PHRM 473 Interprofessional Collaboration: Year 4 Report

For year ended April 30, 2021

Prepared for the Office of Experiential Education, UBC PharmSci

Prepared by Alex Tang, Jessica Jiang

PHRM 473 Interprofessional Collaboration: Year 4 Report

Introduction

Acknowledgement

We are pleased to present the PHRM 473 Interprofessional Collaboration: Year 4 Report for 2020W. This project is a continuation of a previous multi-year project which was led by Jason Min and Larry Leung. We are grateful for their contributions over the years, ongoing support, and leadership in interprofessional education. Serena Quan, Demi Asleson, and Rachel Goossen supported the project in Years 1 to 3.[1] [2] [3]

We acknowledge that experiential education is facilitated at the UBC Point Grey campus which is situated on the traditional, ancestral, and unceded territory of the xʷməθkʷəy̓əm (Musqueam) people. We are also grateful for our practice educators and practice sites which are located in Vancouver on the land of the Coast Salish peoples–Sḵwx̱wú7mesh (Squamish), Stó:lō and Səl̓ílwətaʔ/Selilwitulh (Tsleil-Waututh) and xʷməθkʷəy̓əm (Musqueam) Nations. We are incredibly grateful that students can work and learn on these lands.

This project is supported by Dr. Janice Yeung and funded by the Office of Experiential Education (OEE) and the UBC Work Learn Program.

Background

The purpose of this Year 4 report is to provide an account of the activities and research outcomes of this study. The aim of this study is to understand the outcomes of an interprofessional elective practicum for Professional Year 4 (PY4) Entry-to-Practice (E2P) PharmD students in 2020-2021.

PHRM 473 Non-Direct Patient Care Interprofessional Collaboration Practicum

Overview
PHRM 473 Non-Direct Patient Care Interprofessional Collaboration is coordinated by the OEE. The main goal of this practicum is to provide a novel practicum experience for PY4 E2P PharmD students to develop their pharmaceutical skills, knowledge, and attitudes, specifically in an interprofessional health care setting. The four-week practicum is a non-direct patient care, community-based placement for students to work with a non-pharmacy health professional, including a family physician, kinesiologist, naturopathic physician and a chiropractor. This is the second time that this elective practicum is being offered. Four students were matched to this practicum which ran from September 28 to October 23, 2020 (Block 3). All course activities and learning goals are rooted in the six interprofessional competency domains as defined by the Canadian Interprofessional Health Collaborative (CIHC):

- Interprofessional communication
- Patient/client/family/community-centred care
- Role clarification
- Team functioning
- Collaborative leadership

[1] Min, J., Goossen, R., & Leung, L. (2018, June 30). PHRM 473 : Interprofessional Collaboration Progress Report, Year One [R]. doi:http://dx.doi.org/10.14288/1.0398213
[2] Min, J., & Leung, L. (2018). PHRM 473 : Interprofessional Collaboration Progress Report, Year Two [R]. doi:http://dx.doi.org/10.14288/1.0398214
[3] Min, J., Leung, L., & Quan, S. (2020, April 30). PHRM 473 : Interprofessional Collaboration Progress Report, Year Three [R]. doi:http://dx.doi.org/10.14288/1.0398215

- Interprofessional conflict resolution

Specific learning objectives are as follows:

- Work effectively with members of the health team including individuals from other professions
- Reflect upon non-pharmacist health professional roles in patient care following shadowing sessions
- Communicate appropriately and clearly with non-pharmacy health professionals
- Apply collaborative leadership skills to complete a site-based project supported by the practice educator
- Identify and reflect on key learning experiences with other students placed in interprofessional practicum settings

Data Collection

Student participant data were informed by a pre- and post-survey, weekly online discussions, and a focus group. Practice educator data were informed by a post-survey. Surveys were created by Jason Min and Larry Leung in previous project years. For access to the surveys, please refer to these reports.

Changes for This Iteration

Curricular changes implemented for 2020W included the following:

- A more sustainable method for the weekly online discussions was implemented via Zoom. Students facilitated their own discussions whereas previously they were facilitated by a faculty member. The Student Self-Facilitation Guide was created to provide students with a framework for discussions around interprofessional collaboration themes as they relate to their practicums. This learner-centered approach is a form of peer-assisted learning (PAL) which has been well-researched in education.
- The 20-minute orientation for this practicum was delivered via asynchronous video. In the previous iteration, a 90-minute orientation was delivered in-person (one student joined via video conferencing) and the live recording was made available to students.
- While the practice sites remained the same as last year, we recruited two new practice educators due to changes in employment status. A kinesiologist replaced the registered nurse. The naturopathic physician is also a different individual compared to last year.

Lastly, on March 11, 2020, the World Health Organization declared COVID-19 a global pandemic. During this time, the OEE acted in accordance with the policies and procedures set by the Faculty and University and worked closely with stakeholders to best prioritize students' safety and experiential learning. To address this emerging challenge, the practicum shifted from an in-person to a fully remote or hybrid work environment.

Please see Appendix 1 for the practicum specific manual.

Students, Practice Educators, and Practice Sites

Students were matched to different practice sites and a description of the sites are summarized in the table below.

Student	Health Professional	Practice Site
Participant 1	Naturopathic Physician	This clinic consists of a team of naturopathic physicians providing care for a variety of musculoskeletal, acute and chronic