllabi revealed that sustainable health issues are already present in several of the PharmD courses. The recommendations made for all the courses will then be analyzed to consider their inclusion and application in the PharmD curriculum.

PE-45

Building Blocks of Inpatient Pharmacy Practice Experience in the Entry-to-Practice PharmD Curriculum.

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Background: Experiential education is a critical component of the PharmD curriculum, offering immersive learning opportunities. However, student feedback from post course evaluations indicates that they feel unprepared to participate in inpatient (i.e., hospital) practicums leading to increased challenges, undue anxiety, and a lack of confidence. A key curriculum observation is the limited opportunities for students to practice applying their knowledge and skills to inpatient cases of varying complexity along with provision of tailored, timely feedback.

Goals: We present an overview of the development and implementation of a program-wide initiative that involved the creation and adaptation of learning activities to simulate practicum experience (SPE). This initiative was undertaken in collaboration with frontline practitioners, with the overarching goal of enhancing students' perception of preparedness and confidence for their inpatient practicums.

Description: Seven practicing pharmacists were recruited to contribute real-life cases with varying levels of complexity. These cases incorporated all essential data readily available in practice settings. Additionally, the pharmacists were responsible for developing a comprehensive facilitation resource, serving as a guide for case deployment and student feedback. To ensure the quality and appropriateness of the cases, three additional pharmacists and a faculty member reviewed each submission. All case content was uploaded to an academic electronic health record system and integrated into an activity designed to simulate the practicum experience by enabling students to apply their clinical skills and receive timely feedback.
Pre and post activity questionnaires were deployed to students to assess the effectiveness of the SPE on improving their reported level of preparedness and confidence to undertake inpatient practicums.

Effectiveness of the Initiative: Fourteen cases were developed over two years. Analysis of student surveys showed notable trends. Students consistently rated their preparedness higher than their confidence levels across various tasks, indicating a potential confidence gap, and there is evidence that the SPE interventions may have positively impacted students' confidence levels. Further investigation is needed to explore this identified gap in student confidence along with ongoing impact of SPEs, to ensure that students are adequately equipped for the challenges presented during inpatient practicums, fostering a more seamless transition from academic learning to real-world practice.

PE-46

Student as partners - A pedagogical framework to redesigning a pharmacy practicum course

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Background: There is growing evidence that suggests students play a valuable role in curriculum co-development (Bovill et al., 2011). While the concept of hiring students to work under the supervision of faculty members is a tried-and-true model, students as partner (SaP) is a framework for instructors and students to work in partnership to enhance and innovate curriculum.

Goals: 1) Describe our SaP approach and operations in the context of redesigning a fourth-year practicum course, 2) Evaluate this student-faculty partnership

Description: We received competitive funding from the UBC SaP program to redesign a pharmacy course. This 12-month curricular project had three parts. 1) ESTABLISHING PARTNERSHIP: Two pharmacy students and two faculty members ("the team") formed a partnership through a meet and greet. Students were intentionally selected based on their interests rather than academic grades and/or performance factors. As every member may have different motivations for partnership, the team created a project manifesto and project agreement and discussed the spirit of this student-faculty partnership. 2) PRACTICING PARTNERSHIP: Regular team meetings were held, and everyone made journal entries on a regular basis. Leadership and project management responsibilities were shared amongst the team. 3) EVALUATING PARTNERSHIP: At the conclusion of the project, everyone completed a final self-reflection, participated in a debrief meeting, and journal entries were analyzed.

Effectiveness of the Initiative: Students and faculty reported broadly positive experiences. In establishing this partnership, albeit demanding more effort than traditional hierarchical structures, students experienced greater autonomy and agency in curriculum design and consultancy. This afforded opportunities for them to develop and practice their collaborative leadership and project management skills. Students also felt more at ease with and connected to faculty members, which helped to minimize power dynamics. On the other hand, faculty members appreciated student perspectives which led to a more innovative curriculum. Faculty members noted that it was sometimes challenging to share authority and navigate tensions, particularly in situations when feedback is given to students. Lastly, the redesigned practicum course was well received by preceptors and participating students. These results are encouraging and provides further evidence for partnership in learning and teaching.

POSTERS – PHARMACY PRACTICE

PP-1

Factors influencing implementation of point-of-care testing for acute respiratory infectious diseases in community pharmacies: A scoping review using the consolidated framework for implementation research

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Purpose: Emerging evidence suggests pharmacy-based point-of-care (POC) testing for acute respiratory infectious diseases is beneficial, but not widely implemented. A theory-informed review to understand the factors influencing service implementation is lacking. To examine the extent, range, and nature of research available on enablers and barriers to POC testing implementation for infectious respiratory diseases in community pharmacies. To identify the theoretical constructs underpinning identified enablers and barriers using the Consolidated Framework for Implementation Research (CFIR).

Methods: Scoping review guided by the JBI Manual for Evidence Synthesis. A comprehensive search from inception to June 28th, 2022, was conducted using Medline, Embase, CINAHL, Cochrane Library, and ProQuest dissertations without date or language restriction. Eligible articles investigated barriers and/or facilitators to strep throat, influenza, C-reactive protein, and COVID-19 POC testing in community pharmacies. Two reviewers independently performed title & abstract screening, full-text screening, and data extraction. The research was classified according to the stage of implementation and the extent to which theory was articulated/applied to explore implementation factors. Content analysis was conducted according to a pre-established framework and concepts were mapped to the CFIR.

Results: Forty-three studies were included. Most originated from the USA (n=24; 56%) and investigated strep throat. The majority were testing/initial implementation projects (n=23; 54%) conducted in urban centers (n=17; 40%). Thirty-six (84%) studies used quantitative methodology, while 6 (14%) were qualitative. Only four studies (9%) used theory to guide their inquiry. The 321 individual barriers and facilitators extracted collapsed into 124 implementation factor categories. These categories mapped onto 21 of the 38 CFIR constructs covering all 5 domains. The majority of studies identified factors relating to the domains “Outer setting” (n=35/43; 81%), “Intervention characteristics” (n=24/43; 56%), and “Inner Setting” (n=22/43; 51%). The most commonly identified constructs were “Patient needs and resources” (n=21/43; 49%), “External policy & incentives” (n=17/43; 40%), and “Relative advantage” (n=17/43; 40%).

Conclusion: A large volume of research explores factors influencing the implementation of pharmacy-based respiratory infectious disease POC testing services, but few studies use qualitative or theory-informed methods. Knowledge of the wide range of facilitators and barriers identified can help pharmacy managers and researchers design strategies to support successful service implementation.

POSTERS – PHARMACY PRACTICE

PP-2

Data driven quality improvement in community pharmacy: Evaluating the use of audit and feedback (A&F) interventions to improve pharmaceutical care

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Purpose: Even before the pandemic Canada's Healthcare system was strained. Quality indicators have been outlined by the Ontario College of Pharmacists (OCP) to aid pharmacist best practice. Audit (measurement of clinical performance) and feedback (relaying these results back to professionals) is a known quality improvement initiative. Prior to launching an Audit & Feedback (A&F) tool for community pharmacies, it is imperative to engage with pharmacists to ascertain the most optimal design for an A&F tool to be used in community pharmacies.

Methods: An A&F tool was developed by the research team. One-on-one interviews were conducted with community pharmacists practicing in Ontario to identify perceptions and preferences for the design and utilization of the A&F tool. A process evaluation approach was used where interviews were conducted, and the data was analysed using a qualitative descriptive approach. Results from the interviews were used to update the software design of the tool to consider the design and logistical considerations identified in the interviews.

Results: Ten Ontario based community pharmacists were interviewed. Most pharmacists were not well versed with the quality indicators issued by the OCP with concerns raised as to how the indictors can be applied/ implemented in their current practice. Pharmacists welcomed the tool in theory but struggled to see how it could be effectively utilized in improving their practice. They stated factors such as time constraints, staffing, financial incentives, and accessibility as considerations in the successful implementation of an A&F tool. Pharmacists stated they need the tool available in multiple formats (i.e. online portal, paper, email) to guarantee utilisation of the tool.

Conclusion: Pharmacists welcomed the A&F tool in theory but were apprehensive about the tool in practice. Concerns were raised about implementation and seamless integration of the tool in practice. For the A&F tool to be effective it must showcase its value and how it can be used to improve practice while not simultaneously affecting workloads and workflows.

POSTERS – PHARMACY PRACTICE

PP-3

Developing an Ontario community-pharmacy based minor ailment service evaluation framework (DOME)

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Purpose: In January 2023, a new minor ailment (MA) prescribing service was introduced in community pharmacies in Ontario, including prescribing for antibiotics. Initially the service allowed pharmacists to prescribe for thirteen minor ailments, with an additional six added in October 2023. To ensure the needs of patients are met and the service provides benefit to the health system, a robust evaluation is needed. Such evaluations can be qualitative (end user experience), quantitative (uptake and drug use) or process evaluations. Prior to conducting an evaluation, it imperative to build partnerships to develop aligned priorities for the evaluation of the MA service in Ontario.

Methods: In January 2024, twenty-five partners consisting of stakeholders, policymakers, regulators, academics, clinicians, and patient representatives were invited to participate in a prioritization study to ascertain evaluation priorities. This study used three distinct phases. First, a pre-workshop survey was conducted to generate a list of evaluation priorities, forming the foundation of the workshop. The one day in-person workshop consisted of a voting session to identify top priority evaluations determined by all participants. Participants also rated the importance, feasibility, capacity, and capability of each evaluation. Finally, a post-workshop summary was circulated to participants for feedback on evaluation design.

Results: Sixteen participants responded to the pre-workshop survey and attended the in-person workshop. Participants representing stakeholders, decisionmakers, policymakers, patients, academics, clinicians and pharmacy leaders. Participants welcomed the idea of evaluating MA services in Ontario, expressing an urgent need due to its rapid expansion. The selected top four evaluation priorities were (1) Patient and population outcomes; (2) Drug utilization and prescribing; (3) Access to care; and (4) operational and system infrastructure factors.

Conclusion: Participants recognized the importance of assessing the MA prescribing service in Ontario, to inform further expansion of the service. Patient and population outcomes was the highest priority evaluation voted by representatives of all groups. Discussions also emphasized system level and antimicrobial prescribing impacts. Participants agreed that challenges exist pertaining to access to certain population data, lack of pan-Canadian standards and the uniqueness of the Ontario system.

POSTERS – PHARMACY PRACTICE

PP-4

Cannabis and patient decisions regarding their rheumatologic medications doses: A provincial survey in Alberta

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Purpose: Patients with rheumatologic conditions use cannabis to address pain, insomnia, and mood disorders. With those symptoms treated, patients may consider reducing the dose of or discontinuing prescribed medications. The purpose of this study is to describe the adjustments patients make in their prescribed rheumatologic medications when they use cannabis.

Methods: A province-wide cross-sectional survey was conducted in Alberta assessing cannabis use and medication-taking behaviours of people with a rheumatologic condition. Participants were queried about their current use of medications and/or cannabis. Data were analyzed descriptively using STAT (v17).

Results: A total of 40,000 patients with coding for a rheumatologic disease were identified through Alberta Health records and 3302 (8%) completed the surveys. The mean age of respondents was 66.4±12.5 years. The majority (1702/3302, 51.5%) were females and (1811/3302, 54%) had osteoarthritis. Out of 2932 (89%) who completed the question about cannabis use, the majority (1351/2932, 46%) never used cannabis, 851(29%) reported previous cannabis use, and 730 (25%) reported current use. Approximately a quarter of current users (182/730, 25%) and a few past users (28/851, 3%) reported changing the dose or discontinuing a medication once starting cannabis. The most commonly reported medications that were discontinued or had a reduced dose were muscle relaxants (95/210, 45%), systemic steroids (37/210, 18 %), and disease-modifying rheumatoid drugs (14/210, 7%). The majority of patients (158/210, 75%) reported changing the dose or discontinuing medications on their own, while others (42/210, 20%) reported that it was a decision made by their prescriber.

Conclusion: Cannabis use was reported among patients with rheumatologic conditions. Cannabis use may be associated with patient decisions to reduce the dose or discontinue prescription medications. While some of these medications are high risk in older adults and it may be beneficial to discontinue their use, others like Disease-Modifying Antirheumatic Drugs (DMARDs) are particularly concerning as the patient will lose the disease-modifying outcome.

POSTERS – PHARMACY PRACTICE

PP-5

Decision tools for patients with arthritis: A scoping review conducted to develop a decision tool

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Purpose: Arthritis patients describe a lack of or partial relief using prescription and over-the-counter medications, therefore many consider using cannabis. Deciding on cannabis use is challenging because of a lack of strong guidelines and interpatient variability in preferences. A decision tool facilitating patients' decision-making with their clinicians (shared decision-making) could help mitigate this problem and improve satisfaction. No decision tool for cannabis currently exists at this time. Therefore, we aim to describe the development and evaluation of decision tools addressing arthritis treatment options. This is the first step to developing a cannabis decision tool for patients with arthritis.

Methods: We conducted a literature search with the support of a health sciences librarian, searching multiple databases (including, EMBASE, Medline, and CINAHL) using the PRISMA extension for scoping reviews. Studies included were: full texts, empirical research, and published in English. Studies excluded were: not focused on addressing the development or evaluation of SDM tools. For each tool, we reviewed its type, content, and research methods or theories used to develop and evaluate.

Results: A total of 1639 articles were screened by title and abstract, then 40 studies addressing 31 decision tools were included. Most of the tools (14/36, 39%) addressed medications for osteoarthritis. Less than a third of the tools (9/31, 29%) were developed based on patient input, mostly from white women. One study only represented Indigenous populations (1/31, 3%). There was a variation in reporting the details of development and evaluation. The International Patient Decision Aids standards (IPDAS) criteria were commonly reported as the development basis (14/31, 45%), either alone (5/31,16%) or in combination with other bases (9/31, 29%). The most commonly used evaluation measures were the Decisional Conflict Scale (14/40, 35%), acceptability (5/40, 13%) and the preparation for decision-making scale (4/40,10%).

Conclusion: Development and evaluation processes for arthritis SDM tools were conducted based on input from populations with minimal diversity. Prioritizing more diverse populations for users' input to include men and women from disadvantaged populations is essential. A transparent and systematic reporting of development and evaluation processes will add rigour to future decision tools. Using established checklists for reporting development and evaluation is encouraged.

POSTERS – PHARMACY PRACTICE

PP-6

British Columbia community pharmacy during COVID-19: Identifying provider challenges and opportunities through Google reviews

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Purpose: The COVID-19 pandemic impacted community pharmacies as they faced unprecedented challenges in providing patient care. Online reviews have been one way in which patients can comment on their satisfaction with the services offered from their local pharmacies. Our objective was to analyze Google Reviews collected in the rapidly changing pharmacy landscape before and after the COVID-19 restrictions in BC to better understand opportunities and challenges for community pharmacy teams.

Methods: Google Reviews were scraped using Outscraper, a data scraping and extracting tool, before and after the COVID-19 pandemic restrictions were announced. Two researchers independently analyzed each review. Reviews were categorized as positive, negative, or neutral and then further categorized into counter-side manners, cost, wait time, knowledge, scope of practice, or other. Comments about COVID-19 were further sub-categorized into prevention measures, vaccine related, testing related, or other.

Results: Our study showed that 75% of patients who left a Google Review had a positive experience before the COVID-19 restrictions compared to 69% after the COVID-19 restrictions. In both before and after COVID-19 periods, counter-side manners were the most frequent discussion (>50%) while scope of practice was rarely mentioned (<2%) in both positive and negative reviews. We found 75% of comments regarding COVID-19 prevention measures, vaccine and testing were positive. For positive reviews, 86% of the comments were about availability/delivery of the vaccine. Negative reviewers commented mostly on vaccine related issues (31%), followed by testing availability (24%) and prevention measures (12%).

Conclusion: Our data displayed that reviewers found counter-side manners as the most noticeable aspect of their pharmacy experience which displays the importance of training pharmacy teams on how to interact with patients with respect. Of note, only 2% of all comments included pharmacist scope of practice meaning reviewers did not use this service or find the service noteworthy. This presents as an opportunity for our profession to advertise and better utilize our expanded scope. Furthermore, our study highlights the positive impact community pharmacies made in providing supplies and vaccinations during a pandemic and that reviewers had a negative experience when they were unable to access these services at their local pharmacy.

POSTERS – PHARMACY PRACTICE

PP-7

The pharmacist's role in beta-lactam allergy assessment: A scoping review

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Purpose: Beta-lactam allergies are commonly reported by patients and, if left unchallenged, may result in antimicrobial therapy being unnecessarily restricted. As a result, clinicians may choose to use less effective therapies that are often more expensive and have worse adverse effect profiles. Allergy assessment is an opportunity for pharmacists to help improve antimicrobial stewardship. The main objective of this scoping review is to determine what literature is available on the pharmacist's role in beta-lactam allergy assessment and testing.

Methods: A comprehensive literature search was conducted in MEDLINE, EMBASE, SCOPUS, and Cochrane Library for articles published in the English language from January 1974 to June 2023. These were screened for eligibility by two independent reviewers. Inclusion criteria included articles that described the involvement of pharmacists in any care setting who assessed and intervened or managed beta-lactam allergies.

Results: The search yielded 1047 unique articles. After screening, 40 articles met inclusion criteria. Most articles were either observational cohort or quasi-experimental study designs. The clinical context of pharmacists conducting allergy assessments varied. The most prominent intention for conducting beta-lactam allergy assessments was therapy modification, with 14 articles discussing the aim of switching from non-preferred antibacterials. Many of the protocols described pharmacists using a structured patient interview and sometimes penicillin skin testing and oral challenges. Most studies reported no adverse events or allergic reactions secondary to pharmacists conducting allergy assessments. Several studies reported on the effectiveness of pharmacists' beta-lactam allergy de-labelling or the increased use of beta-lactams with decreased use of non-preferred antibacterials. The included studies were conducted exclusively with hospital-based pharmacists.

Conclusion: This review demonstrated that pharmacists are capable of assessing and managing beta-lactam allergies in a safe and effective manner, both independently and collaboratively on interdisciplinary teams, and that there are several ways that pharmacists can get involved with this. Future studies should explore the role of community pharmacists in these assessments.

POSTERS – PHARMACY PRACTICE

PP-8

Implementation of an antimicrobial stewardship intervention to improve management of bacteriuria and candiduria in hospitalized adults

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Purpose: Implement and evaluate a multi-faceted antimicrobial stewardship (AMS) intervention on antimicrobial prescribing for bacteriuria and candiduria.

Methods: A multifaceted, theory-informed AMS intervention that included virtual education and unit-level audit and feedback was developed by our team. The theoretical domains framework and COM-B model linked to the Behaviour Change Wheel were used in intervention development. Our team included clinicians with expertise in infectious diseases and antimicrobial stewardship. A synchronous case-based virtual education session for healthcare providers was delivered October 26th and November 1st, 2022. Audits were completed retrospectively using administrative records for patients with a positive urine culture on hospitalist units (HUs) at 4 community hospitals in Nova Scotia (NS). Antimicrobial prescribing appropriateness was assessed by pharmacists and an infectious diseases physician on the team. An on-site clinical pharmacist champion delivered feedback to multidisciplinary HU teams providing direct care to patients every 1-2 months for one year. Appropriateness of antimicrobial prescribing was compared before (November 1, 2021 – October 31st, 2022) and after (November 1, 2022 – October 31st, 2023) implementation of the intervention using Chi-squared analysis. A time series analysis is underway

Results: During the study period, 27.5% of 3,426 urine cultures completed on study patients were reported positive. Pre-implementation, 318 patient encounters were included and 302 encounters were included post-implementation. Overall appropriateness of antimicrobial prescribing and use of antimicrobials for asymptomatic bacteriuria (ASB) before and after implementation of the intervention showed little change (55.5% vs 56.5%, P = .589) and (58.0% vs 55.9%, P = .622), although intervention impact varied by hospital. Two study sites showed a 10.7-15.7% decrease in the proportion of patients with ASB receiving an antimicrobial while 2 study sites showed a similar increase in antimicrobial use for ASB.

Conclusion: Inappropriate antimicrobial prescribing for bacteriuria and candiduria remains common. Failure of the intervention to improve prescribing may have occurred due to a wide range of factors such as challenges with implementation or external factors including changes in patient volume, complexity, or staffing. Further research is ongoing to explore potential factors and define facilitators and barriers to successfully implement interventions to improve antimicrobial prescribing in this population.

POSTERS – PHARMACY PRACTICE

PP-9

Lyme Disease chemoprophylaxis prescribing before and after pharmacist prescriptive authority in Nova Scotia

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Purpose: To describe the uptake of pharmacist prescribing for Lyme disease chemoprophylaxis in Nova Scotia (NS).

Methods: A retrospective cohort study using health administrative data 16 months before and after pharmacists were authorized to prescribe Lyme disease chemoprophylaxis (August 1, 2021) was performed. All dispensations of a single dose of oral doxycycline from a community pharmacy in NS were included. Data included date of single dose doxycycline dispensation, county where doxycycline was dispensed, and prescriber type (pharmacist, physician, nurse practitioner, other). Comparisons of dispensations were completed before and after pharmacists gained prescriptive authority and relative to other prescribers. Dispensations were described descriptively.

Results: Over the study period, 12549 single dose doxycycline prescriptions were dispensed in NS. Before pharmacist prescribing was implemented (April 1, 2020 to July 31, 2021), 3900 single doses of doxycycline were dispensed. After pharmacists' scope was expanded to include prescribing for Lyme chemoprophylaxis (August 1, 2021 to November 30, 2022), 8649 single doses of doxycycline were dispensed. The percentage of pharmacist prescribers increased from 1.3% to 63.3% following implementation of expanded scope. Lunenburg (42/1000), Queens (34/1000) and Yarmouth (31/1000) counties had the highest rate of single dose doxycycline prescriptions per capita.

Conclusion: After authorization of pharmacist prescribing for Lyme disease chemoprophylaxis, an increase in single dose doxycycline prescriptions was observed in NS. Pharmacists have become the primary prescribers for Lyme disease chemoprophylaxis in the province. This suggests that pharmacist prescribing for this indication provides patients with increased access to post-tick exposure care and may decrease burden on other areas of the healthcare system.

POSTERS – PHARMACY PRACTICE

PP-10

Antimicrobial stewardship targets in pediatric community-acquired pneumonia - Where do we stand in the post-COVID era?

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Purpose: Given the high incidence of viral respiratory tract infections in children, recent supply problems for several first-line antibiotics used in the treatment of community-acquired pneumonia (CAP) in children (in particular amoxicillin), as well as the potentially unjustified use of antibiotics for the treatment of CAP which could be of viral origin, we wanted to establish a current portrait of the antimicrobial treatment for CAP in children.

Methods: This is a descriptive, retrospective study. Medical records of patients < 18 years admitted for uncomplicated CAP between Aug 1, 2022 and Oct 31, 2022 were reviewed. Children with immunosuppression, suspected aspiration or complicated pneumonia, or cystic fibrosis were excluded.

Results: In total, 169 children were included in the study. Mean age was 2,7 years, with most of the children (120/169; 70%) between 1 and 5 years old, and attending daycare(127/169; 75,1%). Approximately half of the children (90/169) needed oxygenotherapy upon admission. The mean duration of fever (including the period before emergency visit) was 4,7 ± 4,8 days. Almost all children were tested for the presence of respiratory viruses. At least one virus was detected in 95/161 (59 %) of children, with rhinovirus/enterovirus (46,3%) and respiratory syncytial virus (43,2%) being the most frequently reported. Aminopenicillins were the first-line antibiotics most frequently prescribed (76/102; 74,5 %), with ceftriaxone/cefotaxime (15/102; 14.7%) the second most frequently prescribed antibiotic. Intravenous (IV) to oral stepdown was prescribed in 150/167 (89,9%) of the children, with amoxicillin (76%), amoxicillin-clavulanate (9,5%) and cefprozil (4,1%) most frequently used. Mean total duration of the antibiotic treatment was 8,5 ± 3,0 days. Median hospital length of stay was 2,1 days (IQR 1,5-3,3).

Conclusion: Globally, the choice of initial antibiotic treatment of uncomplicated CAP in healthy children is consistent with current guidelines. However, treatment duration was highly variable and remained long compared to actual recommendations of 5 to 7 days, especially considering the high proportion of children who tested positive for respiratory virus. Indeed, most children received antibiotics despite a positive viral test. Clinicians may be reluctant to stop antimicrobials previously initiated by colleagues even as viral testing results become available.

PP-11

Environmental scan of post-graduation training in geriatrics for pharmacists in Canada

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Purpose: Although curricula in Canadian pharmacy schools have enhanced geriatric content to meet the growing need in our ageing population, the availability of education for practicing pharmacists is unclear. The purpose of this environmental scan is to identify and characterize the geriatric pharmacotherapy training offered to pharmacists in Canada. The findings of this scan will inform development of an advanced-practice training program for pharmacists specializing in the care of older adults.

Methods: We conducted a systematic search of the grey literature to identify educational programs for pharmacists or health care professionals (including pharmacists) focused on geriatrics/older adults. We conducted a search using Advanced Google and Bing utilizing a search strategy created with the assistance of a librarian. We further targeted specific domains of organizations who were identified as providers of pharmacy educational programs. We excluded conferences, geriatrics courses included in pharmacy degree programs, and geriatrics rotations included in pharmacy residency programs.
The results of the searches were catalogued, compared and results compiled. In order to identify additional courses, a survey containing the search results was sent to 34 individual practice experts across Canada and shared within a geriatric pharmacy practice network and an academic special interest group.

Results: Search of the grey literature identified two English-language Canadian programs that met the criteria. One program, delivered by a provincial pharmacy association, was designed to prepare practising pharmacists for the American Board-Certified Geriatric Pharmacist (BCGP) exam. A Geriatric Certificate Program offered to all health care professionals and delivered by a regional geriatric program in conjunction with a local university was the second program identified. Twenty-nine participants (27 pharmacists, one physician and one pharmacy technician) completed the survey. Ninety percent of participants were familiar with the BCGP preparation course, whereas only 14% were aware of the Geriatric Certificate Program. We identified two additional programs offered online in French through local universities. No additional English language courses were identified.

Conclusion: There is a paucity of post-graduation geriatrics training for pharmacists in Canada. Development of such a program will fill a currently unmet need for pharmacist training this area.

POSTERS – PHARMACY PRACTICE

PP-12

Environmentally sustainable opportunities for health systems: Metered-dose inhaler prescribing, dispensing, usage and waste at a tertiary academic center

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Purpose: *Canada's health sector's carbon footprint is amongst the highest in the world and is responsible for 4.6% of Canada's total greenhouse gas emissions. A quarter of Canada's health care greenhouse gas emissions are linked to pharmaceuticals, with metered dose inhalers (MDIs) contributing disproportionally high amounts. The aim of this study is to describe MDI prescribing, dispensing, usage and waste patterns at a Canadian tertiary care academic hospital.*

Methods: This study is a retrospective point-prevalence cohort study of 100 consecutive patients discharged from medical and surgical services and who were prescribed at least one MDI during their admission. Through health records review, data was collected to describe patient demographics, MDI prescribing, dispensing, usage and waste patterns. Usage and waste data was applied to annual purchasing data to estimate annual usage and waste. Financial cost was computed using local purchasing estimates while carbon cost was calculated using published estimates.

Results: In 100 consecutively discharged patients 315 MDIs were dispensed in total, of which 96 were unused. This represents 61440 actuations or doses dispensed, with 56773 (92%) of doses unused or wasted. Waste data was applied to annual estimates, with a calculated annual carbon footprint of 315.8 tonnes of carbon dioxide equivalents (tCO2e). We estimate that a 20% waste reduction would result in carbon savings of 68.5 tCO2e. If 20% of salbutamol prescriptions were switched to the dry powder inhaler alternative, terbutaline, a 14% reduction in waste would be required to offset the additional monetary cost.

Conclusion: This study suggests that 92% of MDI doses are unused and wasted. Many opportunities for waste reduction exist and would be associated with both financial and carbon savings that could be used to offset the cost of adding dry powder inhaler alternatives to formulary.

POSTERS – PHARMACY PRACTICE

PP-13

Potential risk factors among patients developing venous thromboembolism while admitted to the Dubé Centre for Mental Health

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Purpose: Venous thromboembolism (VTE) is a preventable hospital-acquired complication. The incidence rate of VTE in psychiatric inpatients is not well defined and has been described as occurring in 2-25% of inpatients. Within the past 15 years, the Dubé Centre for Mental Health (DCMH) clinical team has identified an ongoing trend of adult psychiatric inpatients developing acute VTE requiring urgent intervention during admission. This study aimed to identify risk factors associated with VTE development in psychiatric inpatients.

Methods: A retrospective case-control chart review of patients admitted to DCMH from January 2007 to December 2021. Cases were identified through the inpatient hospital pharmacy software by screening for individuals aged 18 and older who received anticoagulation for VTE treatment. Controls were randomly selected from patients with a discharge diagnosis other than VTE. The selected case-to-control ratio was 1:4. Data was extracted, coded, and comprehensively analyzed using descriptive analysis, univariate, followed by multivariable logistic regression analysis to identify risk factors associated with VTE diagnosis.

Results: A total of 32 cases and 159 controls were included. Case mean age was 52 years (SD 19.7), 65.6% (n=21) were female, and 65.6% (n=21) had no previous VTE. Comorbidities including cancer, cardiovascular conditions, insomnia, psychiatric-specific interventions such as electroconvulsive therapy and mechanical restraints, and acute medical diagnoses were independently associated with developing VTE (AORs>1.00, $p<0.05$). Substance use was significantly associated with decreased odds of VTE diagnosis (AORs=0.14, $p<0.001$). While causality cannot be inferred from case-control design, the observed association may be due to the high prevalence of substance use among controls or the way substance use was reported.

Conclusion: Psychiatric inpatients have unique risk factors that increase the likelihood of developing VTE. Point-of-care resources, such as a VTE prophylaxis risk stratification tool, targeting VTE prophylaxis for at-risk psychiatric inpatients could reduce patient morbidity and mortality.

POSTERS – PHARMACY PRACTICE

PP-14

Comparison of the management of status epilepticus in children before and after implementation of a treatment algorithm at CHU de Québec-Université Laval

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Purpose: Delayed treatment of status epilepticus (SE) is associated with increased morbidity and mortality. Rapid and effective management is therefore essential. Several studies have demonstrated that the management of SE is sub-optimal. The primary objective of the study was to compare SE management in children before and after implementation of a treatment algorithm at CHU de Québec-Université Laval (CHU) guiding both 1st and 2nd lines treatment. The secondary objective was to describe compliance of SE management with the algorithm after its implementation.

Methods: Cross-sectional population-based evaluative study with retrospective data collection. The study population corresponded to children aged 1 month to 17 years who were treated for SE at CHU between January 1, 2019, and April 1, 2023.

Results: 108 patients were included, 60 in the pre-implantation group (PRE) and 48 in the post-implantation group (POST). In both groups, the majority of patients received a benzodiazepine (BZD) as 1st line treatment (96.2% and 100%). In 2nd line treatment, patients in the PRE group received more BZDs than those in the POST group (37.5% and 26.1%). In 1st line treatment, mean lorazepam doses were suboptimal in both groups, 0.08 ± 0.03 mg/kg. Median time from hospital arrival to 1st line treatment was 7 minutes in the PRE group and 6 minutes in the POST group. In the POST group, for 1st line treatment, the choice of medication and doses administered were compliant with the algorithm for 97.7% and 53.5% of patients, respectively.

Conclusion: Implementation of a treatment algorithm was associated with little change. Administration times and medications received were similar between the 2 groups. Lorazepam doses remain sub-optimal. Reinforcement to medical teams is required.

POSTERS – PHARMACY PRACTICE

PP-15

Family planning for community pharmacists: Developing a pharmacist consultation checklist for assessing and prescribing emergency and hormonal contraception.

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Purpose: Pharmacists in British Columbia are currently empowered to assess and prescribe hormonal contraception, including emergency contraception. Our objective was to develop a pharmacist-assessment checklist for emergency contraception and hormonal contraception that addresses the following gaps found in existing tools: (1) selection of the most appropriate emergency and hormonal contraceptive product, (2) identification of patients with unmet contraceptive need, (3) documentation and communication of clinical service provision with sufficient detail to be useful for future provision of care.

Methods: To determine the current standard of care, a comprehensive review of the most recent North American clinical guidelines (Society of Obstetricians and Gynaecologists of Canada Contraception Consensus, US Medical Eligibility Criteria for Contraception Use), relevant tertiary references commonly used in clinical practice (BMJ Best Practice, Dynamed, e-CPS: Therapeutics, RxFiles) and existing pharmacist-prescribing tools (MedSask guidelines) was conducted. Relevant information regarding the assessment, product selection and monitoring of emergency and hormonal contraception was extracted and compiled to form new pharmacist prescribing-checklists to assist in daily clinical practice.

Results: The emergency contraception checklist is an assessment form that: (1) guides patient discussions to determine the best emergency contraceptive product, (2) identifies patients who would benefit from regular hormonal contraception. The hormonal contraception tool is an assessment checklist that: (1) Identify the best hormonal contraceptive product based on patient medical history, blood pressure, and BMI, (2) Identify the best combined hormonal contraceptive product for eligible patients (i.e. based on assessment of symptoms of hormone deficiency/excess and patient preferences). The checklists were developed as single-page forms to facilitate easy storage and retrieval for future patient care, as well as dissemination to other members of the patient's care team. During the initial pilot of these forms, 32 patients presented for emergency contraception, of which 10 patients had unmet contraceptive needs, all of whom were later prescribed hormonal contraception by the pharmacist or primary care provider.

Conclusion: The emergency and hormonal contraception checklists were successfully implemented in a busy community pharmacy practice. Next steps include seeing how these checklists may be implemented in other community pharmacy settings.

POSTERS – PHARMACY PRACTICE

PP-16

Evaluation of a protocol for managing the cyclosporine and nirmatrelvir/ritonavir drug-drug interaction in kidney transplant recipients

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Purpose: Nirmatrelvir/ritonavir (NRMr) has emerged as a crucial treatment for managing COVID-19 infections. Despite kidney transplant recipients (KTRs) on cyclosporine (CsA) being at higher risk for severe COVID-19, they have been systematically excluded from clinical trials. The well-documented drug-drug interaction between NRMr and cyclosporine necessitates an 80% dose reduction. However, evidence regarding the reinitiation of CsA is limited.

Methods: This retrospective study focused on KTRs undergoing therapy with CsA and NRMr. An algorithm was developed to simplify CsA dosing and monitoring. CsA levels were measured 2 days after completion of NRMr. For subtherapeutic or therapeutic levels, CsA dose was reinstated at 100%, with CsA levels reassessed one week later. For supratherapeutic levels, the reduced dosage was maintained for an additional 2 days before being reinitiated at 100% of the pre-NRMr dosage. Protocol adherence and various clinical parameters including CsA serum levels, serum creatinine, acute kidney injury (AKI), hospitalization, and mortality were monitored for 30 days post-NRMr therapy.

Results: Of 42 KTRs identified, 35 met eligibility criteria and were analyzed. 7/35 failed to follow protocol instructions. Initially, 83% of patients had CsA level within therapeutic range.
At the first follow-up (FU) 2 days post-NRMr, the average CsA level increased by 23 µg/L (P=0.51). There was a greater proportion of patients with sub and supratherapeutic levels compared to baseline (20% vs 9% and 31% vs 9%), which was partially associated to nonadherence to the protocol.
The majority of KTRs returned to therapeutic range at the second FU over a median of 9 days [IQR 8-12]. Of the 16 patients requiring additional monitoring, CsA levels returned to baseline values within 30 days.
Two AKIs, unrelated to COVID-19 treatment, were observed. Four hospitalizations occurred, none related to COVID-19 treatment. No graft rejection or deaths were recorded.

Conclusion: Though CsA levels were often outside the therapeutic range immediately post-NRMr, they quickly normalized. No significant safety events were observed within 30 days, suggesting the protocol's safety and efficacy. Efforts to improve adherence are recommended.

POSTERS – PHARMACY PRACTICE

PP-18

Achieving sustainability of positive patient vaccination experiences in university-based influenza vaccination pop-up clinics using the CARD (Comfort, Ask, Relax, Distract) system

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Purpose: CARD (Comfort, Ask, Relax, Distract) is a vaccination delivery framework that reduces adverse reactions such as fear and pain. It was introduced into vaccination pop-up clinics led by the Leslie Dan Faculty of Pharmacy (LDFP), University of Toronto, in the fall of 2022. Overall, 64% of vaccine clients reported a better vaccination experience compared to their last vaccination after CARD was implemented compared to 34% beforehand. Integration was supported on-site by CARD developers and LDFP faculty and staff. In this project, we examined sustained implementation of CARD overseen by LDFP pharmacy preceptors and benefits to vaccine clients.

Methods: LDFP hosted four influenza and COVID-19 vaccination clinics across the university's campus in the fall of 2023. Sustainment strategies included; 1) education of pharmacy student vaccinators about CARD (as part of curriculum course and reviewed prior to clinics); 2) creation of a 'CARD lead' staff position (overseeing operationalization of CARD at each pop-up clinic), 3) creation of standard operating procedures to guide CARD implementation, and 4) integration of feedback from vaccine clients (experience compared to prior vaccination) and vaccinators (clinic processes) via electronic data capture and paper surveys, respectively. A ≥50% or higher rate of vaccine clients reporting a more positive vaccine experience compared to their last vaccination was considered acceptable for CARD sustainability based on the results of the prior year's implementation.

Results: interventions included directional signage, separate waiting and vaccination areas, physical barriers separating all vaccination spaces (with at least one separate room available for privacy) and displaying CARD education and distraction posters in all areas. Doctor of Pharmacy students were involved in all aspects, including set up, vaccination preparation and administration. Feedback obtained for 547 vaccine clients demonstrated that 59% had a more positive experience compared to their last vaccination.

Conclusion: This study demonstrated a sustained benefit of implementing CARD in vaccination clinics. Continued involvement of Doctor of Pharmacy students is recommended to support skill-building in vaccination delivery. Ongoing client and clinic staff evaluations are also recommended to ensure continuous improvement in vaccination services provided.

POSTERS – PHARMACY PRACTICE

PP-19

Participants' experiences and acceptability of HIV, hepatitis C and syphilis testing by pharmacists in the APPROACH 2.0 study

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Purpose: The APPROACH 2.0 study aimed to evaluate implementation of point-of-care (POC) and dried bloodspot (DBS) testing for HIV, hepatitis C (HCV), and/or syphilis by pharmacists in Newfoundland and Labrador (NL), Nova Scotia (NS), and Alberta (AB). Acceptability of the testing program and experiences of participants were evaluated.

Methods: Voluntary pre- and post-test surveys completed during the pharmacy-testing visit captured participant demographic characteristics, risk behaviours, attitudes and experiences. Survey items for understanding experiences included 5-point Likert-type scales from 1-strongly disagree to 5-strongly agree. Descriptive statistics were used to analyze the variables.

Results: During 297 testing visits between December 2022 and December 2023 (NS=116, NL=92, AB=50), 258 participants (86.9%) completed pre- and post-test surveys. Survey respondents were primarily men (59%), Caucasian/white (74%), and single or casually dating/hooking up (34% and 28%, respectively). Median age was 36 years. Participants reported, on average, 3 sexual partners in the last year; 82% participated in sexual intercourse without using a condom. At least 90% of participants agreed they felt comfortable getting tested by the pharmacist, would recommend the service to a friend, and believed testing should always be available at pharmacies. 93% indicated they perceived lack of stigma or discrimination during their visit. Most participants indicated characteristics of the testing program, including privacy and confidentiality of results, a private room for testing and counselling, offering the service free, immediate availability of results, and no need for an appointment were important. The majority of participants agree the pharmacist was qualified to perform and interpret tests (97%), felt confident the pharmacist did a good job administering the tests (96%), and cared about their health and well-being (95%).

Conclusion: These findings highlight that pharmacist testing for HIV, HCV, and syphilis was acceptable and a positive experience for those who chose to be tested through this novel approach. Expanding options for testing in the community may help increase access to prevention services and reduce barriers to testing and linkage to care. This testing innovation may be scaled up in other locations in Canada, particularly where access to testing remains limited including rural and remote communities.

POSTERS – PHARMACY PRACTICE

PP-20

Sex differences in the risk of heart disease among individuals with spinal cord injury

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Purpose: Individuals with spinal cord injury (SCI) experience a diverse array of adverse secondary health complications. In particular, heart disease (HD) is one of the leading causes of death among individuals with SCI. Various risk factors for HD are amplified in SCI subjects compared with ambulatory subjects, including physical inactivity, abnormalities in blood pressure, diabetes, and chronic inflammation. While prior literature has shown a higher prevalence of risk factors for HD in individuals with SCI, none of these studies have directly addressed the sex-specific magnitude of risk estimates for HD associated with SCI. Our aim was to examine the sex differences in the risk of HD among individuals with SCI, and to determine if this differential risk is amplified relative to able-bodied individuals

Methods: Population-level data were obtained from more than 60,000 individuals who participated in the national cross-sectional Canadian Community Health Survey (CCHS). Multivariable logistic regression analysis was conducted to identify the sex-specific effect on risk estimates. The models adjusted for confounders and used probability weighting to account for the CCHS sampling design

Results: Among 354 individuals with SCI, the weighted prevalence of self-reported heart disease was 22.9% in males and 8.7% in females, with an inverse-probability weighted odds ratio of 3.44 (95% CI 1.70–6.95) for males versus females. Among 60,605 able-bodied individuals, the prevalence of self-reported heart disease was 5.8% in males and 4.0% in females, with an inverse probability weighted odds ratio of 1.62 (95% CI 1.50–1.75) for males versus females. The effect of male sex on increasing heart disease prevalence was about two times higher among individuals with SCI than able-bodied individuals (relative difference in inverse probability weighted odds ratios = 2.12, 95% CI 1.08–4.51)

Conclusion: Males with SCI exhibit a significantly higher prevalence of heart disease, compared with females with SCI. Moreover, relative to able-bodied individuals, SCI amplifies the sex-related differences in heart disease. Overall, this work will inform targeted cardiovascular prevention strategies, and may also inform a better understanding of cardiovascular disease progression in both able-bodied and individuals with SCI. Future studies should examine sex differences using a longitudinal study design

POSTERS – PHARMACY PRACTICE

PP-21

Evaluation of the impact of the USask Chronic Pain Clinic on patient health status

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Purpose: The USask Chronic Pain Clinic (UCPC) is an interdisciplinary clinic operated by the College of Pharmacy and Nutrition (University of Saskatchewan). The pharmacist, social worker, physical therapist, and physician team use a unique pharmacist-led '3M' (medication, mind, movement) approach to manage chronic non-cancer pain. Students from all four health disciplines are involved in the care of UCPC patients. The study aimed to determine patient perceptions of the impact of the UCPC on their health status.

Methods: A link to a web-based questionnaire (Survey Monkey) was emailed once monthly, from June-December 2023 to patients discharged from the UCPC during the previous month. A reminder was emailed 2 weeks later. The questionnaire was pre-tested and included 24 Likert scale and 4 free-text questions and took approximately 10 minutes to complete. Patients were entered into a draw for a gift card to encourage participation. The study was approved by the University of Saskatchewan Research Ethics Board.

Results: Response rate was 41.8% (n=33/79). The majority of patients (75.8%) reported that their overall health status improved after their experience at the UCPC. A similar proportion of patients reported improvements in overall mood (71.9%), pain severity (53.1%), and ability to complete daily activities (53.1%). A larger proportion reported that they were satisfied with their overall experience at the UCPC (93.8%), were treated with dignity and respect (96.9%), and felt involved in decisions related to their care (96.9%). A substantial number of people (38.7%) also experienced fewer side effects from their medications. Finally, 87.5% reported that they were more prepared to engage in active strategies to self-manage their pain after UCPC discharge.

Conclusion: The model of pharmacist-led, interdisciplinary chronic pain care used at the UCPC appears to improve several clinically meaningful, patient self-reported endpoints. This is noteworthy because it is difficult to improve the health status of patients with chronic pain, using any intervention. In addition, the finding that patients were more prepared to engage in active strategies to self-manage their pain suggests that the impact may be sustained over time. Future research is needed to confirm these results in a long-term randomized, controlled trial.

POSTERS – PHARMACY PRACTICE

PP-22

Impact of a pharmacist consultation service on patient's medication-related burden quality of life

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Purpose: The Medication Therapy Services Clinic provides Comprehensive Medication Assessments (CMA) through a university-run, referral-based pharmacist consultation service for patients with multimorbidity and polypharmacy in Newfoundland and Labrador. We assessed the impact of CMA on medication-related burden quality of life (MRB-QoL) at 6 weeks in patients with complex medication needs.

Methods: Design: Before-after study; sample size of 200 patients needed to detect 20% change in MRB-QoL score.
Patients: Consecutive patients aged 16 or older, able to complete study documentation and received a CMA between Feb 2021 and May 2023. Patients had >2 chronic medical conditions and >5 medications or had a specific medication-related concern significantly impacting their QoL.
Interventions: Pharmacists met with patients (and support person, where appropriate) for an initial 1-hour assessment, in person or through distance delivery. Patients completed the standardized MRB-QoL questionnaire prior to the visit and results were reviewed by the pharmacist. During the assessment, patient and pharmacist goals were set, medical and medication history were obtained, and drug therapy issues were identified. Pharmacists sent recommendations to optimize medication therapy to the primary care provider and provided follow up to monitor for desired outcomes. Participants completed the MRB-QoL at 6 and 12-weeks post-visit, administered by a research assistant.
Analyses: Total scores were calculated on the MRB-QoL and by domain: Routine and Regimen Complexity (RRC), Psychological Burden (PB), Functional and Role Limitation (FRL), Therapeutic Relationship (TR) and Social Burden (SB). Descriptive statistics analyzed demographic variables and paired t-test was used to analyze change in MRB-QoL scores.

Results: Of 197 participants, 58% were female, median age 71 years (IQR 65-79), and 57% of consultations were in-person. Mean number of recommendations was 3.87 per person; 63.5% received at least one deprescribing recommendation. Mean MRB-QoL score significantly increased by 6.48 (95% CI 5.26-7.70), $p < 0.0001$) at 6 weeks (higher scores indicate a higher quality of life). Significant increases were observed in domains RRE, PE and FRL ($p=0.036$, $p<0.0001$ and $p=0.0147$, respectively) from baseline to 6 weeks; no significant impact was observed on TR and SB domains.

Conclusion: Pharmacist-led CMA reduced medication burden in patients with complex medical needs.

POSTERS – PHARMACY PRACTICE

PP-23

Economic impact of pharmacist prescribing for minor ailments in Ontario: A cost-minimization analysis

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Purpose: The scope of practice for Ontario pharmacists has recently expanded to include prescribing for certain minor ailments. An economic evaluation is needed to assess the economic impact of the pharmacist prescribing for minor ailment (PPMA) program.

Methods: A decision-analytic model was implemented to perform a cost-minimization analysis comparing the economic impact of a remunerated program for PPMA with usual care. Evaluated minor ailments included: musculoskeletal sprains and strains, gastroesophageal reflux disease (GERD), dermatitis (atopic/eczema, allergic and contact skin rashes), uncomplicated urinary tract infection (UTI), and insect bites (including tick bites) and urticaria. The base case included Ontarians eligible to receive publicly funded minor ailment prescribing in Ontario presenting with one of the studied minor ailments. Two prescribing strategies were considered: PPMA (where patients have the option of either seeking care from a pharmacist or a physician) and usual care (where all patients seek care from physicians or nurse practitioners). Probabilities and costs used in the model were derived from Ontario population-based health administrative data accessed from ICES, literature, or expert opinion when there was insufficient literature. In addition, a one-way sensitivity analysis and a probabilistic sensitivity analysis were performed to assess the robustness of the model. This analysis used a public payer perspective and outcomes were expressed in costs ($CAD).

Results: From the base-case analysis, it was found that the PPMA program compared to usual care would provide cost-savings for Ontario government of $38.25 (95% CI: 38.14 – 38.35), $77.38 (77.11 – 77.53), $63.68 (63.43 – 63.79), $56.04 (55.88 – 56.21), and $44.60 (44.53 – 44.78) per patient in each encounter for musculoskeletal sprains and strains, GERD, dermatitis, UTI, and insect bites (including tick bites) and urticaria, respectively. Sensitivity analyses identified the probability of receiving care by a pharmacist over a physician as the most influential factor. Probabilistic sensitivity analysis showed that the PPMA model consistently led to cost-savings in 100% of simulations across the five minor ailments.

Conclusion: The study showed that the implementation of a PPMA program in Ontario leads to sizable cost-savings for the Ontario government, highlighting the economic benefits of expanding pharmacist prescribing roles for minor ailments.

PP-24

Quality improvement evaluation of an order set in the electronic patient record for deprescribing proton pump inhibitors (PPIs) in a geriatric-medicine unit

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Purpose: There is limited evidence evaluating tools in the electronic patient record for deprescribing. A previous study in a primary care clinic demonstrated statistically significant reduction in inappropriate PPI use through implementation of electronic health record templates, alongside patient and provider education. The addition of a clinical pharmacist also increases the efficacy of deprescribing initiatives in the healthcare setting. This is an evaluation of an order set including a deprescribing algorithm, prescriber guideline and patient handout in the EPR, facilitated by pharmacy team members in a hospital setting on a geriatric unit.

Methods: This is a single center study with retrospective design for baseline data collection, and prospective design was used for post-intervention data collection. Baseline deprescribing rate was calculated between September 2021 and March 2021. For inclusion, patients had to be on medicine-geriatric unit and have PPI prescribed for at least 4 weeks. Between June 2022 and June 2023, two months after launching the order set in the EPR, a pharmacy team member screened patients on the medicine-geriatric unit on a PPI for at least 4 weeks. If appropriate and after discussion with prescriber, the PPI was deprescribed using the order set. The primary outcome was PPI deprescribing (PPI discontinued or dose reduced).

Results: Baseline PPI deprescribing rate was 16% (n=9) for total n= 55 (mean age 80 years); forty-four percent (44 %, n=4) had PPI dose reduced and 56% (n=5) had PPI discontinued. The post-intervention deprescribing rate was 33% (n=31) for total n=93 (mean age 79 years); thirty-two percent (32%, n=10) had PPI dose reduced and 68% (n=21) had PPI discontinued. Sixty-one percent (61%, n=19) were deprescribed using the order set. A Chi-square test showed significant increase in overall PPI deprescribing post-intervention (X^2 (1, n=148) = 5.0463, p = .025).

Conclusion: There was a statistically significant increase in PPI deprescribing after the implementation of the order set, facilitated by a pharmacy team member. The pandemic likely affected deprescribing rate at baseline, which was lower than expected. Prescribers require more stakeholder engagement and education to encourage the use of deprescribing order sets, and to leverage the EPR for important initiatives like deprescribing.

POSTERS – PHARMACY PRACTICE

PP-25

Health human resource needs in Newfoundland and Labrador: Community pharmacists

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Purpose: The recruitment and retention of pharmacists in Newfoundland and Labrador (NL) has become a major problem in recent years. In some areas of the province, community pharmacies have reduced their hours of operation or temporarily closed due to staffing challenges. To address the lack of direct demand side information on the health human resource needs of NL pharmacies, this project aimed to determine the number of vacant community pharmacist positions as well as changes in the demand for pharmacists over a 5-year period. The project was completed in collaboration with the Pharmacists' Association of Newfoundland and Labrador (PANL).

Methods: We conducted a cross-sectional survey of community pharmacies during the fall of 2022. A link to the online survey was distributed to all 206 pharmacies in the province using PANL's email list serv. Pharmacists-in-charge were also contacted by telephone to complete the survey. Data collection included: pharmacy demographic information, the number of vacant pharmacist positions at each site, and changes in pharmacist vacancies over the previous five years and reasons for same. A descriptive summary is presented here.

Results: One-hundred and five pharmacy sites completed the survey with 41.0% (n = 43) located in rural areas. Vacancies were reported by 36.2% of sites (n = 38). The total number of vacancies at the time of survey completion was 46. Of the 67 pharmacies who did not report a vacancy at the time of survey completion, 26.6% (i.e. 18 of 67) indicated having a vacant position in the previous 12 months. Lateral movement of pharmacists within the province, including movement from community to community and community to hospital practice, and retirement were the most common reasons cited.

Conclusion: In 2022, there were at least 46 vacant community pharmacist positions in NL. This level of demand exceeds the output of pharmacy graduates from Memorial University annually. Targeted measures are needed to increase the recruitment and retention of community pharmacists in NL. Initial strategies to meet workforce demands should include an increase to the pharmacy class size at Memorial University and enhanced supports for international pharmacists seeking licensure.

POSTERS – PHARMACY PRACTICE

PP-26

Assessment of Alberta community pharmacists' practices and needs in providing comprehensive COPD care.

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Purpose: Understanding of current practices and educational needs in chronic obstructive pulmonary disease (COPD) management by community pharmacies is important to improve the outcomes of patients living with COPD.

Methods: We conducted an online survey of 5,805 pharmacists registered with the Alberta College of Pharmacy between October 31st and December 18th, 2023. Survey questions consisted of Likert-scale, multiple choice, dichotomous, and open-ended questions. The survey tool was developed using literature and reviewed by experts for face validity. Data analysis was performed using descriptive statistics.

Results: We received 456 responses, with 341 being fully completed (denominators differ based on item response). Almost half (48.1%) of responders see between 1 to 10 patients with diagnosed or suspected COPD in a typical month, while 32.3% see over 15 patients. Around 85% of responding pharmacists prepare ≥1 care plans for their patients with COPD as a main concern, including over a quarter of these with >12 care plans per year. Some pharmacists provide services for early detection of COPD: 46.7% assess patient risk, 18.4% refer for spirometry, and 4.5% perform microspirometry. For management of COPD, we found that pharmacists assess exacerbation history (86.5%), severity (72.8%), appropriateness of therapy (55.8%), and COPD CAT/mMRC score (21.5%). A majority of pharmacists extended/renewed maintenance therapy (96.1%) and exacerbation management therapy (~55%). However, only 28.9% of pharmacists initiate maintenance therapy and ~20% exacerbation management therapy. Interestingly, most pharmacists agreed that they would want to expand their ability to provide comprehensive COPD care (94.4%) and would want additional training (91.2%). The top three topics were: performing microspirometry (e.g., with handheld COPD-6 device) (73.3%), assessing appropriateness of maintenance therapy per guidelines based on exacerbation history/CAT or mMRC score (72.3%), and identifying patients with potential undiagnosed COPD (71.4%).

Conclusion: A large proportion of respondents were currently managing ongoing therapies and identifying gaps in care for patients with COPD. However, pharmacists can be more proactive in caring for patients with suspected COPD as well as in ensuring timely exacerbation management. The educational needs to deliver comprehensive COPD care by pharmacists are of interest to those designing intervention studies as well as pharmacy educators.

PP-27

Improving community pharmacy access in remote First Nations communities

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Purpose: The responsibilities of a pharmacist are well established within a Western healthcare framework; however, a pharmacist's role within Indigenous-led healthcare is unclear. Rural and remote communities often face significant barriers to accessing care because of geographic distances or chronic healthcare staff shortages. Providing access to a variety of healthcare services directly within the community can help address these challenges. Indigenous control over healthcare delivery is essential to honouring self-determination, addressing health inequities, and ensuring culturally safe care. This research is to investigate how to improve pharmacy access in a remote First Nations community by understanding patient and care provider perspectives on the importance of various pharmacy services at an individual and community level.

Methods: This project followed a Two-Eyed Seeing approach weaving Western research techniques and Indigenous perspectives. First, a literature search was conducted on current pharmacy services offered within Indigenous communities. Following the direction of community partners, 2 study groups were chosen to provide insight (i) self-identified users of pharmacy services residing within the First Nations community and (ii) healthcare providers working at the local health centre. Following a mixed methods approach, individuals were invited to participate in a Qualtrics survey or discussion.

Results: A total of 2 participants, both healthcare providers, completed the survey. Data collection and analysis are currently ongoing to ensure increased community input. Interim qualitative analysis illustrates the key qualities a pharmacist should possess while working in this community include cultural safety, time to engage with patients, and knowledge of traditional medicines. Based on all our findings, the themes we found were (i) cultural safety training and Nation-specific knowledge improve patient satisfaction; (ii) adaptable pharmacists with strong clinical knowledge excel in their role; and (iii) a wide variety of pharmacy services should be offered.

Conclusion: There is a recognizable need to increase pharmacy access in many rural and remote First Nations communities. A pharmacist's role within these communities will be distinct from urban areas and should be tailored to each community's priorities. Future investment should be made to design a cultural safety and community-specific training program mandatory for all incoming healthcare staff.

POSTERS – PHARMACY PRACTICE

PP-28

Regulation and standardization of pharmaceutical compounding practices: Opportunities for quality improvement

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Purpose: Pharmaceutical compounding plays a vital role in personalized drug therapy by providing customized medications to meet individual patient needs. However, this practice is not without controversy and challenges, particularly in areas concerning quality management through regulation and standardization. The Ontario College of Pharmacists attempted to address these challenges by adopting the NAPRA Model Standards for Pharmacy Compounding for sterile preparations and non-sterile preparations in 2019 and 2022, respectively. These guidelines encompass the requirements, environment, and training mandated for the safe preparation of compounded medications. The purpose of this project is to explore what has been reported in the literature regarding the regulation and standardization on pharmaceutical compounding practices and identify potential opportunities for quality improvement and patient safety advancement.

Methods: A comprehensive literature review was conducted using search terms such as "pharmaceutical compounding," "drug compounding," "quality," "regulation," and "standardization" in PubMed, Scopus, and MEDLINE (Ovid) databases. Studies eligible for inclusion included those published after the year 2000 and in the English language. Studies were excluded if they focused on drug manufacturing.

Results: We identified a total of 11 studies which revealed significant gaps in pharmaceutical compounding regulations. These regulatory gaps have directly contributed to documented occurrences of fatal medication errors, widespread contamination incidents, and formulation inconsistencies. These studies also discussed the positive impact of standardization on compounding accuracy and patient safety, highlighting that standardized practices can improve consistency and reduce errors in pharmaceutical compounding. However, they also alerted that introducing such regulatory changes and standardization may pose challenges, such as, compliance, operational restructuring of pharmacies, and potential disruptions to existing workflows within pharmacies.

Conclusion: This literature review emphasized the need for continuous quality improvement in pharmaceutical compounding practices to advance patient safety. It underscores the need for robust regulation, standardization, and continuous professional development in pharmaceutical compounding. Further research is needed to evaluate pharmacy professionals' awareness, perception, and compliance with the recently adopted NAPRA standards in Ontario. An online questionnaire will be administered in Spring/Summer 2024 to address this.

POSTERS – PHARMACY PRACTICE

PP-29

Portrait of polypharmacy in 2019 among children insured under the Quebec public prescription drug insurance plan

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Purpose: Polypharmacy, defined as the concurrent use of multiple medications by a single patient remains a poorly documented phenomenon, particularly among the pediatric population. This study aims to describe polypharmacy and medication use among children from the age of 0 to 18 years old in 2019 in the province of Québec, Canada.

Methods: Data were extracted from the Québec Integrated Chronic Disease Surveillance System. The analysis included all children insured by the Quebec Public Prescription Drug Insurance Plan in 2019. The number of medications has been estimated according to the Anatomical Therapeutic Chemical (ATC) classification. We described the prevalence of children who received at least one, two, three or four pharmaceutical services and the most common medication used. Results were stratified by sociodemographic variables (e.g., age, sex) and by chronic diseases.

Results: 371,187 out of 1,681,472 children (22%) were insured for the entire year. Within this group, 180,105 (49%) received at least one medication, averaging 1.2 different medications. About 40% of children who received pharmaceutical services received only one medication. A quarter (24%) received two, 14% received three and 20% received at least four. The most frequently prescribed medications in the studied population at the second ATC level were antibiotics (24%), psychoanaleptics (11%), and respiratory drugs (9%). The average number of different medications claimed was higher for children with chronic diseases: 4.4 for those with diabetes; 3.0 for individuals with a mood disorder; 2.4 for those diagnosed with attention deficit hyperactivity disorder, and 2.3 for children with asthma.

Conclusion: Around half of children insured year-round under public drug insurance received at least one medication. Chronic illnesses were frequently associated with taking several medications throughout a year.

POSTERS – PHARMACY PRACTICE

PP-30

Talking to those with the power? Management perspectives of pharmacist burnout

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Purpose: The cause of burnout is rooted in an unbalanced, maladaptive relationship between individuals & their work. As burnout among pharmacists becomes increasingly researched, there is a growing demand for effective, evidence-based interventions. While many gaps in the literature remain, the need for personal, organizational, & systemic solutions to address burnout is a common sentiment. The most described burnout interventions for individual providers are workshops or programs that promote stress management, mindfulness, personal resilience, meditation, communication skills, work-life balance, coping mechanisms, & self-care. However, relying on just personal approaches appears insufficient & may be harmful to individual employees—suggesting that they are at fault for experiencing burnout. This study sought to understand how burnout is perceived by those with more agency to make changes, that being management.

Methods: Interviews were conducted to gain insight on burnout & work engagement from the perspective of community pharmacy management (i.e., managers, owners, district managers, executives). Each participant completed a one-on-one, online, semi-structured interview, which allowed for in-depth discussion focused on their lived experience.

Results: Interviews revealed similarities and differences between participant perspectives, though all shared the view that burnout is a significant issue for pharmacy teams. Specifically, all participants perceived a persistent increase in pharmacist burnout relative to before the pandemic. Perceptions of work engagement varied, though most participants identified low engagement in their organizations & profession as a concern. Participants described specific demands that drive burnout in the community pharmacy setting, but also identified current & potential resources to manage burnout. Interpersonal strain, non-clinical workload, & insufficient staffing were frequently cited demands. Overall, the overwhelming demands of daily practice have prevented management teams from implementing additional, concerted efforts to combat staff burnout.

Conclusion: This study's management insights provide direction for targeted burnout interventions; specifically, approaches to decreasing work demands & supplying sufficient, effective resources. While resources can be targeted to better manage such work demands, the demands themselves should be rational for frontline staff to achieve. Likewise, work resources must reflect the realities of daily practice in their benefit & practicability. Existing resources may hold potential but require appropriate application and uptake to demonstrate greater value.

POSTERS – PHARMACY PRACTICE

PP-31

Patient satisfaction with care received through a pharmacist consultation service

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Purpose: The Medication Therapy Services Clinic (MTS) provides Comprehensive Medication Assessments (CMA) through a university-run, referral-based pharmacist service for patients with multimorbidity and polypharmacy in Newfoundland and Labrador. Patients may be referred by a healthcare professional or self-refer. We investigated patient satisfaction with pharmacist care received through the MTS Clinic.

Methods: Design: Before-after study. Patients: Consecutive patients aged 16 or older, able to complete study documentation and received a CMA between Feb 2021 and May 2023. Patients had ≥2 chronic medical conditions and ≥5 medications or had a specific medication-related concern significantly impacting their QoL. Intervention: Pharmacists met with patients (and support person, if appropriate) for an initial 1-hour assessment where goals were set, patient's medical and medication history were obtained, and drug therapy issues were identified. Visits were conducted in-person or through distance delivery, and recommendation letters to optimize medication therapy were sent to primary care providers after the initial visit. Pharmacists met with patients to follow up on achievement of desired outcomes and modified recommendations as appropriate. Outcomes and Analyses: Participants completed a validated Consultant Satisfaction Questionnaire (CSQ) over the phone, administered by a research assistant, 2-weeks after the initial visit. Total scores were calculated on the CSQ and by domain: General Satisfaction (GS), Professional Care (PC), Depth of Relationship (DR), and Perceived Time (PT). Descriptive statistics were used to analyze questionnaire responses.

Results: Of 197 participants, 178 completed the satisfaction survey (90.4% response rate). Participants were satisfied with care received, mean overall score was 74.5/90 (higher scores indicate a higher level of satisfaction). Ninety-eight percent were totally satisfied with their visit and 72% reported understanding their illness better after their visit. Ninety-eight percent reported the pharmacist listened very carefully to what they had to say and 89% felt the pharmacist was interested in them as a person, not just their illness. Higher scores were observed on GS (13.7/15, 91.3%), PT (12.8/15, 85.3%), and PC (28.6/35, 81.7%) domains than DR (19.3/25, 77.2%), reflective of the initial pharmacist visit.

Conclusion: Participants were very satisfied with pharmacist care received during their initial visit, suggesting that a consultant pharmacist service is valued by patients.

POSTERS – PHARMACY PRACTICE

PP-32

Changing the conversation: Empowering community pharmacists to address pneumococcal vaccine hesitancy

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Purpose: Although pneumococcal vaccine is recommended for all individuals 65 years of age and older, only 58% have been vaccinated, which is well below the Public Health Agency of Canada's target of 80%. To improve uptake, we developed and implemented a stepped-wedge cluster randomized trial testing the effectiveness of a community pharmacist intervention. Our aim in this pre-specified substudy was to uncover and quantify factors contributing to vaccine hesitancy by exploring the nature of patient-pharmacist conversations about pneumococcal vaccine before and after participating pharmacies received an education package.

Methods: At the beginning of each month (April to August, 2023), participating pharmacies were randomly selected to receive an education package, which was designed to enhance pharmacists' knowledge, skills, and abilities in promoting pneumococcal vaccination. Pharmacists provided usual care (control stage) until they received the educational package and transitioned to the intervention stage. Weekly scorecards tracked patient-pharmacist conversations about pneumococcal vaccination. We performed chi-squared tests to compare the time taken for each conversation, result of the conversation (vaccination or refusal), and patient-reported reason(s) for refusal between control and intervention stages.

Results: A total of 15 pharmacies from a variety of organizations and communities across Alberta were included in our analysis. There were 656 patient-pharmacist conversations during the study (271 in the control stage and 385 in the intervention stage). Overall efficiency of patient-pharmacist conversations improved after pharmacies received the education package (65% of conversations resulting in vaccination took <20 minutes in the control stage, compared to 88% in the intervention stage (p=0.004)). The most common patient-reported reason for refusal, needing more time to think about the vaccine, remained similar between stages (p=0.23). However, during the intervention stage, fewer patients refused vaccination due to lack of time to receive it and perceived lack of benefit (p=0.016 and p=0.035, respectively) and more patients refused vaccination due to cost barriers (p=0.026).

Conclusion: The education provided in our study appeared to change the nature of patient-pharmacist conversations about pneumococcal vaccination, leading to more efficient and informed conversations. Similar interventions could be adopted across Canada and the US to help combat pneumococcal vaccine hesitancy.

POSTERS – PHARMACY PRACTICE

PP-33

Implementing pharmacist prescribing in a university-affiliated pharmacist-led clinic: Lessons learned and educational opportunities

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Purpose: Pharmacist scope of practice in British Columbia was expanded in June 2023 to include pharmacist prescribing for minor ailments and contraception (PPMAC). The University of British Columbia Pharmacists Clinic (the Clinic) has been offering PPMAC appointments since launch. The purpose of this evaluation was to identify opportunities and barriers in implementing and expanding PPMAC services at a university-affiliated patient care clinic.

Methods: The Clinic is staffed by five full-time pharmacists and a medical office assistant. While a licensed pharmacy, the Clinic provides 30-60 minute comprehensive medication management appointments without dispensing services. An open-ended questionnaire, based on SWOT analysis, was used to capture clinic pharmacists' experiences of providing PPMAC services. The four pharmacists that provided PPMAC assessments over the program's first 6 months were surveyed through Qualtrics. Data was analyzed using thematic content analysis.

Results: The Clinic has provided 30 PPMAC assessments, 27 of which resulted in a prescription. Each pharmacist (n=4) completed between 3 and 12 PPMAC consultations, with contraception being the most common assessment. Providing PPMACs was associated with increased job satisfaction, autonomy in decision-making, and role modelling. Provision of services was facilitated by strong clinical knowledge and experience, and the ability to spend dedicated time with patients. Challenges included the inability to dispense the recommended product to the patient, inability to provide walk-in appointments, and limited-service uptake. Lack of funding for virtual services was noted as the most challenging external factor. All pharmacists agreed that PPMAC appointments offered clear opportunities to support the faculty's academic program via case development in integrative activities and increased opportunities for experiential students to gain exposure to prescribing. The pharmacists perceived additional opportunities with providing PPMAC services at the Clinic, including having other licensed faculty pharmacists provide PPMAC services to gain experience in prescribing and integrate learnings into their teaching.

Conclusion: Providing PPMAC in a university-affiliated pharmacist-led clinic offers opportunities for professional development and integration of practical elements into the educational program. This can benefit not only patients and the Clinic pharmacists but also faculty members and students. Perspectives shared will inform strategies and service expansion.

POSTERS – PHARMACY PRACTICE

PP-34

Late onset hypogonadism: A review of guidelines

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Purpose: Late onset hypogonadism (LOH) is a medical condition that affects middle aged and older men due to a decline in testosterone levels as men age. There are many points of contention about the condition which have led to varying recommendations among clinical practice guidelines (CPG). The purpose of this review is to evaluate the quality of CPGs on LOH and compare their contents to assess areas of consistency amongst recommendations and to highlight areas of discrepancy in the diagnosis and management of the condition.

Methods: Literature searches were performed to identify guidelines published between 2000 and 2023 in the English language. A quality assessment of the guidelines was done using the AGREE II tool and the recommendations of the individual guidelines were compared.

Results: Seventeen CPGs, published between 2002 - 2023 were identified and included in the review. There was a wide range in the quality scores as well as a lack of consensus for most content areas. There was greater consensus on initial examination recommendations such as timing of testosterone blood work, measuring total and/or free testosterone and measuring luteinizing hormone (LH) levels. The adverse effects with the greatest consensus among the guidelines was the increased risk of developing polycythemia, hyperviscosity, or embolism from testosterone therapy. Additionally, there was general consensus surrounding the absolute contraindications of metastatic prostate cancer and a history of male breast cancer. Some monitoring parameters recommended within guidelines lacked clarity and required reader interpretation or provided insufficient information to help guide clinical decisions.

Conclusion: There are many poor quality LOH CPG. Inconsistencies on recommendations may lead to varying treatment decisions based on which guideline is used and could create uncertainty for healthcare professionals caring for patients with LOH.

POSTERS – PHARMACY PRACTICE

PP-35

Introducing practice innovations in community pharmacy-based vaccinations: How to play CARD (Comfort Ask Relax Distract)

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Purpose: CARD (Comfort, Ask, Relax, Distract) is a new vaccination delivery framework proven to reduce pain, fear, and immunization stress-related responses. In the first study involving community pharmacies, CARD was successfully implemented in five Wholehealth pharmacies administering COVID-19 vaccinations in children. CARD developers, however, led the implementation. To improve feasibility for scaling CARD, the present study expanded CARD to other Wholehealth pharmacies using a more pragmatic approach.

Methods: Community pharmacies were eligible if they were in Ontario and offering influenza vaccinations. They were randomized to CARD or control. Each pharmacy submitted a video 'walk-through' of their vaccination spaces and processes. CARD pharmacies received: 1) education via a two-hour virtual training session led by organizational leaders in a "train the trainer" approach; 2) customized written feedback for improving physical environments and workflows in their pharmacies; 3) a toolkit with items to support implementation; and 4) follow-up practice review by study team members to refine implementation. Vaccinator compliance with individual CARD interventions and perceptions of the quality and duration of client-provider interactions during vaccination were assessed.

Results:
CARD was integrated in 12 community pharmacies for 920 vaccinations. Staff from all pharmacies participated in virtual training sessions (live or recorded), submitted videos, and received customized recommendations. Site visits revealed low adherence to CARD and additional feedback (e.g., language to use during patient interactions, rearranging vaccination spaces to hide fear cues) and supplies (e.g., privacy films applied to consultation room windows) were provided to improve compliance. Vaccinators reported that CARD helped in 76% of vaccinations and did not extend the time required for vaccination interactions.

Conclusion: A more pragmatic approach to integrating CARD in community pharmacies was evaluated, including a virtual training session and written recommendations customized to the pharmacy. Site visits, however, were required to improve compliance with recommendations. Introducing practice innovations such as CARD requires careful examination of the barriers and facilitators to implementation. Importantly, education must support pharmacy professionals to build the requisite skills to be successful. Future studies are recommended that examine whether pharmacy students and new pharmacy graduates trained in CARD can be leveraged to facilitate practice change.

POSTERS – PHARMACY PRACTICE

PP-36

Perspectives of community pharmacists on the use of the AppGuide to support their interventions in non-adherence to pharmacotherapy for chronic diseases: A qualitative study

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Purpose: Introduction: According to the World Health Organization, non-adherence to medication treatments affects approximately 50% of people with chronic diseases worldwide, leading to significant impacts on patient health and healthcare costs. Community pharmacists play a crucial role in this area due to their proximity to patients to detect and intervene on this problem. Despite their efforts, non-adherence persists, leading to the exploration of new solutions such as mobile health applications. With this in mind, the AppGuide digital platform offers a library of mobile applications designed to promote treatment adherence, recommended to patients by healthcare professionals.
Objectives: Explore the pharmacists' experience in using AppGuide to support their interventions on non-adherence to treatments.

Methods: Method: An exploratory qualitative study was conducted through semi-structured individual interviews with four pharmacists and two pharmacy students, following a first phase during which they recommended applications to patients experiencing adherence difficulties via AppGuide. The interview transcripts were subjected to thematic content analysis according to the frameworks of participatory evaluation (Patton 2008) and the technology acceptance model (Davis 1989).

Results: The study identified nine main themes including implementation of the recommendation, ease of use of AppGuide, and perceived usefulness. The majority of interviewees had a positive perception of recommendation via the AppGuide, considering it to be a simple, friendly and easy-to-use tool. Perceived usefulness was mainly associated with educational support on medication and illness, reminders to take pills, as well as monitoring of health results through applications. Barriers to the use of the AppGuide were raised, notably an insufficient description of the applications. The participants all expressed the desire to continue using the AppGuide in their practice, but sporadically rather than systematically.

Conclusion: Mobile application recommendations via AppGuide received a positive reception from pharmacists and pharmacy students. This study documents the integration, impact and issues related to the recommendation of mobile applications in pharmacies providing insights for future improvements.

POSTERS – PHARMACY PRACTICE

PP-37

Opioid deprescribing through a stigma theory lens: results of a critical narrative review and clinical implications for pharmacists

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Purpose: Canadian practice guidelines emphasize the importance of opioid deprescribing. Stigma is a highly relevant topic for both chronic pain and opioid use. Although opioid deprescribing literature highlights stigma, this is done primarily in untheorized ways, resulting in an underdeveloped understanding of the problem.
We sought to re-interpret existing research exploring the perspectives, concerns, and experiences of opioid tapering of people prescribed opioids for non-cancer chronic pain (CNCP), or clinicians in primary care, by applying sociological theories of stigma. Building from this re-interpretation of existing studies, an action-focused reflexive discussion will outline ways pharmacists may minimize stigma-related barriers to care in their own practices.

Methods: A critical narrative review involving a systematic search of three databases and a team approach to inclusion screening was conducted. Studies addressing the topic of patient and/or clinician experience with opioid deprescribing were identified. Analysis was iterative, as is expected in critical narrative reviews, including article coding into broad topics, analytic memoing, and team discussions/retreats to map the literature to multiple sociological stigma theories.

Results: Of the included articles (n=45), only two explicitly integrated stigma theory. Consequences of opioid tapering on patients are noted, with reports of forced withdrawal, lost access to primary care, reluctance to seek help, perceived reduction in autonomy, and mistrust in the healthcare system and providers. From the studies of patient perspectives specifically, applying sociological theories highlights how discussing opioid tapering is a 'stereotype threat', meaning it triggers 'stigma management' strategies by patients to reduce risk of active stigmatization (i.e. limiting reporting of pain, tailoring communication with provider, distancing self from 'addict' stereotype). The existing literature contains examples of interactional stigma (i.e. labeled as 'drug seeking', undeserving), structural stigma (i.e. surveillance strategies), and internalized stigma (guilt, shame). Considered as a whole, opioid tapering is rife with potential for stigmatization of people taking prescription opioids.

Conclusion: The important findings of this critical narrative review provide insight as to where anti-stigma initiatives could be prioritized. Our reflexive discussion will propose action-focused changes to pharmacy practice that could disrupt stigmatization, or at least minimize the impact of stigma in opioid deprescribing.

POSTERS – PHARMACY PRACTICE

PP-38

Co-developing a culturally safe engagement framework with urban Indigenous partners

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Purpose: There is a long-standing history of unsafe engagement with Indigenous peoples that often lacks respect, humility, and understanding of Indigenous principles and protocols. To rebuild trust, educators and researchers must commit to reconciliation and strategies for ethical engagement prior to collaborating on projects together. This can be challenging with urban Indigenous organizations or groups, as they may represent a diversity of Nations, communities, and protocols. With oversight from an Indigenous Leadership Committee, this project developed an engagement framework for collaboration, in lieu of Nation-specific protocols, by answering the question: What are the culturally safe principles and protocols for engagement with Urban Indigenous partners?

Methods: To build the framework we used an iterative process consisting of four phases: 1) Discovery: An Indigenous focus group and literature review was conducted to identify strategies of engagement. 2) Defining: Qualitative analysis identified key themes used to build a draft. 3) Developing: Project partners reviewed the draft and provided feedback via semi-structured interviews. 4) Deliver: A final document was refined and presented to partners for approval.

Results: A total of 26 individuals participated in the focus group and one-on-one interviews, representing Indigenous healthcare providers and staff, students, and community members (n=23) and non-Indigenous healthcare providers working in Indigenous communities (n=3). Thematic analysis of data revealed five key principles of engagement: 1) Foster ethical engagement and meaningful relationships, 2) Employ Indigenous governance structures, 3) Build capacity and sustainability for community and faculty, 4) Ensure reciprocity to support reconciliation, and 5) Engage in culturally safe knowledge exchange and translation. Furthermore, we identified seven protocols: 1) Seeking consent, 2) Opening prayers, 3) Creating safe spaces and transparency, 4) Bearing witness, 5) Offering diverse sharing opportunities, 6) Addressing sensitive topics, and 7) Sharing meals or gifts.

Conclusion: The framework with broad engagement principles and specific protocols during engagement activities was well-received by partners. It was foundational in establishing trust and transparency with our partners. As a result, our partners felt confident in our team's ability to properly engage with urban Indigenous individuals. Researchers should invest the necessary time to build Indigenous-led engagement strategies to uproot the long-standing history of improper engagement.

POSTERS – PHARMACY PRACTICE

PP-39

Social network analysis of collaboration in pharmacist-led primary care

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Purpose: Collaboration among multidisciplinary team members can improve patient safety and health outcomes. Pharmacists are essential to interprofessional teams contributing knowledge and expertise that positively impact patient care. However, it is less clear how team-based care is enacted by pharmacists in single disciplinary practice environments. Using social network analysis approach, we studied relationships between pharmacists leading medication management in university-affiliated primary care clinics and the collaborators in their network.

Methods: We recruited pharmacists from three University-affiliated pharmacist-led primary care clinics in Canada (Memorial University, the University of British Columbia, and the University of Saskatchewan). Employing a social network analysis approach, the data collection encounter was designed to explore the nature and composition of collaboration in patient care: a 30-minute semi-structured interview followed by participant drawing to illustrate their specific network experience caring for 2-3 selected patients (sociograms). Transcripts from the interviews and narratives from the drawing component were coded and analyzed in an iterative process. Initial codes were generated inductively and broader categories refined by authors through constant comparison in the dataset.

Results: Eleven (78%) pharmacists completed the data collection encounter, including 28 total sociogram drawings. Single disciplinary primary care clinic pharmacist networks encompass a wide array of health professionals (e.g., physicians, nurses, social workers, occupational and physical therapists) and also patient family members. Pharmacists collaborate with referring professionals, fostering relationships through purposeful and systematic communication. They consult with other pharmacists and also refer patients on to different health professionals whose expertise better meets patient needs. Network ties support the implementation of pharmacist-led patient care management plans, showcasing pharmacists as advisors, connectors, educators, navigators, and advocates for patients.

Conclusion: Pharmacists in single discipline primary care clinics consider themselves members of multiple teams. Our findings underscore the dynamic nature of pharmacist networks and how they are navigated to support pharmacist-led medication management. Primary care pharmacists attempt to overcome encountered barriers to implementing patient care plans through various strategies, which include leveraging new and existing network relationships.

POSTERS – PHARMACY PRACTICE

PP-40

Disparities in accessing pharmacy services for sexual and gender minorities across Canada

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Purpose: Members of the 2SLGBTQQIA+ community experience challenges in accessing healthcare services due to stigma, discrimination, and lack of knowledge from healthcare providers. The purpose of this survey was to understand the collective pharmacy experiences of patients who identify as 2SLGBTQQIA+ and highlight areas for improvement for pharmacists and pharmacy teams to provide safer, more inclusive care.

Methods: A 31-item, open, voluntary Web-based survey, consisting of questions about patient demographics and pharmacy experiences relating to gender identity and sexual orientation, was completed by members of the 2SLGBTQQIA+ community residing in Canada from October 2022 to June 2023. Survey items were developed based on Government of Canada and Trans PULSE surveys and items were adapted to reflect pharmacy practices and experiences. The survey was announced online on Wholehealth's social media channels, community groups, and pride organizations. The survey was completely anonymous with no identifiers being collected and individuals self-selected their participation.

Results: A convenience sample of 50 responses were collected from the Web-based survey. 70% of participants accessed pharmacy services monthly, with most having a community pharmacy they regularly visit. About half of the responses indicated being uncomfortable discussing 2SLGBTQQIA+ specific healthcare needs with a pharmacist and discussing either their gender identity or sexual orientation with an unfamiliar pharmacist. Common themes around negative pharmacy experiences included a lack of knowledge about 2SLGBTQQIA+ related care, refusal to use lived names or pronouns, misgendering, and discrimination. Suggestions to incorporate more inclusive care in the pharmacy included: asking for patient pronouns and lived names, protecting patient privacy, posting visuals to establish the pharmacy as a safe space, having 2SLGBTQQIA+ representation in the pharmacy team, and training pharmacy professionals on 2SLGBTQQIA+ health topics.

Conclusion: 2SLGBTQQIA+ patients report varied experiences when accessing pharmacy services across Canada, highlighting gaps in knowledge and cultural safety around their care. There is an urgent need for pharmacy educators to consider these findings in their curricula to better prepare pharmacy graduates to support 2SLGBTQQIA+ patients.

POSTERS – PHARMACY PRACTICE

PP-41

Patient and pharmacist perspectives of pharmacist-led remote hypertension monitoring

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Purpose: Over 40% of patients with hypertension are sub-optimally managed, which offers the opportunity for pharmacists to incorporate technology in monitoring. Existing technology empowers patients to capture and monitor real-time health metrics. The University of British Columbia Pharmacists Clinic (the Clinic) is a pharmacist-led clinic that offers in-person or telehealth consultations lasting 30-60 minutes. The objective of this study was to evaluate patient and pharmacist attitudes, experiences and perspectives of a remote, pharmacist-led hypertension management program, which incorporated a mobile health application, A&D Heart Track, into routine care.

Methods: This was a 6 month, pre- and post-intervention study of a pharmacist-led, remote monitoring hypertension program using Heart Track to monitor patient blood pressure coupled with pharmacist consultation and intervention. The study used a mixed-model design, which included distributing facilitated surveys at various time points during the 6-month study with the addition of interviews with patients and pharmacists to gain insight into their experiences. Inclusion criteria included age over 18, hypertension diagnosis, under active care at the Clinic, smartphone capability, ability to participate in phone/video interviews and ability to self-monitor blood pressure.

Results: 17 patient participants were enrolled in the study and 8 pharmacists were involved in their care. Survey responses showed that 94% of patient participants were satisfied with using the mobile health application to record their blood pressure. 94% of patient participants felt using the mobile application was a feasible method to improve communication regarding their health status to the pharmacist or other health care providers. 88% of patient participants felt better cared for knowing that a pharmacist was actively monitoring their blood pressure using the application. All 8 pharmacists felt that using the mobile health application to monitor their patient's health was manageable and enabled increased involvement their patient care. No pharmacists felt that integrating remote monitoring into their workflow was difficult.

Conclusion: This study demonstrated that a remote monitoring approach for hypertension management was useful and practical for both patients and pharmacists. These findings can be used to improve accessibility to care through expansion of telehealth services and applied to other conditions such as type 2 diabetes.

POSTERS – PHARMACY PRACTICE

PP-42

Pharmacists' experience, knowledge, attitudes, and perspectives regarding psilocybin therapy

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Purpose: Psilocybin is the main psychoactive component of a naturally occurring psychedelic organism commonly referred to as “magic mushrooms”. Current literature demonstrates beneficial effects of psilocybin for treatment-resistant depression, cancer-associated depression and anxiety, and substance use. There are ongoing efforts to increase clinical research into psilocybin as a therapeutic option for a variety of medical conditions. Thus, pharmacists need to be adequately equipped with knowledge to address questions from patients and care providers. Currently, there is no literature describing pharmacists’ perspectives on psilocybin. Evaluating pharmacists’ knowledge, experiences, and opinions about psilocybin may yield beneficial and applicable information to develop educational programs, clinical tools, and guide psilocybin policy making decisions. The objective of this study was to evaluate the experience, knowledge, attitudes and perspectives of pharmacists on psilocybin as an emerging therapeutic option.

Methods: Licensed pharmacists in Canada were invited to participate in an anonymous, online, 44-item survey aimed at evaluating pharmacists’ experiences, knowledge, and attitudes towards psilocybin. Recruitment for the study was done through five Canadian pharmacy association newsletters (Alberta, British Columbia, Manitoba, Nova Scotia, and Ontario) and via LinkedIn. Data analysis was conducted using Qualtrics, Microsoft Excel and IBM SPSS Statistics for Windows. Counts, mean, standard deviation and ranges are reported. Free-text responses were evaluated using an inductive coding approach.

Results: Survey responses showed that 73% of pharmacists lacked formal education regarding psilocybin. Forty percent of pharmacist respondents had conversations about psilocybin less than once a month while 60% of pharmacist respondents have never received questions about psilocybin. Pharmacist respondents are not comfortable with their knowledge with making recommendations (75%), monitoring (57%), nor recommending doses of psilocybin (64%) to patients. Free text responses highlighted that pharmacists felt the need to have formal training regarding psilocybin therapy and that pharmacies should be dispensing psilocybin products.

Conclusion: This study showed that pharmacists are open to embracing a role in psilocybin therapy and dispensing. Creation of clinical practice guidelines and increased accessibility to educational materials is necessary to supplement pharmacists’ knowledge on psilocybin.

POSTERS – PHARMACEUTICAL SCIENCE

PS-1

The effects of antipsychotic discontinuation or maintenance on the process of recovery in remitted first-episode psychosis patients - A systematic review and meta-analysis of randomized controlled trials

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Purpose: The optimal duration of antipsychotic treatment following remission of first episode psychosis (FEP) is uncertain, considering potential adverse effects and individual variability in relapse rates. This study aimed to investigate the effect of antipsychotic discontinuation compared to continuation on recovery in remitted FEP patients.

Methods: CENTRAL, MEDLINE (Ovid), Embase, and PsycINFO were searched on November 2, 2023, with no language restrictions. Randomized controlled trials (RCTs) evaluating antipsychotic discontinuation in remitted FEP patients were selected. The primary outcome was personal recovery, and secondary outcomes included functional recovery, global functioning, hospital admission, symptom severity, quality of life, side effects, and employment. Risk of bias was assessed using the Cochrane risk-of-bias tool 2, and certainty of evidence was evaluated with GRADE. Meta-analysis used a random-effect model with an inverse-variance approach.

Results: Among 2185 screened studies, 8 RCTs (560 participants) were included. No RCTs reported personal recovery as an outcome. Two studies measured functional recovery, and discontinuation group patients were more likely to achieve functional recovery (RR 2.19; 95% CIs: 1.13, 4.22; I2=0%; n=128), although evidence certainty was very low. No statistically significant differences were found in hospital admission, symptom severity, quality of life, global functioning, or employment between discontinuation and continuation groups; however, certainty of evidence was very low in most of these outcomes. The risk of bias appeared to explain the heterogeneity in the hospital admission rate. Considering only studies categorized as having moderate risk of bias, rather than high risk of bias, the hospital admission rate was higher in the antipsychotic discontinuation group (RR 3.54; 95% CIs: 1.28, 9.77; I2=0%; k=2, n=193).

Conclusion: Personal recovery was not reported in any antipsychotic discontinuation trial in remitted FEP. The observed positive effect of discontinuation on functional recovery came from an early terminated trial and an RCT followed by an uncontrolled period. Interpretation of these findings should be approached with caution due to the limited number of studies, the very low certainty of evidence, and the observed increase in hospital admission rates following antipsychotic discontinuation in some studies.

PS-2

N-phenyl ureidobenzenesulfonates, a new family of human dihydroorotate dehydrogenase inhibitors inducing apoptosis and differentiation in acute myeloid leukemia

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Purpose: Differentiation therapies are important new approaches to treat acute myeloid leukemia (AML). Dihydroorotate dehydrogenase (DHODH) catalyses the fourth step of the *de novo* pyrimidine synthesis pathway leading to DNA formation and replication. Recent findings have highlighted that DHODH inhibitors could be an innovative alternative to classic differentiating agents such as arsenic trioxide and all-trans retinoic acid (ATRA) for the treatment of AML. In this context, we recently developed a new family of DHODH inhibitors designed as *N*-phenyl ureidobenzenesulfonates (PUB-SOs). Our previous works has shown that PUB-SOs exhibit antiproliferative activity in the hundred nanomolar to low micromolar range toward several adherent human tumor cell lines. They cause cell cycle arrest in S-phase and DNA damage. This study evaluated their effect on 3 AML cell lines.

Methods: Firstly, the antiproliferative activity of PUB-SOs against THP-1, MOLM-13 (AML-M5) and HL-60 (AML-M2) cell lines was assessed with MTT method and expressed as half-maximal inhibitory concentration (IC_{50}). Secondly, cell cycle arrest and markers of myeloid differentiation (CD11b and CD14) were evaluated by flow cytometry analysis. Finally, we studied the ability of PUB-SOs to induce cell apoptosis by flow cytometry using Annexin V/Propidium Iodide (PI) staining and mitochondrial membrane potential assays (MitoTracker red and green).

Results: PUB-SOs exhibited antiproliferative activity (IC_{50}) toward all AML cell lines tested in the range of nanomolar to low micromolar. Besides, MOLM-13 cells were more sensitive to PUB-SOs than THP-1 and HL-60 cells. PUB-SOs induced a strong S-Phase cell cycle arrest (53 to 78%). Furthermore, an increase in $CD11b^+CD14^+$ markers was observed in THP-1 and HL-60 cells treated with the most potent PUB-SOs (50 to 74% and 47 to 50%, respectively), while MOLM-13 cells showed mainly an increase in $CD11b^+$ markers (23 to 77%). Finally, our findings support that PUB-SOs induced apoptosis as shown by a decrease in the mitochondrial membrane potential (40% cells with low MitoTracker red staining) and increased Annexin V^+PI^+ cells up to 40%.

Conclusion: This study supports that PUB-SOs are promising DHODH inhibitors against AML. Their potent anti-AML activity is in part mediated by cell cycle arrest in S-Phase, induction of cellular differentiation and cell apoptosis.

POSTERS – PHARMACEUTICAL SCIENCE

PS-3

When less is better: association between psychotropic drugs and torsade de pointes

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Purpose: Taking antidepressants and antipsychotics may lead to a prolongation of the corrected QT interval on the electrocardiogram and the potentially fatal arrhythmia torsade de pointes. Because this is an uncommon arrhythmia, research focuses mainly on the corrected QT interval prolongation rather than on the arrhythmia itself, rendering difficult the recognition of the actual arrhythmic risk. This study was performed to assess the relative impact of psychotropic medication use among all known risk factors in patients with documented torsade de pointes.

Methods: Using a case-control methodology with a 1:3 ratio, we included 110 patients hospitalized with torsade de pointes. The 330 controls were the three consecutive patients on the same hospital ward. We performed two distinct three-step hierarchical logistic regression with (step 1) demographic TdeP risk factors (sex; age), (step 2) further TdeP risk factors (other QTc-prolonging drug use, including antiarrhythmics; hypokalemia, acute myocardial infarction, left ventricular dysfunction, and hepatic failure and/or renal failure) and (step 3) antidepressant and antipsychotic use as monotherapy for the first model and psychotropic polypharmacy (≥1 antidepressant + ≥1 antipsychotic or ≥2 antidepressants or ≥2 antipsychotics) for the second model.

Results: Adding antidepressant and antipsychotic monotherapy in step 3 of the first regression model did not produce a significant difference from previous steps (p=0.83) and odds ratio for both medication classes were not significant. However, in the second model, the addition of psychotropic polypharmacy generated a significant difference with step 2 (p=0.03) and the odd ratio was 3.17 ([95%CI: 1.07; 9.41], p = 0.04).

Conclusion: Moving away from the research's current focus solely on the electrocardiographic marker, in patients who have experienced the actual torsade de pointes arrhythmia, using a psychotropic drug as monotherapy was not associated with torsade de pointes, but concomitant use of antidepressants and/or antipsychotics was. These results could provide reassurance for healthcare professionals about prescribing psychotropic medication as monotherapy while bringing more cautiousness when advising for psychotropic polypharmacy.

POSTERS – PHARMACEUTICAL SCIENCE

PS-4

Half-life, oral absorption and antitumoral activity of CEU-938, a novel prodrug targeting CYP1A1-expressing breast cancer cells

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Purpose: Despite considerable efforts for treating breast cancer (BC), it remains the first cause of cancer-related death among women worldwide. It is thus important to develop novel therapies for BC to improve the life expectancy of patients. In this context, we developed a new family of prodrugs designated as *N*-alkyl phenylimidazolidones (AIMZs) that are bioactivated via an *N*-dealkylation in CYP1A1-expressing cancer cells. Our previous screening studies identified an AIMZ named CEU-938 exhibiting antiproliferative activities in the low nanomolar range in human CYP1A1-expressing cancer cell lines and a selectivity ratio >100 compared to non-sensitive cell lines devoid of CYP1A1. In this study, we present the half-life, the oral absorption and the antitumoral activity of CEU-938 in mouse models.

Methods: The half-life and the oral absorption of CEU-938 were determined using a healthy CD-1® IGS female mouse model either through intravenous (IV) injection or oral bolus at 3.6 or 200 mg/kg, respectively. Blood was obtained via venipuncture in the tail vein after 0.5, 1, 2, 4, 8 and 12 h. The proteins in the samples were precipitated using methanol and filtered out. DMSO was added to the sample prior evaporation for 2 h at 55-60 °C. The samples were reconstituted in a mixture of DMSO, water and methanol (20:40:40) and quantified by UHPLC-UV. The antitumoral activity of CEU-938 was assessed in CYP1A1-expressing breast cancer cell MCF7 tumor-xenografted CD1-Foxn1^{nu} nude mice. CEU-938 was administered IV at 3.6 mg/kg biweekly for three weeks when tumor sizes reached 50-100 mm^3. The tumoral growth inhibition was evaluated for 65 days. NaCl 0.9%, the vehicle and paclitaxel were used as controls.

Results: CEU-938 exhibited a half-life of 22 ± 2 h after IV administration. It was also absorbed after oral administration exhibiting a half-life of 18 ± 1 h. Moreover, CEU-938 did not show toxicity at the administered doses and exhibited significant antitumoral activity reducing the size of the tumors by 29% which is similar to the positive control, paclitaxel.

Conclusion: This work shows the potential of CEU-938 as a lead molecule for the development of a novel effective targeted therapy for patients with CYP1A1-expressing breast cancers.

PS-5

Causality assessment of adverse events among drug users in a hospital setting: Are these investigated by healthcare professionals? A retrospective study conducted at Institut universitaire de cardiologie et de pneumologie de Québec - Université Laval

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Purpose: The use of a drug product can involve several risks including the occurrence of an adverse event (AE) (i.e., any unwelcome clinical manifestation that appears after using drug products), which can lead to death, disability, life threatening, etc. Causality assessment detects a causal link between a drug and an AE. It helps to document more accurately the risk/benefit ratio of a drug product on the market. Despite the importance of causality assessment of AE among drug users in post-market surveillance, the proportion of AEs investigated for their causality remains poorly studied. The purpose of this study is to evaluate the proportion of AEs for which causality is investigated in a tertiary center hospital and list the causality assessment tools used by healthcare professionals.

Methods: This retrospective study included 500 patients (randomized 125/year) hospitalized at the Institut universitaire de cardiologie et de pneumologie de Québec – Université Laval, between 01/2018 and 12/2021. Electronic medical records (EMR) were reviewed, and relevant variables were extracted: 1) demographic, 2) hospitalization, 3) medication, 4) patient, and 5) causality assessment. Descriptive analyses (median, minimum-maximum, proportion) were performed to characterize the sample.

Results: Patient demographics were: median age, 69 years (min-max: 21-96 years), 43.6% female, median comorbidities/patient 4 (1-12). In total, 2541 AEs, including 302 serious AEs (8.4%), were identified, corresponding to a median of 4 (0-40) AEs/patient. The 3 main categories of AEs, according to the medical dictionary for regulated activities MedDRA, were: 1) cardiac disorders [System Organ Class code: 10007547] (n=445; 17.5%), 2) general disorders and abnormalities of the site of administration [10018065] (n=327; 12.87%), and 3) vascular disorders [10047065] (n=255; 10.04%). The sums of 9568 drug products were identified, for a median of 18 (2-56) per patient. Among them, 76 were suspected of causing AEs. Among all AEs (n=2541), the causality assessment method was not registered in EMRs (n=0.0%). Thus, no causality assessment tool was used (n=0.0%).

Conclusion: The exhaustive assessment of causality was not documented, both for serious and non-serious AEs. One must question the causes related to the under-evaluation/under-documentation of the causality of AEs in a hospital setting and work to improve it.

PS-6

Protective effect of the CD36/SR-B2 receptor ligand EP80317 against hind limb ischemia-reperfusion-induced remote inflammatory response in mice

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Purpose: Purpose. Remote organ injury, such as respiratory complications and lung tissue damage, occurs after ischemia-reperfusion of skeletal muscle. Following blood reperfusion, polymorphonuclear neutrophils (PMN) and monocytes are recruited to the lungs and release inflammatory mediators. In particular, blood-derived macrophages play an important role in the inflammatory response. The scavenger receptor CD36, as a receptor for oxidized lipids, contributes lung inflammation. We hypothesized that modulating the CD36 response expressed by lung macrophages a CD36 selective ligand, EP80317 (Haic-D-Trp(2-Me)-D-Lys-Trp-D-Phe-Lys-NH2), may attenuate leukocytes recruitment to the lungs and mitigate the inflammatory response caused by hind limb ischemia-reperfusion in C57BL/6J mice.

Methods: Methods. Male $CD36^{+/+}$ and $CD36^{-/-}$ mice were pretreated daily with a subcutaneous injection of EP80317 (300 µg/kg) for 14 days preceding the induction of skeletal ischemia of the right hind limb in anesthetized mice by the application of a rubber band downstream of the femoral muscle for 30 minutes, followed by a 3-hour reperfusion period. Lung tissue was collected after euthanasia to assess leukocyte recruitment and inflammatory markers expression.

Results: Results. In the lungs of $CD36^{+/+}$ mice, global leukocyte recruitment, as assessed by the myeloperoxidase (MPO) assay, showed reduced leukocyte counts in EP80317-treated mice, by 39% ($p < 0,001$) in $CD36^{+/+}$, but not $CD36^{-/-}$ mice. Consistent with these results, H&E-stained microscopic slides of lung tissue showed a 28% ($p < 0.05$) reduction in leukocyte counts of $CD36^{+/+}$ mice treated with EP80317. A tendency to decrease was also observed in manual microscopic counts of granulocytes cells for the same group. Gene expression of Nlrp3, a marker for inflammatory inflammasome was decreased by 48% ($p < 0.01$), in agreement with IL-1β levels in lung homogenates, reduced by 29% ($P < 0.05$).

Conclusion: Conclusion. In a hind limb ischemia/reperfusion murine model, treatment with EP80317 was shown to decrease leukocytes recruitment in the lungs in a CD36-dependent manner, and to mitigate inflammation by reducing the inflammatory markers Nlrp3 and IL-1β. The results suggest that CD36 receptor modulation by EP80317 might be a potential therapeutic approach to mitigate pulmonary inflammation caused by hind limb ischemia/reperfusion.
Funding source. Mperia Therapeutics Inc.

POSTERS – PHARMACEUTICAL SCIENCE

PS-7

Portrait of declarations of serious adverse event since implantation of a new legislation at Institut universitaire de cardiologie et de pneumologie de Québec-Université Laval

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Purpose: An adverse event (AE) is any deleterious medical occurrence following administration of a medicinal product that does not necessarily need to have a causal relationship with the treatment. In a 2006 international systematic review that excluded data from the province of Quebec, it was suggested that <6% of AEs would be reported to health authorities. Since the implementation of the Vanessa's Law (16/12/2019), reporting serious AE (SAE) has become mandatory for Canadian hospital. However, the impact of this law on SAE declaration to Health Canada remains unknown.

Methods: A descriptive retrospective study was carried out at the Institut universitaire de cardiologie et de pneumologie de Québec-Université Laval (2018-2021) regarding 3 objectives: 1) document the incidence of AE/SAE in a "real-world" clinical context, 2) quantify SAE reported to Health Canada among those occurring, and 3) assess the impact of Vanessa's Law on SAE reporting to Health Canada. Randomisation of 500 patients was performed by an archivist into 4 cohorts (125 patients/year). Electronic medical records (EMR) were investigated to identify AEs, their reporting and descriptives data (age, body mass index, comorbidities, etc.). Descriptive (median, min-max, interquartile range and proportion) and comparative analyses were performed. Rates were calculated to determine the incidence of AEs, and stratifications were performed.

Results: 43,6% of the sample were women and median of age was 69 [min:21- max:96 years]. Patient had a median of 4 comorbidities [1-12]. The patients consumed 18 different drug products [2-56] during their hospitalisation. Regarding SAE, the median number of SAE/patients was 0 [0-10]. Rates of AE decreased from 4.54 in 2021 to 5.40 per person-year in 2018. There was a correlation between the number of AE/patient and the number of comorbidities ($r=0.117$; $p=0.009$), the number of drugs products consumed ($r=0.578$; $p<0.001$), and the length of hospital stay ($r=0.629$; $p<0.001$). No SAE declarations were found in the 500 files documented.

Conclusion: Our results showed that no SAEs were reported to Health Canada after the implementation of Vanessa's Law in the 500 EMR studied. The law does not seem to have any effect, and therefore, alternative solutions must be explored to improve reporting.

PS-8

Protectin DX: Enhancing the therapeutic response of obeticholic acid in the context of cholestatic autoimmune liver diseases.

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Purpose: Primary biliary and sclerosing cholangitis (PBC and PSC) are rare autoimmune liver diseases in which the accumulation of toxic bile acids (BA) plays a critical role in their pathogenesis [1]. *The reduction of BAs is therefore an important pharmacological target for PBC and PSC treatments [1]*. Currently, obeticholic acid (OCA), an inhibitor of BA synthesis, is one of the only two drugs approved for the treatment of these diseases [2, 3]. While being efficient in normalizing liver enzymes, OCA is also associated with dose-related side effects that recently led Health Canada to publish novel contraindications for the treatment of decompensated PBC patients [4, 5]. It is imperative to identify safer treatments. *This study investigates whether protectin DX (PDX), an omega-3 derivative with anti-inflammatory properties, can improve the response of low dose OCA on BAs reduction [6].*

Methods: Human hepatoma HepG2 cells were treated for 24H with vehicle (DMSO/Ethanol), and 1µM OCA with or without PDX (5µM) and DHA (50µM) [positive control]. Transcriptomic (qRT-PCR), proteomic (Western blot), or metabolomic targeted (LC-MS/MS) approaches were employed to assess the effects of the treatments.

Results: In the presence of PDX and DHA, liver cells exhibited a stronger response to 1µM OCA compared to the drug alone. Indeed, OCA 1µM caused a 54.3% reduction of the CYP7A1 transcript levels, the rate limiting enzyme in BA synthesis, while in the presence of PDX, the same amount led to stronger ($p<0.05$) reduction of this transcript to 64.7%. Interestingly, the combination of OCA and PDX ($p<0.05$) led to a stronger reduction of chenodeoxycholic acid (CDCA) secretion in cell media. PDX also enhanced the ability of OCA to increase the expression of BA export transporters such as OSTα/β, MRP2 and 3 ($p<0.001$).

Conclusion: These experiments demonstrate that, like DHA, PDX improves the ability of a low dose OCA to inhibit BA synthesis and export in HepG2 cells. Considering the importance of BAs' accumulation in the pathogenesis of PBC and PSC, the use of PDX + low OCA dose combinations may provide a safer treatment for these diseases. Further analyses are, however, required to validate this hypothesis.
(1)PMID:31169523 (2)PMID:36289726 (3)PMID:12166927 (4)PMID:31680292 (5)PMID:29928160 (6)PMID:34920958

POSTERS – PHARMACEUTICAL SCIENCE

PS-9

Distinct endocytic pathways after synthetic and endogenous ligands binding to the CD36 scavenger receptor in macrophages

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Purpose: It is known that scavenger receptor cluster of differentiation 36 (CD36)/SR-B2 interaction with oxidized low density lipoproteins (oxLDL) results in its internalization, followed by the initiation of an intracellular proatherogenic signaling cascade in macrophages. In contrast, MPE-298, a synthetic cyclic azapeptide analog of the growth hormone releasing peptide-6 (GHRP-6), although featuring high affinity and selectivity binding towards CD36, shows potent anti-atherosclerotic effect in mice. The aim of our study was to investigate the various intracellular trafficking pathways of the CD36 receptor after its binding to either synthetic (MPE-298) or endogenous (oxLDL) ligands in murine macrophages. We hypothesized that both MPE-298 and oxLDL promote a disposition of CD36 via the endosomal pathway towards the lysosomes in macrophage cells.

Methods: J774 murine macrophages, transiently expressing mouse CD36 tagged to the green fluorescent protein (GFP) were incubated with either 100 nM MPE-298 or 25 µg/mL oxLDL in a time-course study ranging from 5 to 15 minutes. Different endocytosis compartments were labelled with specific antibodies against endocytic markers to study their colocalization with CD36, including early (EEA-1), late (Rab7) and recycling (Rab11) endosomes, as well as lysosomes (LAMP-1). Colocalization of CD36 with endocytic markers was assessed using the ZEISS Axio Observer.D1 fluorescent microscope and the ImageJ Jacop plugin.

Results: Following exposure to MPE-298, we observed that the CD36 receptor colocalizes rapidly within the early and late endosomes, as well as lysosomes, but displays weak colocalization with recycling endosomes. On the other hand, CD36 colocalizes primarily within early endosomes following incubation with oxLDL, with a peak of colocalization after 5 minutes of incubation, while showing low and unstable colocalization with the other endocytic compartments.

Conclusion: This study shows that binding of the MPE-298 azapeptide to the membrane CD36 receptor induces rapid endocytosis of the scavenger receptor, followed by its intracellular trafficking to the lysosomes, where the receptor will be degraded. In contrast, after incubation with oxLDL, CD36 is mainly found in early endosomes. The results suggest that the intracellular path taken by CD36 in macrophages varies depending on its ligand, which might explain the ligands' contrasting effects on atherosclerosis.

POSTERS – PHARMACEUTICAL SCIENCE

PS-10

Atrial remodeling in pregnant mice

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Purpose: Pregnancy is associated with an increased incidence of supraventricular arrhythmias, which can compromise the health of both the mother and the fetus. This increase in cardiac arrhythmias may be associated with changes in the properties of the atria. Accordingly, the aim of this study is to identify the mechanisms of atrial remodeling during pregnancy in mice.

Methods: Experiments were performed on the left atrium (LA) of 2–3-month-old non-pregnant (NP) and pregnant (P, 17-18 days of gestation) female mice. We first studied the atrial electrical activity of P and NP mice using surface electrocardiograms (ECG). Next, echocardiography was used to compare atrial function and dimension between the two groups. Atrial myocytes sarcomere length was measured by confocal microscopy. Atrial action potentials and the transient outward K+ current (Ito) were recorded using current-clamp and voltage-clamp techniques, respectively. qPCR and Western blots were used respectively to quantify gene and protein expression of KV4.2 and KV4.3, the two α-subunits underlying Ito K+ channel.

Results: ECG results indicate that P wave area was 50% higher in P mice (n=21-22, p=0.015), suggesting enlargement of the atria during pregnancy. Echocardiographic data confirmed LA diastolic dilation, which was associated with stronger contraction (51%, n=6/group, p=0.0006), a known arrhythmogenic phenomenon. Consistently, sarcomere length was shorter in P mice myocytes (¯100 nm, NP: n=43, P: n=56, p=0.0024). Furthermore, action potential duration was 48% longer in myocytes from P mice (n=14-16, p=0.0006), leading to prolonged Ca2+ entry and enhanced contraction. This delayed repolarization was due to a 26% (n=18, p=0.017) reduction in Ito density associated with decreased KV4.3 gene (-31%, N=5-6, p=0.058) and protein (-49%, N=4/group, p=0.004) expression.

Conclusion: In conclusion, pregnancy leads to atrial dilation, increased atrial contraction, and prolonged atrial repolarization. All these changes are consistent with the increased risk of supraventricular arrhythmias associated with pregnancy. A better understanding of the impact of pregnancy in atrial function could lead to an improved understanding and management of arrhythmias in pregnancy.

PS-11

Characterization of the transport of insulin-like growth factor binding protein 2 (IGFBP2) and fibroblast growth factor 21 (FGF21) across the blood-brain barrier (BBB).

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Purpose: Fibroblast growth factor 21 (FGF21) is a hormone primarily secreted by the liver, with effects on glucose and lipid homeostasis, as well as insulin sensitivity. The Insulin-like growth factor-binding protein 2 (IGFBP2), belonging to the IGFBP family, is the most expressed in its class in the brain. By binding to IGF-I and II, it modulates their bioavailabilities and metabolic effects. We hypothesize that these two molecules may be involved in Alzheimer's disease (AD), where metabolic deficits are observed in patients.
The aim of this study is to characterize the transport of these two molecules through the blood-brain barrier (BBB).

Methods: Intracarotid cerebral perfusion was used to quantify and characterize the transport of 3H-IGFBP2 and 3H-FGF21 across the BBB in mice.

Results: We demonstrated that ^{3}H-FGF21 and ^{3}H-IGFBP2 cross the BBB with a cerebral transport coefficient (Clup) of approximately 0.30 µl.g^{-1}.s^{-1}. The uptake of ^{3}H-FGF21 is saturable but was not impacted by inhibitors of its receptor phosphorylation (ASP5878 and BJG398). Coperfusion with PSC833 (P-gp efflux pump inhibitor) or Elacridar (inhibitor of P-gp and BCRP) increased Clup by +200% and +600%. The transport of ^{3}H-FGF21 and ^{3}H-IGFBP2 is not altered by AD neuropathology in the 3xTg-AD murine model. Coperfusion of IGFBP2 with the LRP1 receptor antagonist (LRPAP1-RAP) or recombinant IGFBP2 significantly reduced transport by -64.7% and -58%, respectively.

Conclusion: These data suggest that the transport of FGF21 and IGFBP2 is saturable. IGFBP2 transport involves the LRP1 receptor. In the future, it will be necessary to identify entry transporters to better understand the mechanisms of action of FGF21 and IGFBP2 within the brain.

PS-12

Pyridinyl 4-(2-oxoalkylimidazolidin-1-yl)benzenesulfonates and their hydrochloride salts as novel antimitotic prodrugs bioactivated by cytochrome p450 1A1 in breast cancer cells

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Purpose: One of the predominant problems in drug development is the solubility of new molecules in aqueous solutions and galenic formulation for administration in animal studies. Phenyl 4-(2-oxo-3-alkylimidazolidin-1-yl)benzenesulfonates (PAIB-SOs), potent new antimitotic prodrugs bioactivated by cytochrome P450 1A1 (CYP1A1) into phenyl 4-(2-oxoimidazolidin-1-yl)-benzenesulfonates (PIB-SOs) in breast cancers, developed in our research group do not avoid this issue. To circumvent that impediment, salt formation is a widely used strategy to improve hydrosolubility. We hereby report the design, synthesis, evaluation of the aqueous solubility, antiproliferative activity and mechanism of action of novel prodrugs designated as pyridinyl 4-(2-oxoalkylimidazolidin-1-yl)benzenesulfonates (PYRAIB-SOs) and their hydrochloride salts along with their pyridinyl 4-(2-oxoimidazolidin-1-yl)benzenesulfonates (PYRIB-SOs) bioactive metabolites.

Methods: PYRAIB-SOs, their salts and PYRIB-SOs were designed and synthesized, and their maximum aqueous solubility was measured. Their antiproliferative activity was then assessed assay on MCF7 and MDA-MB-468 breast cancer cells expressing CYP1A1 and MDA-MB-231 and HaCat cells devoid of CYP1A1. Then, the effects on cell cycle progression and microtubule integrity of the most potent compounds were assessed on MCF7 cells by flow cytometry and by immunofluorescence, respectively. Thereafter, bioactivation of most promising PYRAIB-SOs by CYP1A1 microsomes and their metabolic stability on rat, mouse and human liver microsomes were assessed by UHPLC.

Results: Our results evidenced that our most potent PYRAIB-SO salts are more hydrosoluble comparatively to their neutral counterparts by factors up to 74-folds. They exhibit high selective antiproliferative activity ratio (between 8 and 660) toward MCF7 and MDA-MB-468 cells expressing CYP1A1 as compared to insensitive MDA-MB-231 and HaCat cells. They arrest the cell cycle progression in the G2/M phase and disrupt the microtubule dynamics assembly. They are also bioactivated by CYP1A1 into their potent PYRIB-SO antimitotic agents by *N*-dealkylation. Finally, PYRAIB-SOs metabolic stability show half-life between 55 and 122 min and intrinsic clearance between 12 and 26 µL/min/mg protein falling in the medium clearance category.

Conclusion: Our study shows that the novel hydrochloride salts of PYRAIB-SOs significantly improve the hydrosolubility of this new family of antimitotic prodrugs maintaining antiproliferative efficacy in nanomolar range. This important achievement will allow to optimize our galenic formulations in view of further biopharmaceutical studies.

POSTERS – PHARMACEUTICAL SCIENCE

PS-14

Investigating the role of 2-linoleoyl glycerol in skin lipid metabolism in vitro

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Purpose: Percutaneous absorption studies of in vitro models are still a challenge in terms of comparison with native human skin (NHS). In fact, 3D skin models are more permeable to testosterone than NHS. However, it was shown that polyunsaturated fatty acid (PUFA)-deficient culture media could be the cause for this altered skin barrier. With the objective of reducing the permeability of the self-assembled reconstructed skin, the lipid metabolism of the model was further investigated. Monoacylglycerols, especially 1/2-linoleoyl glycerol (1/2-LG), were found at higher levels in skin substitutes compared with NHS. These levels were even higher in linoleic acid (LA)-supplemented substitutes despite the overall LA deficiency. With regards to these previous observations, we hypothesized that the skin barrier is less efficient in the model because of an accumulation of monoacylglycerols containing LA moieties (1/2-LG).

Methods: To answer this question, 2-LG supplemented skin substitutes were produced in parallel to unsupplemented substitutes or LA-supplemented substitutes. The concentration of 2-LG and LA in their respective culture media was 10 µM. The testosterone permeability assay was performed on a Franz cell diffusion system. The fatty acids contained in epidermal phospholipids were analyzed by gas chromatography coupled with mass spectrometry and the lipid mediators were quantified using liquid chromatography-tandem mass spectrometry.

Results: Percutaneous absorption of testosterone was similar in unsupplemented and 2-LG-supplemented skin substitutes. Levels of 1/2-LG in LA-supplemented skin substitutes appeared higher compared with those supplemented directly with 2-LG. The epidermal phospholipid fraction contains higher proportions of LA for substitutes supplemented with 2-LG compared with those supplemented with LA. These results indicate that a supplementation with exogenous 2-LG could lead to either higher monoacylglycerol lipase activity or lower incorporation of LA in monoacylglycerols via the diacylglycerol pathway.

Conclusion: In conclusion, these results show that the accumulation of 2-LG in the epidermis of skin substitutes could be one of the factors that prevent the adequate incorporation of LA into epidermal phospholipids of the skin model.

PS-15

Leukocyte recruitment kinetics after a myocardial infarction in a murine model

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Purpose: Myocardial infarction is accompanied by an acute inflammatory response and blood leukocyte recruitment to the heart. Although early reperfusion of blood to the heart is necessary to prevent extended cardiomyocytes death, paradoxically it can amplify the inflammatory response and elicit additional injury. One of the mechanisms associated with this phenomenon is leukocyte recruitment to the infarcted area after reperfusion, initially salvaging the infarct area by clearing debris. However, systemic and local activation of recruited leukocytes at the peri-infarct zone after reperfusion may lead to further myocardial damage. In this study, we characterized the kinetics of leukocyte recruitment to the left ventricle of male mice subjected to transient myocardial ischemia over a period of 21 days.

Methods: C57BL/6 wild-type mice were subjected to a 30-minute period of ischemia by the ligation of the left descending coronary artery. Mice were euthanized by an overdose of isoflurane and exsanguination after 1, 3, 7, or 21 days of reperfusion. The explanted hearts were dissected and the left ventricles (LV) were digested. LV homogenates were then labeled with a mixture of antibodies for myeloid cells (CD45-APC, CD11b-APC/Cy7, Ly6G-PerCP, CD64-PE, Ly6C-FITC, MHC-II-BV421, CD11c-AF700) and for lymphoid cells (CD45-APC, CD3-APC/Cy7, CD4-FITC, CD8-PE). Cell subtypes were assessed by fluorescence-activated cell sorting (FACS).

Results: The FACS results show that the peak accumulation of polymorphonuclear neutrophils is at 24 hours of reperfusion and that of monocytes at day 3. CD4+ lymphocytes are present from day 7 and their levels remain elevated by day 21.

Conclusion: A sequential accumulation of leukocytes was observed after myocardial ischemia and reperfusion in mice. This murine model will be used to characterize the modulatory effect of a new pharmacological treatment to attenuate inflammatory leukocyte recruitment and potentially elevate anti-inflammatory leukocyte accumulation at the peri-infarct zone to promote myocardial healing.
This work is supported by the Canadian Institutes of Health Research.

PS-16

Antipsoriatic microneedle patches loaded with polyphenols or methotrexate

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Purpose: Plaque psoriasis is an inflammatory skin disease characterized by red lesions with whitish scales. Moreover, the risk of toxicity using systemic or biological treatments for a long-term use is high. Consequently, topical treatments are usually the first choice of therapy because of their local effects. However, ointments require several daily applications which eventually lead to poor patient adherence and drug underdosage. Therefore, novel custom-made separable and biodegradable microneedle patches were used to control the release of antipsoriatic drugs. More specifically, the objectives of this project were to: 1) Develop a method to apply the microneedle patch on human reconstructed skin; 2) Evaluate the antipsoriatic effects of microneedle patch applied on human psoriatic reconstructed skin and loaded with either polyphenol or methotrexate, a reference treatment for moderate to severe psoriasis, by comparing their epidermal thickness.

Methods: 1) Biodegradable microneedle patches in PLGA/PLA loaded with Cy5-COOH were applied on the reconstructed skin substitutes (N = 3 donors, n = 3 substitutes/condition). Different combinations of time and temperature were evaluated to enable the detachment from the upper part of the patch leaving the microneedles into the skin. The percentage of successfully implanted microneedles in the skin was determined by fluorescence imaging. 2) Microneedles loaded with polyphenols or methotrexate were inserted into the psoriatic skin substitutes for a one-week treatment. After, skin biopsies directly in contact with the patches and beside the patches were harvested and compared. The epidermal thickness with and without the treatments was determined (N = 3 psoriatic donors, N = 3 healthy donors, n = 2 substitutes/condition).

Results: 1) After 20 minutes at 20 °C followed by 5 minutes at 37°C, the patches were detached from the substitutes where 96% of the microneedles were successfully implanted into the epidermis. 2) The epidermis thickness of the psoriatic substitutes was reduced of 57% by the application of the microneedles loaded with phenolic compounds (biopsies beside the patches). There was diffusion of the polyphenols into the skin substitutes. This reduction was more significative compared with methotrexate.

Conclusion: Microneedle patches loaded with polyphenols are promising for psoriasis treatment and could improve patient compliance.

PS-17

Ketone body transport across the blood-brain barrier by in situ cerebral perfusion in a mouse model of Alzheimer's disease

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Purpose: β-hydroxybutyrate (BHB) is a ketone body that can be used by the brain as an alternative energy source to glucose. Since glucose utilization becomes deficient in Alzheimer's disease (AD), ketogenic interventions are under clinical intervention. Yet, the mechanisms of transport of BHB across the blood-brain barrier (BBB) and the relative role of the monocarboxylate transporters (MTC) remain unknown.

Methods: Intracarotid cerebral perfusion was used to quantify and characterize the transport of 3H-D-β-hydroxybutyrate (^{3}H-BHB) through the BBB of non-transgenic and 3xTg-AD mice (modeling AD neuropathology). A high-fat diet (HFD) was used to induce obesity and metabolic disorders.

Results: First, we showed that ^{3}H-BHB crosses the mouse BBB with a brain transport coefficient (Clup) of approximately 1 $\mu l.g^{-1}.s^{-1}$, similar to brain glucose transport. Competition with unlabeled BHB (x200) did not reduce the Clup, consistent with a non-saturable transport. However, blocking its putative transporter MCT1 with AZD3965 coperfusion resulted in a decrease of the Clup (-17%), suggesting that even if most ^{3}H-BHB diffused freely across the BBB, it can be optimized from a more specific transport mechanism. The brain uptake of ^{3}H-BHB remained similar in 3xTg-AD mice compared to non-transgenic, at different ages (14 and 21 months), independently of HFD consumption.

Conclusion: Our results indicate that (i) BHB brain uptake is similar to glucose with a facilitate diffusion transport across the BBB; (ii) partially dependent of the MCT1 transporter and (iii) unaffected by aging, AD neuropathology or HFD. This work supports the use of ketogenic interventions in AD by improving knowledge of the cerebral transport of ketone bodies.

PS-18

Repurposing FGF21 as a therapeutic tool in Alzheimer's disease

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Purpose: Alzheimer's disease is an incurable form of dementia that shares risk factors with metabolic diseases, including type 2 diabetes. The recombinant human FGF21 (rhFGF21) is a hormone that regulates metabolism and food preference, signaling through the FGFR1 receptor. Evidence also suggests that FGF21 may act on the central nervous system and modulate brain functions, but mechanisms are less understood. We aimed to evaluate the effect of rhFGF21 administration on metabolic, cognitive, and neuropathological markers of Alzheimer's disease (AD) and the activation of its receptor in a mouse model of AD neuropathology.

Methods: We used the triple transgenic mouse model of AD (3xTg-AD), which develops tau and beta-amyloid pathologies over time. To induce an obese phenotype, mice were fed a High-fat (35% w/w) compared to a control (5% w/w) diet starting at 6 months. Then, rhFGF21 (1 mg/kg/day, osmotic minipump) or vehicle were administered from 15 to 16 months of age. After the third week of treatment, glucose, insulin tolerance and cognitive tests were performed. Mice were euthanized for post-mortem protein analysis.

Results: Administration of rhFGF21 with osmotic pumps for one month led to blood levels averaging 154 ng/ml (~8 nM) and resulted in weight loss, decreased fasting glycemia, and leptin as well as improved insulin resistance and glucose response in NonTg and 3xTg-AD mice. rhFGF21 improved anxiety-like behavior in NonTg and 3xTg-AD mice while increasing travel speed and recognition memory in HFD mice only. Regarding neuropathology, rhFGF21 did not alter tau phosphorylation but reduced soluble beta-amyloid ratio in the hippocampus of 3xTg-AD mice. rhFGF21 also activated its receptor, FGFR1, in the liver but not in the hippocampus. Lastly, lower levels of FGFR1 activation were seen in the cortex of 3xTg-AD mice while an acute intracarotid injection activated FGFR1 in the parenchyma.

Conclusion: Besides robust regulation of metabolism, the effects on cognitive endpoints observed here suggest that rhFGF21 can also present a therapeutic potential for CNS diseases, such as AD. rhFGF21-induced phosphorylation can be detected in the brain at very high doses. Whether rhFGF21 impact on the brain is direct or indirect through the periphery remains to be determined.

POSTERS – TEACHING AND LEARNING

T-1

Geriatric education for undergraduate pharmacy students: A scoping review

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Purpose: Pharmaceutical care for older adults requires specific knowledge and skills. Therefore, pharmacy curricula should include appropriate strategies to prepare students for care of this population. This scoping review aimed to identify how geriatric concepts are included in pharmacy curricula, and to map current literature on preferred teaching and assessment methods related to geriatric pharmacy education.

Methods: Four databases were searched to identify papers involving pharmacy learners, education and geriatrics. Selection process was a two-step approach, involving independent title/abstract screening by two reviewers, then full-text retrieval for eligibility assessment. All types of articles were considered except opinion papers. Data extraction included details on methodology, participants, setting, educational activity, teaching method and outcomes assessed.

Results: A total of 1796 articles were identified from which 130 met the inclusion criteria;148 documents after citation and grey literature searching. Articles were grouped for analysis as education-related intervention articles (studies, n = 57 or descriptive articles/case reports, n = 43), studies not including an education-related intervention (n = 29) and others (e.g. reviews, position papers/statements, n = 19). Various teaching methods were reported including experiential, didactic, interprofessional or simulation. Most articles reported positive outcomes on skills, knowledge or attitudes but few articles used a validated assessment tool. Curricula and student's surveys were consistent with suboptimal geriatric education with few programs offering mandatory dedicated geriatric courses or rotations.

Conclusion: Gaps remain regarding geriatric inclusion in pharmacy curricula despite decades of literature, and the lack of mandatory content in accreditation standards seems to contribute to this ongoing issue. A wide diversity of teaching methods has been described and their combination may be considered for skills and competency development. There is a need for the scholarship of teaching and learning to be applied to pharmacy programs in order to prepare future pharmacists for an aging society.

T-2

Experiential educator recognition: Exploring preceptorship as accredited learning

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Purpose: Experiential learning in pharmacy education provides a venue for students to apply their knowledge and skills in real-world practice settings, under a pharmacist preceptor's or practice educator's supervision. Practice educators (PEs) are essential partners in pharmacy programs, and recognizing their contributions to student learning and their roles in this regard can vary from school to school. Clinical appointments, access to accredited learning resources, and formal awards are some of the approaches to PE recognition employed by the UBC Faculty of Pharmaceutical Sciences Office of Experiential Education. This project sought to explore the idea of formal recognition of preceptorship as an accredited learning activity.

Methods: A student-led, focused environmental scan was conducted, both for all pharmacy schools in Canada, and for seven health professional programs at UBC. Only open-access web resources were reviewed. Two search strategies were applied: manually searching the school/faculty websites for information regarding preceptorship (specifically searching for keywords: preceptors, preceptorship, clinical educators, practice educators, mentors, community educators, community partners) and searching the keywords "preceptor", "preceptorship", and "educator" using the school/faculty website search box.

Results: Of the 10 pharmacy schools and seven health professional programs included in the scan, two pharmacy schools in Canada and one health professional program at UBC were identified as having some information relating to accreditation of preceptorship or hours of preceptorship being applicable as accredited learning. Detailed information on preceptor eligibility, criteria, and scope of these opportunities was limited in these openly accessible resources.

Conclusion: This preliminary and focused environmental scan sought to discover whether this concept of preceptorship as accredited learning had been explored in health professional programs at UBC or in pharmacy programs in Canada. Future steps related to this inquiry will need to consider the detailed characteristics, and limitations, of this type of PE recognition.

POSTERS – TEACHING AND LEARNING

T-3

Using professional ethics scenarios to assess professional identity formation among first year PharmD students

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Purpose: A weak professional identity is associated with an over-reliance on personal values rather than those of the profession. As a result, patient-care decisions may be more reflective of these personal values. In effect, duty-to-self and provider-focused outcomes supplant patient-centred care and duty-of-care. Within PHAR 110, professional identity is explicitly addressed during a Professionalism module that covers a range of related topics including: characteristics of a profession, professionalism, professional identity, and professional ethics. The study objective was to assess changes in duty-to-self versus duty-of-care (individual versus professional identity) among students completing a Professionalism module in Year 1 of the PharmD program.

Methods: Prior to starting the Professionalism module, and as a regular part of the class, students complete an on-line questionnaire consisting of five ethical scenarios. The scenarios concern a patient presenting with a legal prescription for a clinically appropriate drug that the pharmacist considers morally objectionable. Students are asked to indicate whether it is acceptable for the pharmacist to refuse to dispense; actively prevent the patient from receiving; express an opinion regarding; refer the patient to another pharmacist; or be obliged to dispense the drug. Student responses are aggregated and discussed during the professionalism module. At the end of the module, students are asked to complete a second questionnaire consisting of the same five scenarios.

Results: Twenty-three students (27%) of the 2023 PHARM 110 class provided written consent to the presenting of their responses in aggregate form outside the classroom. Compared to the pre-module questionnaire, the post-module responses indicated significantly greater support for duty-of-care for three of the five scenarios: actively prevent; express an opinion; and refer the patient.

Conclusion: The findings suggest first year pharmacy students are amenable to increasing their support for professional attitudes and behaviours such as patient-centredness and duty-of-care. The three scenarios showing substantive and significant changes reflect situations in which professional directives have clearly set out the pharmacist's professional responsibilities. By including and discussing these directives within the curriculum, and tying these to professionalism, pharmacy educators can play an important role in promoting attitudes and behaviours that support the formation of a strong professional identity.

T-4

Fostering a culture of student wellbeing: Results and recommendations from the UBC pharmacy student wellbeing survey

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Purpose: Promoting and fostering student wellbeing is pivotal in not only supporting academic success, but also in providing lasting benefits as students transition into their professional careers. A Student Wellbeing Working Group (SWWG) in our faculty was tasked with creating an evidence-informed wellbeing plan that would apply to students across all academic programs. In order to assist in creating this plan, the SWWG created a needs assessment survey to identify areas in the curriculum and program that may be diminishing student wellbeing.

Methods: An online survey was deployed to all students enrolled in the Entry-to-Practice (E2P) PharmD degree program. We used a mixed methods design for the survey, which included both qualitative and quantitative measurements around student perceptions and concerns across 5 domains of wellbeing: Emotional, Physical, Social, Career and PharmD/Program Experiences. Quantitative results were analyzed using a 5-point Likert Scale from *not concerned* (0) to *very concerned* (4). Thematic analysis was conducted on the qualitative sections of the survey. Additional questions asked about time commitments outside of school and time spent studying, personal identity and well-being, and agreement with several statements about the pharmacy program.

Results: A total of 498 students completed the survey. The most prominent concerns, both equally ranked, were overall workload and level of personal stress (2.77). These were followed closely by pressure to maintain grades (2.68), time for self-care (2.57), and number of assessments (2.56). Students spent 64 hours/week engaged in academic and non-academic responsibilities (i.e., work). Qualitative analysis reinforced these findings, highlighting stress related to academic schedules and challenges in finding time for self-care. Notably, 70% of students cited their emotional wellbeing as the top priority they wanted the faculty to help address. Overall, students felt that the faculty did not support and advocate for their wellbeing, nor did they feel that the curriculum supported it.

Conclusion: Executing a student wellbeing plan requires faculty engagement and commitment across many facets of our program.

POSTERS – TEACHING AND LEARNING

T-5

Assessing pharmacy students' awareness of Indigenous Peoples in Canada: from insight to action

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Purpose: Profound health disparities exist between Indigenous and non-Indigenous populations in Canada, with Indigenous peoples experiencing increased rates of poor health outcomes, lower life expectancies, and higher rates of disease. Awareness of Indigenous perspectives, histories, and issues are crucial for pharmacists to deliver culturally safe care. The objectives of this study were to assess the state of knowledge of pharmacy students regarding Indigenous cultures, governance, geographies, histories, and current events and reflect on curricular changes to address knowledge gaps.

Methods: An online survey was co-designed with over 300 community members and Indigenous stakeholders. The survey was comprised of 77 questions focused on demographics, knowledge sources, reflections, and a 36-item knowledge test representing information that Indigenous peoples found essential for Canadians to know. This survey was administered online and in-person to first-, second-, and third-year undergraduate pharmacy students at the University of Manitoba in 2018 before implementation of the PharmD curriculum. Descriptive statistics were used for data analyses.

Results: Among 157 pharmacy students, there were 86 respondents (55%). Seventy-three students (85%) reported that they had knowledge of First Nations, Metis, and/or Inuit peoples, while 15% indicated that they did not. The most common knowledge sources were educational settings, personal experiences, and the media. Overall, 79% of students felt Indigenous content was not taught or poorly taught at the College of Pharmacy before PharmD implementation. The knowledge test revealed an average test score of 49% (SD 14%). After the test, students reported feeling more informed about Indigenous peoples, with 74% of students indicating that they should be taught more.

Conclusion: Since survey implementation, important curricular changes have been made, including over 20 hours of Indigenous content weaved within the curriculum. Before PharmD implementation, there was a significant gap in knowledge about Indigenous people, culture, and perspectives amongst pharmacy students at the University of Manitoba, as evidenced by poor, variable performance on the knowledge test. It is vital to continue to address knowledge gaps and advocate for the prioritization of Indigenous wellness, awareness, accountability, and meaningful engagement to improve Indigenous cultural competency and safety training for graduating pharmacists.

POSTERS – TEACHING AND LEARNING

T-6

An environmental scan of cannabis education in Canadian Doctor of Pharmacy programs and CCCEP-accredited continuing education courses

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Purpose: The latest review of the Cannabis Act suggests making medical cannabis accessible through Canadian pharmacies. In anticipation of this change, an updated environmental scan, inspired by Tang and Colleagues (2020), was conducted to identify potential gaps and opportunities in cannabis education across Canadian PharmD programs. The scan also captured CCCEP-Accredited courses for pharmacists.

Methods: In June 2023, an environmental scan was conducted to capture cannabis-related content in 10 Canadian Entry-to-Practice PharmD programs and active CCCEP-Accredited courses. Senior informants from each school participated in a brief survey, sharing details on course titles, covered topics, and the extent of coverage. Concurrently, CE courses were identified from the CCCEP website, and captured topics covered, training hours, costs, and program expiration dates.

Results: Eight PharmD programs provided varying degrees of cannabis training, with one school not reporting any cannabis-related content and another not responding. No courses were solely dedicated to cannabis education; some included dedicated lectures or modules, while others briefly mentioned it within broader contexts. Three active CE courses were identified, two were set to expire, and one was exclusive to University of Waterloo pharmacy students; all courses required a fee to complete. Across all sources, the most common topics were cannabis pharmacology, medical indications and therapeutic uses, adverse effects, and drug interactions. The least common topics were perspectives of those with lived/living experience, non-medical use, and harm reduction.

Conclusion: Cannabis education in PharmD programs varies in content and often lacks coverage of important topics like harm reduction, which has not changed significantly since the 2019 review of pharmacy education programs. There is also a lack of accessible cannabis CE courses for pharmacists. Given the changing landscape of cannabis availability in pharmacies and the expanded scope of practice for pharmacists, there is a need for additional education for pharmacists so they are prepared to provide optimal patient care. Recognizing these gaps offers an opportunity for educators to integrate relevant cannabis content into pharmacy education and create accessible cannabis CE courses for practicing pharmacists.

T-7

Characterizing LGBTQ+ education interventions for pharmacy students, pharmacy residents and pharmacists.

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Purpose: The lack of LGBTQ+ related curriculum in Canadian pharmacy schools can perpetuate the health inequities affecting these populations. Countless studies have iterated pharmacy students' and/or pharmacists' lack of comfort or readiness to provide care to LGBTQ+ patients. Pharmacists should have knowledge of sexual orientation and gender identity and expression (SOGIE), the intersection of those identities, and understand the lived experiences and histories of the communities they serve to provide safe and inclusive care. This narrative review characterizes articles that discuss LGBTQ+ topics integrated into pharmacy education.

Methods: A literature search was conducted in March 2022 using CINAHL, OVID-EMBASE, and OVID-Medline. Studies on pharmacy education for students, residents or practicing pharmacists were included. Editorials, reviews, commentaries, or articles not focused on LGBTQ+ education were excluded.

Results: A total of 201 studies was found in the initial search. 13 studies were included in the review. 62% of studies focused on transgender therapeutics and care. Other topics included inclusive language and environments (e.g., pronouns), LGBTQ+ terminology, health disparities, and health screening. 11 studies utilized pharmacy students as participants, and 2 studies researched pharmacists. No studies looked at education interventions for pharmacy residents. No studies were conducted in Canada. Two-Spirit identities and health topics were not addressed in any studies. 85% of the studies utilized pre- and post-surveys to assess the benefit of the education intervention. Didactic teaching interventions were used in majority of the studies, however 4 studies included activity-based learning such as panel discussion, Jeopardy, patient-cases, and mock counselling. Inclusion of these interventions improved participants' knowledge and confidence in caring for LGBTQ+ patients.

Conclusion: Limited literature is available relating to LGBTQ+ content in pharmacy curricula, though most studies highlight the value of incorporating transgender therapeutics and care into pharmacy education. This review found both didactic and activity-based learning activities beneficial in improving students' knowledge and confidence in working with LGBTQ+ populations. A Canadian perspective on LGBTQ+ topics in pharmacy education would be of utility to existing research.

POSTERS – TEACHING AND LEARNING

T-8

Assessing complex thinking in an objective structured clinical examination (OSCE) in a pharmacy program

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Purpose: Used to support student learning and the application of professional skills, OSCEs assess a range of clinical competencies. Although primarily used to measure discrete knowledge and skills, select questions within OSCEs may have the potential to assess more complex thinking (CT), also referred to as higher-level or critical thinking. With the goal of assessing student application of CT, our research objectives included identifying questions within existing OSCEs that might capture CT, as well as responses that would indicate the level of competency (inadequate, growing, proficient, or exceptional).

Methods: Using a strategy based on the four major components of critical thinking, the authors reviewed current third year OSCE scenarios to identify those containing at least one question with the potential to assess CT. For the selected scenario question, a small number of video recordings of student responses were reviewed by the authors to determine its potential for capturing different levels of CT. A preliminary rubric of CT categories, criteria and scoring was created. Two experienced OSCE assessors then reviewed all student videos for the selected scenario to confirm the suitability of the identified question for assessing CT and, if necessary, suggest changes to the preliminary rubric.

Results: A third year OSCE was identified as containing a question with the potential to assess CT. In the scenario, the standardized patient asks, "Is this drug addicting?", to which the student is expected to respond. Initially, the CT response categories and scores included: inadequate (0); growing (1); proficient (2); and exceptional (3). To better reflect the rubric's scoring criteria the categories became: CT not evident (0); CT possible (1); CT apparent (2); and CT confirmed (3). Following a review of 86 student videos by the two experienced assessors, minor adjustments were made to the rubric in terms of CT categories and criteria descriptors.

Conclusion: By identifying questions within existing OSCE scenarios that might capture CT, as well as student responses that would indicate the level of CT competency, we were able to demonstrate that OSCEs designed to assess discrete clinical skills also have the potential to assess more complex, or higher-level thinking.

T-9

Impact of an online branching community pharmacy case on student's patient communication skills

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Purpose: First-year students (PY1) enter the PharmD program with varied levels of experience, often having difficulty visualizing and integrating patient-centred care (PCC) activities within community pharmacies. Many students also question the feasibility of providing PCC in a community pharmacy. An online interactive branching scenario was developed to support their understanding. This scenario was piloted during Skills Lab in 2022W1. A thematic analysis of the pilot student survey found several perceived benefits. Of these benefits, communication, including negative outcomes of clinical decisions, and student confidence were the most prevalent and thus chosen for further exploration in year 2.

Methods: The case was delivered again during Skills Lab in 2023W1 to PY1 students (n=227) with a post-activity survey. The survey focused on the effects of the tool on student understanding of communication in pharmacy practice and consisted of Likert-style questions and short answer responses. All submissions were anonymous, and students could opt out of having their submissions used for this project. Incomplete submissions were discarded. In the remaining submissions (n=134), themes were identified, and Likert-style responses were analyzed.

Results: Survey respondents agreed that the activity supported the understanding of how to effectively communicate with patients (96%). From a list of skills, respondents indicated that the activity helped them (1) develop empathy (86%), (2) be professional when communicating (91%), and (3) tailor responses to the situation and patient (85%). Respondents selected widely across the list with the least popular option being selected by 54% of respondents. Respondents found the inclusion of negative outcomes of clinical decisions increased their understanding of potential challenges to patient care (73%), better prepared them for real-world scenarios related to working in the community (75%), and to be very or extremely useful (61%), Overall students reported a 2.18 point jump in confidence in providing patient care within a pharmacy on a scale of 1-10 comparing before and after completing the activity.

Conclusion: Our interactive branching scenario activity supports student development and understanding of effective communication skills in pharmacy practice. This highlights the effectiveness of high-quality branching scenarios for supporting student development of communication skills within the context of community pharmacy practice.

POSTERS – TEACHING AND LEARNING

T-10

Student perspectives on the integration of environmental sustainability and climate change into the Doctor of Pharmacy Program curriculum

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Purpose: There has been an increased focus on evaluating the environmental impact of medications, in particular inhaled therapies. Therefore, a need to incorporate relevant material into the UBC Entry to Practice Doctor of Pharmacy (PharmD) program's curriculum has been identified. While the second year respirology module would be an ideal place to include this topic, it is uncertain to what extent students have already been exposed and what their preferences are with respect to educational format. Literature regarding student preference surrounding the incorporation of this topic is lacking. The objective of this study was to assess students' educational exposure, knowledge level, and interest/preference for learning about the impact of medications on the environment and the pharmacist's role in reducing this impact.

Methods: An online survey was developed and disseminated via email and social media to the 865 students enrolled in Program Year (PY) 1 to 4 of the UBC PharmD program. The survey consisted of 13 questions covering demographics, prior knowledge level on the topic and learning preferences. Descriptive statistics were used to analyze the responses.

Results: One hundred and seventeen students completed the survey (response rate =14%) with 26% in PY1, 24% in PY2, 26% in PY3 and 24% in PY4.
Over a third (37%) of participants indicated previous educational exposure to climate change and sustainability separate from their PharmD education, and 21% indicated exposure during their PharmD education.
Further, regarding knowledge level on the contribution of the healthcare systems on climate change and the environment, most students rated their knowledge level as basic (38%) or moderate (29%). Regarding the impact of pharmacy practice and pharmaceuticals on climate change and the environment, most students rated their knowledge level as basic (31%) or moderate (36%).
Lastly, 77% of participants felt that integrating education on climate change and sustainability into the PharmD curriculum was necessary, of which 70% stated a preference for hands-on practical learning.

Conclusion: This study highlights the gap in environmental education within the UBC PharmD program and that student knowledge on this topic is limited. Students preferred future content on this topic to utilize hands-on learning.

POSTERS – TEACHING AND LEARNING

T-11

Embedding interprofessional education activities in experiential courses

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Purpose: Students at Leslie Dan Faculty of Pharmacy are required to complete three flexible activities to achieve one interprofessional education (IPE) graduation requirement – IPE Component in a Practice Setting. Prior to 2023/24, students completed these flexible activities during any experiential course(s) throughout their APPE year. As a result, educators noted that many were completed late in the year, causing student stress, lack of alignment with the most appropriate experiential course, low preceptor involvement, and operational difficulties. In 2023-24, they were embedded as mandatory assignments within specific experiential courses. This was expected to maintain students' learning, reduce students' stress, and improve operational delivery.

Methods: To measure the effectiveness on operational delivery, a retrospective review (May 2020 – Dec 2023) was completed on CORE ELMS® with demographics, graduation year, and the date for each activities' submission by students. Missing data for submission dates was handled differently for the current cohort and previous. For the current cohort the last day of the embedded rotation was used and for previous years, the date used was the submission date for other IPE activities or the last day of an active experiential course whichever was earlier. Data was collated into quarters starting in an academic year (Quarter 1 = May – July). The proportion of students completing each flexible activity, and all requirements per quarter was compared by Chi-Square tests with significance set at $p<0.05$.

Results: Changes for individual flexible activities and overall completion was demonstrated across the years. Overall, the proportion of students who completed all activities in Quarter 4 decreased from 58.2% (2021), 76.3% (2022), and 67.2% (2023) to an anticipated 4.7% (2024) ($p<0.0001$). In 2023/4, only six students have not completed their IPE Activities in the required rotations - five were administrative errors, and one was remediated.

Conclusion: Embedding IPE flexible activities led to a more balanced delivery across the experiential year. Next steps are to ensure student satisfaction with the change.

T-12

Pharmacy students' perspective: Blended learning sessions design guidelines

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Purpose: Blended learning is defined as the combined use of online learning and in-person learning. If carefully designed, it provides opportunities for students to be independent learners, while encouraging collaboration. Web tutorials and peer learning have been implemented in certain Pharmacy schools to facilitate the teaching and learning of clinical skills. However, to construct an effective blended curriculum, student perspectives should be considered to describe the aspects of web tutorials and peer learning that are most beneficial to students.

Methods: A qualitative methodology was used to gain students' perspectives on blended learning. UBC Entry-to-Practice PharmD students in years 2 and 3, who completed the Inhaler Technique Training blended sessions were invited to participate in individual semi-structured interviews on Zoom.

Results: Six individual semi-structured interviews (three PY2 students and three PY3 students) were conducted. Three themes emerged from the data: (1) Ideas about constructing web tutorials, (2) Ideas about constructing peer learning sessions, (3) Pharmaceutical skills suitable for delivery through blended learning. It was found that in a blended learning curriculum, web tutorials should be used to teach theoretical information, while peer learning should be focused on the physical application of clinical skills. In general, web tutorials should incorporate audio, visual, and text cues to ensure simple and clear instruction. Web tutorials should also be engaging and comprehensive. For peer learning, instructors must ensure the demonstration of proper technique and accurate information, and that feedback is provided to students.

Conclusion: This research provides guidelines to construct a web tutorial and in-person peer learning session. The findings can be used to develop future blended curricula to improve the delivery of teaching and learning clinical skills for pharmacy students.

T-13

Creating a patient-friendly medication decision support tool for Parkinson Disease

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Purpose: Parkinson Disease (PD) is a chronic, progressive neurodegenerative disorder which causes involuntary and uncontrollable movement. Wait times for movement disorder specialists in BC can range 6-12 months, leaving long stretches between appointments, where patients are left to self-manage their medications. The needs of PD patients are poorly understood and few resources exist to support patients through medication decisions. Partnering with a local non-profit organization, a community pharmacist, and a neurologist, we collectively sought to understand medication-related challenges for patients and build an online medication decision support tool.

Methods: Utilizing a double diamond research design process, we underwent 4 phases: 1) Discovery: identified key questions and challenges related to medications through a survey and focus group, 2) Explore and Define: conducted an environmental scan of existing patient education resources and defined the focus of the tool, 3) Develop and Test: created the tool based on findings, 4) Deliver and Listen: sought feedback from our PD advisory committee and made iterative improvements.

Results: In the discovery phase, thematic analysis of qualitative surveys (n=83) and focus group (n=56) data revealed 5 medication-related patient needs: understanding medication options, managing medication adjustments, dealing with side effects, planning for future medication changes, and training for pharmacists. Based on the findings, 4 steps were included in the tool: 1) Assessment of current medications and symptoms, 2) Suggested and other medications comparing benefits and risks, 3) Things you can do to adjust medications, and 4) Summary of action plan and non-drug tips. Feedback on the tool to-date from the advisory committee (n=7) has been incredibly positive.

Conclusion: PD patients are highly motivated to independently manage their medications, but lack the resources and support to make changes with confidence. The subjective nature of symptoms/severity and the wide range of medication dosing made it difficult to create a decision support tool that was both evidence-based and general to the public, while also not making specific recommendations that should be overseen by a healthcare provider. The tool has been successfully implemented across three areas: 1) for the general public, 2) during online medication support groups, and 2) as a learning tool in pharmacy education.

POSTERS – TEACHING AND LEARNING

T-14

"This should be included in our normal content": Evaluation of an upper-year 2SLGBTQ+ pharmacy classroom-based elective

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Purpose: Presently, there are only three hours of mandatory content dedicated to 2SLGBTQ+ health in the UBC Entry to Practice PharmD program. The creation of the upper-year course, Pharmacist's Role in Gender Responsive 2SLGBTQ+ Care, is part of the Faculty's effort to equip future pharmacy graduates with the knowledge, skills, and attitudes required to provide quality care to 2SLGBTQ+ people. This one-term, three-credit, upper-year elective course takes a human-centric approach to examine the historical and contemporary contexts, selected therapeutic areas and the role of pharmacists in 2SLGBTQ+ care while deconstructing the cisheteronormative structures that pervade health care. Student experience and their perceived impact of the course were evaluated.

Methods: At the end of the semester, all enrolled students (n = 6) completed an online questionnaire and four took part in a focus group. The questionnaire assessed student competency in course topics and perceived value of the course. The focus group provided a deeper understanding of course perceptions and feedback on content, learning activities, and assessments.

Results: Only half of the students (3/6) felt they had adequate knowledge for discussions on course topics when coming into the course. This response can be explained by student reports that the course "fills the gap in the curriculum" and that "prior to this we had no background information on [basic knowledge and skills to provide care to 2SLGBTQ+ clients]". Students also reported significant increases in competencies related to deconstructing professional identities, reinforcing inclusive pharmacy practice, and became aware that the healthcare system and health research reinforce cisheteronormativity. While students provided suggestions on ways the course could be improved (i.e., providing clearer connections to pharmacy practice, offering more depth on certain topics), overall students felt more connected to 2SLGBTQ+ communities and reported a heightened commitment to advocating for equity-deserving communities.

Conclusion: Overall, student perceptions of the course experience were highly favourable. Their self-rated knowledge of the historical and contemporary treatment of 2SLGBTQ+ people and inclusive pharmacy practice increased, along with a commitment to advocate for 2SLGBTQ+ communities, and acknowledgment of gaps in the pharmacy curriculum on these topics; thus, highlighting the importance of educating students on 2SLGBTQ+ health.

T-15

Development and evaluation of an educational module and workshop for pharmacists managing suicidal ideation

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Purpose: The World Health Organization has identified that the COVID-19 pandemic triggered a 25% increase in the prevalence of anxiety and depression worldwide, supporting the need for healthcare professionals to be prepared to respond. The role of pharmacists in the management of suicidal ideation has been identified in the literature; however, the focus is primarily on community pharmacists or pharmacy students. Pharmacists are now commonly in positions to assess patients across all settings where suicidal thoughts or ideations may be expressed.
The purpose of this research was to develop and evaluate an asynchronous educational module and a synchronous, case-based workshop for pharmacists on the management of suicidal ideation.

Methods: In 2020 an environmental scan was performed, confirming the lack of training geared towards pharmacists outside of the community setting. Educational module content was created based on a literature review and expert consultations. The module was piloted and evaluated in 2021. Survey analysis informed the development of a 90-minute synchronous workshop to support learning objectives, which was piloted and evaluated in 2023.

Results: Nine pharmacists from across Canada participated and provided feedback on the asynchronous pilot module. Evaluation of this content showed increased perceived confidence and efficacy in managing patients with suicidal ideation, as well as positive shifts in perceived attitudes in managing those with suicidal ideation. Workshops were delivered in February of 2023 to a further nine participants. Results of the "pre-post" survey on the workshop showed improvement in perceived efficacy and confidence in managing suicidal ideation. All participants agreed that the workshop was useful, delivered effectively, and that the overall experience was positive.

Conclusion: The education was well received and valued by pilot participants. The data collected through this research will be used to develop and deliver a full educational activity as continuing education for pharmacists and undergraduate pharmacy students.

POSTERS – TEACHING AND LEARNING

T-16

Uncovering the underrepresentation of skin of color education in the UBC PharmD curriculum

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Purpose: The lack of diversity in the dermatology curricula in medical schools has been a longstanding challenge in North America. Recently, the scope of pharmacists' practice has been expanding across Canada, with added prescribing authority for minor ailments including various skin conditions in BC. As such, pharmacists must have the ability to recognize and diagnose skin disorders in patients with different skin tones such as patients with skin of color (SoC). Thus far, the dermatology education in pharmacy schools remains to be evaluated. We hypothesize that there is an underrepresentation of SoC in the current Entry-to Practice PharmD dermatology curriculum at the University of British Columbia. We aimed to assess and supplement student learning resources for inclusion of diverse skin tones in common skin conditions.

Methods: To evaluate the dermatology curriculum, lecture slides in the dermatology module were audited. Images utilized were classified based on the Fitzpatrick scale with Fitzpatrick 1-3 representing non-SoC and Fitzpatrick 4-6 representing SoC. A database of SoC images in dermatological conditions was also curated with images collected from peer-reviewed journals and skin databases. Finally, a literature review was performed investigating the best practices for treatment of select dermatological conditions in SoC patients.

Results: Following the audit, it was noted the dermatology module contained 15 lectures, with a total of 795 slides and 230 images of skin. We observed that SoC images accounted for only 13.5% (31/230) of total skin images included in the DERM module. The proportion of Fitzpatrick 4-6 skin images were significantly lower than Fitzpatrick 1-3 images ($P<0.0001$, Chi-square test). In addition, a database containing SoC skin images for 21 conditions taught in the module was created and will be circulated to faculty members as a resource for future lectures. Literature review identified clinical nuances with regards to disease presentation in SoC patients, as well as treatment management.

Conclusion: The current dermatology curriculum in the E2P PharmD program at UBC significantly lacks diversity and requires content modifications to be inclusive of skin of color. Our findings will be essential to advocate for improvements to the curriculum to better prepare pharmacy students for practice.

T-17

State of the academic pharmacy workforce specializing in geriatrics

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Purpose: Pharmacy education programs inconsistently deliver geriatrics content, and programs differ in length, format, and educational philosophy. No study has previously asked geriatrics pharmacy academics about their experiences, support, and satisfaction. The objectives of this study were to describe the roles, activities, and extent to which geriatrics faculty in American and Canadian schools of pharmacy engage with geriatric-focused teaching, research, and practice.

Methods: A questionnaire was developed and piloted and refined to include 52 questions encompassing teaching, scholarship, practice, and service. Listserves from pharmacy academia were used for the USA and Canada, with invitations sent directly to pharmacy faculty and associate/assistant deans to forward to relevant faculty. The cross-sectional -survey was administered through Qualtrics starting summer 2022.

Results: A total of 150 surveys were submitted with 129 completed responses. A total of 89.8% of participants had a PharmD degree, 4.6% had a PhD, and 32.6% had a PGY2 specialty residency. Participants were mostly non-tenure track (59.7%) and 76.7% maintained an active clinical practice. Teaching effort was highest at 40-59% (37.2% of participants), and 6.2% of participants had 80% or more teaching effort; teaching was primarily for clinical sciences or therapeutics (90.2%), then foundational science principles (66.7%). A total of 84.5%agreed (strongly agreed or agreed) that teaching assignments were aligned with geriatrics expertise, but 23.6% felt they did not have adequate time to teach geriatrics content. Only 10% of respondents had 40% or more time dedicated to research, although 72.6% were involved in some scholarly work. Only 35.6% agreed that they could obtain research funding, and 37.8% agreed that they had adequate training in research methodology.

Conclusion: Pharmacy faculty members specializing in geriatrics report fairly heavy teaching and clinical workloads, but require further support for scholarly engagement.

T-18

Best practices in geriatrics pharmacy education: An international survey of exemplars

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Purpose: Healthcare requirements, particularly poly-pharmacotherapy, for older adults have increased following demographic shifts. Geriatric medicine is a topic that often remains underrepresented or an elective in pharmacy curricula. Understanding the approach to teaching geriatrics may help to design pharmacy education and prepare clinicians for practice. The purpose of this study was to identify 1) various approaches and modalities for the successful delivery of geriatrics education within pharmacy curricula internationally and 2) challenges and opportunities that influence the effectiveness of learning and teaching in geriatrics.

Methods: A qualitative study comprising semi-structured individual interviews and an online pre-interview questionnaire was conducted. Pharmacy educators (including professors/instructors/practitioner-teachers/course coordinators) based in tertiary institutions internationally were identified as exemplars by their peers through professional networks and invited to participate. Interview transcripts were manually, inductively coded to identify emergent themes.

Results: In total, 11 exemplars (with an average of 6 years' experience in teaching geriatrics) from Canada, USA, UK, Australia, and Qatar participated in the study: 11 completed the questionnaire, and 7 went on to complete the interview. Theme saturation was attained at 7 interviews, with subthemes emerging under two over-arching themes. Theme 1 included integration of personal and professional approaches to teaching, with a reliance on authentic clinical expertise, emphasizing the 'whole' patient, interprofessional collaboration, and storytelling. Innovation and adaptability were particularly featured, such as using retirement homes or other partnerships as resources to aid in teaching. Theme 2 included challenges and opportunities encountered within curricula, negative attitudes toward geriatrics as the primary barrier, and limited resources and issues related to curriculum planning and structure. The exemplars recommended supporting more clinician educators for geriatrics, early exposure to case-based geriatrics, prioritizing partnerships to enhance learning, and ensuring the content goes beyond therapeutics to prepare students for real world practice.

Conclusion: Exemplars in geriatrics pharmacy education consistently used their clinical expertise to build cases, share stories, and engaged their interprofessional network in their efforts to provide the best pharmacy education they could, despite structural barriers.

POSTERS – TEACHING AND LEARNING

T-19

Redesigning an interprofessional collaboration practicum to constructively align with the interprofessional competency framework

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Purpose: A fourth-year level interprofessional collaboration practicum (IPC) was launched in 2019 to prepare students to work in interdisciplinary settings. Students are placed in non-pharmacy practice settings and precepted by health care professionals such as a nurse or family physician. Feedback has consistently highlighted that two of six Canadian Interprofessional Health Collaborative interprofessional competencies (i.e., collaborative leadership and interprofessional conflict resolution) were challenging to develop amongst students due to limited learning opportunities.
In response, we redesigned the practicum to create learning activities that would constructively align with all six interprofessional competencies. Two new learning activities were developed: a preceptor interview on collaborative leadership, and a conflict resolution roleplay scenario.
The purpose of this study was to explore the short-term impact of the redesigned practicum on student learning.

Methods: This mixed-methods study invited students and preceptors as study participants. Four of six preceptors participated in a semi-structured interview or focus group. All six students participated in a post-pre questionnaire and focus group. Interview and focus group responses were thematically analyzed with a constructivist, inductive approach.

Results: In the questionnaire, overall, students self-reported a positive magnitude of change in their interprofessional competencies after the course was completed. For example, the question "I can apply collaborative leadership skills in working with other health professionals to improve patient outcomes" increased from beginner-intermediate to intermediate-advanced. From the student focus group, identified themes were: 1) role clarification (sub-themes: positionality, authentic exposure to other roles), 2) reflexivity, and 3) interprofessional communication. Comments such as "I feel like I grew a lot in that area [interprofessional conflict resolution]" and that "valuing each other's opinions and allowing each person to shine in their area of expertise while also working together [collaborative leadership]" supported the questionnaire results. From the preceptor responses, identified themes were: 1) value add to site, 2) challenges (sub-themes: practical, evaluating competency, information overload), 3) preceptor peer-to-peer learning.

Conclusion: The renewed IPC practicum afforded students the opportunity to practice and develop all six interprofessional competencies. In response to preceptor feedback, a future direction is to create peer-to-peer learning opportunities for preceptors to bridge their siloed learning sites and individual practices.

POSTERS – TEACHING AND LEARNING

T-20

An APPEtite for knowledge: Student perspective of teaching and learning advanced pharmacy practice experiences

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Purpose: The School of Pharmacy at Memorial University offers teaching and learning rotations for the Advanced Pharmacy Practice Experience (APPE) rotations. The purpose of this survey was to assess students' experiences during teaching and learning APPE rotations and how the skills gained contribute to the development of their core competencies

Methods: An online survey was developed to assess student's perceptions of their teaching and learning APPE rotation. Inclusion criteria included pharmacy students who completed an APPE teaching and learning rotation at Memorial University between May 2021 to April 2024. Questions were developed by preceptors who supervised students, using information from the AFPC educational outcomes as a guide. Questions included students' perspective of skill development, application of knowledge related to teaching and learning, relevance to pharmacy practice, ability to meet the AFPC educational outcomes, and demographic characteristics. The survey was created in Qualtrics and used 5-point Likert scale and open-ended responses that asked about the strengths of the program and areas for improvement. The survey was circulated to student's email address. Survey responses will be analyzed using descriptive statistics and open-ended responses will be reviewed for common themes, including strengths and limitations of the rotation.

Results: A total of 25 participants were invited to participate in the survey. Data will be collected until May 15, 2024.

Conclusion: Student perspectives on skill development and knowledge application during teaching and learning APPE rotations offers insight for preceptors on how non-direct patient care placements provide valuable learning opportunities that align with AFPC educational outcomes. These perspectives will inform revisions to the rotation which will improve the experience for the students. It will also allow us to share our findings with other preceptors across the country who are considering offering teaching and learning rotations.

T-21

Incorporating planetary health content in pharmacy education: A scoping review

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Purpose: Climate change is the biggest threat to humankind, biodiversity, and global health. In addition to dealing with the consequences of climate change first-hand (e.g., malnutrition, natural disasters, population displacement), the health care sector is a major contributor to greenhouse gas emissions. Although there is more discussion regarding how the profession of pharmacy can contribute to environmental sustainability in Canada recently, it is unknown to what extent this topic is included in pharmacy education. There are no current requirements to incorporate planetary health education in pharmacy curricula in Canada, and no consensus on core planetary health educational outcomes for those graduating from Canadian Pharmacy schools; and no recommendation on how to distribute content throughout curricula. To achieve this, a complete understanding of the current evidence on this topic is paramount to lay the foundation for which the competencies will be built, as well as identify gaps and future directions. The objective of this scoping review is to summarize and describe the extent, range and nature of research and implementation of planetary health content within pharmacy education globally.

Methods: A scoping review was performed in accordance with the Arksey and O'Malley framework and the PRISMA-ScR checklist. Medline, Embase, Web of Science, Scopus, Education Source, CINAHL, ERIC, Global Health, and APA PsycINFO databases were searched using well-defined inclusion (planetary health content, focus on pharmacy education, all languages and types of publications accepted) and exclusion criteria (continuing education programs). Dual independent reviewers screened and assessed articles for eligibility (Published up to March 2024), and data is currently being charted to collate results.

Results: The search strategy produced 1827 articles. After screening, seven articles were included. Grey literature and reference lists were also reviewed, yielding an additional nine articles. The identified data suggest that although limited, there is work being done internationally to incorporate planetary health in pharmacy education. Comprehensive results, identified knowledge gaps, and future directions will be presented during the conference.

Conclusion: Findings and conclusions from this scoping review will allow for a better understanding of what planetary health content is being incorporated within pharmacy education globally, supporting development within Canadian pharmacy curricula.

T-22

Lessons learned from the development of two biosimilars massive open online courses for patients and healthcare providers

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Purpose: We aim to present the key lessons learned from a large-scale MOOC (Massive Open Online Course) initiative delivering education to patients, caregivers, healthcare providers and trainees in Pharmacy, Nursing and Medicine. The findings will contribute to the overall understanding of our evaluation of the program theories.

Methods: The MOOC project involved collaboration between the University of Toronto and external partners to develop and deliver two Biosimilar MOOCs. The Social Constructivist Theory underpinned the curriculum and incorporated Adult Learning Theories. A survey was sent to the pan-Canadian Advisory Committee and content developers before the launch of the MOOCs (summer of 2023). The survey consisted of both open and closed questions addressing satisfaction, confidence in the education programs and general feedback. The survey was sent to 19 individuals, of which 10 were Advisory Committee members and 9 were content developers. Responses were collected anonymously and the team thematically compiled the results.

Results: Nine respondents (47%) completed the survey, including four (40%) Advisory Committee members and five (56%) content developers. The findings reveal a range of challenges encountered, including resourcing issues, turnover of project staff, content development complexities, and accreditation management. However, the project also yielded positive outcomes, such as valuable support from external partners, the dynamic and cohesive nature of the project team, and the establishment of beneficial partnerships. The results emphasize the importance of clear communication, expertise in assessment development, and the need for sustainable budget allocation.

Conclusion: Insights gained from this project can guide future initiatives in the development and delivery of MOOCs, emphasizing the need for clear guidelines, transparent review processes, and sustainable budget allocation. Actionable recommendations are provided, ultimately contributing to the advancement of online education and learning experiences.

POSTERS – TEACHING AND LEARNING

T-23

The Impact of patient journey on student learning in an HIV Module

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Purpose: Many pharmacy students' limited personal experience with diseases and healthcare navigation poses a challenge in teaching them about a patient's healthcare journey and fostering empathy. To address this, patients with lived experiences were invited to share their journey with Program Year 3 (PY3) students at the University of British Columbia Entry-to-Practice (E2P) PharmD (n=210) during three HIV tutorial sessions. The goals include enhancing students' empathy, providing context for learning, and fostering an appreciation for the complexity of patients' journeys from the manifestations of signs and symptoms to undergoing treatment.

Methods: During 2022 winter term 2, four people with lived experience were invited to the PY3 HIV tutorial sessions to discuss their patient journey. Before the session, the speaker(s) received a set of 12 questions to aid in their preparation and maintain consistency in the topics addressed during the sessions. Questions included: "How did the diagnosis make you feel?" and "What suggestions do you have for pharmacists in caring for patients living with HIV?" The instructor facilitated the session using slido.com for anonymous audience questions. Subsequently, students completed a brief five-question survey to evaluate this educational intervention.

Results: 196 survey responses (93% response rate) from students were received. Most students (n=188 96%) rated the workshop 4 or 5 on a scale of 1-5 (1=one of the worst and 5=one of the best learning experiences) compared to other HIV educational experiences (mean = 4.61). When asked “Do you think hearing and interacting with a live patient regarding his/her/their care journey increased your level of empathy?”, 190 (98%) responded “yes” and 4 responded “neutral”. Qualitative analysis of open-text responses shows that the session helped students reflect on their own biases and the kind of pharmacist want to become.

Conclusion: The results show that patients sharing lived experiences can foster students' professional identity formation and an increase in self-reported empathy levels. The session will be repeated in winter 2023 to add to the evaluation data reported. Future steps involve identifying additional opportunities in the E2P PharmD Curriculum for similar interactions. Subsequent research could investigate the impact of lived experiences on students' motivation and engagement in therapeutic lectures.

POSTERS – TEACHING AND LEARNING

T-24

Factors impacting pharmacists' knowledge, attitudes, and confidence in recommending mobile health applications in patient care

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Purpose: Studies have demonstrated the benefits of utilizing mobile health (mHealth) applications (or "apps") to improve patient care. However, no guidelines currently exist for pharmacists on recommending mHealth apps to patients. Our literature review aims to characterize the factors that influence pharmacists' current knowledge, attitudes, and confidence in recommending mHealth apps to patients, to elucidate features pertinent to mHealth apps deemed important in a pharmacist's patient care assessment.

Methods: A search was conducted on Embase and Medline, for studies on the knowledge of, attitude towards, and confidence in mHealth apps in pharmacists. We performed a title–abstract screen followed by the retrieval and screening of full texts. Conference abstracts, editorials, and records with full texts not accessible or not in English were excluded. Thematic analysis was conducted on the included studies.

Results: We identified 330 studies, of which 10 were included in our analysis. Pharmacists under 35 years of age had better perceptions of mHealth apps and their use in patient care. Factors promoting pharmacists' attitude towards and confidence in recommending mHealth apps are predominantly features related to the app itself, such as availability on multiple platforms, good visual appeal, user friendliness, patient-friendly presentation of information, and notification features including reminders that improve medication adherence. Factors leading to negative attitudes and confidence include omission or insufficient use of supporting scientific evidence and concerns with confidentiality, as well as user-related barriers such as a lack of technological literacy in certain users.

Conclusion: We identified reported common factors facilitating the adoption of mHealth apps in patient care, as well as barriers related to pharmacists' concerns in the apps' content and the intended users' technological capability. Further studies conducted locally in Canada may offer the opportunity to promote adoption by improving factors related to both the apps and the perceptions towards them in supporting patient-centered care. Findings from this project will serve as a foundation for an environmental scan of Canadian pharmacists on their perceptions towards and confidence in recommending mHealth apps in patient care.

T-25

Research exposure in entry-to-practice pharmacy programs in Canada

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Purpose: Research is a necessary component of healthcare to improve diagnosis and treatment outcomes as well as efficiency in our system. Pharmacists have various roles in research that they are involved in or lead. North American accreditation standards for pharmacy schools highlight the importance of teaching research, but there are no set standards. Current literature is limited and research exposure has not been described for Canadian pharmacy students. The objective of this study is to describe research-related coursework, experiential rotations, and additional experiences, and to identify barriers to the implementation of experiential research rotations.

Methods: This was a descriptive study utilizing cross-sectional surveys. A set of three electronic surveys were distributed to all 11 pharmacy schools in Canada in July 2023. Two surveys were directed to the faculty and the third survey to pharmacist preceptors. All responses were included in data analysis. Categorical variables were reported as counts and percentages. Open-ended responses were analyzed using the Braun and Clark approach to determine if a theme was present.

Results: Two responses were received for the first survey, which indicated that courses in statistics and research methods are available. Three responses were received for the second survey, which indicated that experiential research rotations are available with between 8 and 65 students completing a rotation each year. Ten responses from preceptors were received, which indicated they precept an average of two students per year for 8-week research rotations in both academic and clinical pharmacy settings. Rotation activities include data collection, data analysis, literature review, writing, and giving presentations. More preceptors identified benefits (100%) versus barriers (67%) to offering research rotations. Benefits included students making a meaningful contribution and increasing research output, increased student and pharmacist awareness of and interest in research, increased student skills, and opportunity for publication. Barriers included preceptor time, time required to complete projects, funding and preceptor mentorship.

Conclusion: Canadian pharmacy schools reported research coursework and experiential research rotations being a part of their programs. There was variability in whether courses and rotations were mandatory or elective, as well as the activities offered.

POSTERS – TEACHING AND LEARNING

T-26

Characterization of student pharmacist patient care at a university pharmacist-led clinic

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Purpose: The UBC Pharmacists Clinic (the Clinic) is a site for Advanced Pharmacy Practice Experience (APPE) practicums. Entry-to-Practice PharmD students have the opportunity to complete an 8-week direct patient care rotation in the primary care practice setting. At the Clinic, students care for a variety of patients while under pharmacist supervision and document their patient care interventions in electronic medical records (EMRs). Patient visits consisted of 1 hour initial or 30-minute follow-up appointments at the onsite Clinic via in-person and virtual visits or at offsite family physician medical clinics. The objectives of this study were to characterize drug therapy problems and interventions from student pharmacists and to capture physician acceptance of student recommendations.

Methods: A retrospective chart review was conducted on patient EMR records from August 1, 2018 to April 30, 2020. Patient charts required at least 1 appointment led by a 4th year student pharmacist and at least 2 appointments in total to be included. Descriptive statistics were used to characterize the patient population, drug therapy problems (DTPs) encountered, and the interventions implemented. Chi Squared test was used to examine disparities in physician acceptance.

Results: Eight student pharmacists and 120 patient EMR charts were included in this study. The average patient was female (60.8%), 60 years old, taking 9 medications and had 5 medical conditions. Students found 250 DTPs in their encounters with 120 patients. The most common DTPs identified were needs additional drug (30.4%), unnecessary drug (17.6%) and adverse drug reaction (19.6%). On average, students documented at least one DTP (range 0-10) per patient per visit. Students recommended 253 interventions in total, which were evenly distributed: change prescription (17.5%), start prescription (15.6%), stop non-prescription (13.6%), and start non-prescription (13.2%). The rate of physician acceptance differed by practice site with a statistical significance between the offsite and onsite acceptance (29.0% offsite vs 17.7% onsite, $p< 0.001$).

Conclusion: The results of this study act to characterize student interventions in the primary care practice setting and outline the potential value of these interventions in improving patient care. Physicians were more likely to accept students' recommendations when students were physically at physicians' offices.

POSTERS – TEACHING AND LEARNING

T-27

Gamification of minor ailment prescribing education for pharmacy students: A needs assessment

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Purpose: On January 1, 2023, pharmacists in Ontario were granted the authority to prescribe for 13 minor ailments. As of October 1, 2023, the list was expanded to six additional conditions. Serious games (or gamification) in health profession education aims to improve knowledge retention in a more engaging format than traditional teaching and learning methods. We intend to design educational games related to pharmacist prescribing for minor ailments (PPMA) for early career pharmacists and pharmacy students. The objective of this needs assessment project is to identify minor ailment conditions, disease-related, and drug-related concepts that may benefit from educational games for reinforcing pharmacy students' and pharmacy professionals' knowledge and skills on PPMA.

Methods: We surveyed 230 Year 4 University of Toronto PharmD students using a six-item online questionnaire, distributed via the student listserv and Facebook page in December 2023. Quantitative data collected were analyzed using descriptive statistics. Free-text input was subject to thematic analysis.

Results: We received 23 responses (10% response rate). Pinworms and threadworms were perceived to be the most challenging condition, followed by nausea and vomiting of pregnancy. Other highly ranked challenging conditions included impetigo, vulvovaginal candidiasis, and dermatitis. These conditions were perceived to be of complex presentation and differential diagnosis and hence the demand for further knowledge reinforcement. Among disease-related concepts, students were interested in a refresher for alarming symptoms that would require referral, and a review on pharmacological therapy. Drug-related concepts, including contraindications, pharmacokinetics, and side effects of therapeutic options, were comparable and ranked similarly high.

Conclusion: Designing and implementing PPMA gamification should tailor to learner-identified needs. Findings from this project will play a pivotal role in shaping the design and content of our Minor Ailments Gamification Application, scheduled to launch in 2024, that may serve as a knowledge-and-skill refresher for pharmacy students and pharmacy professionals.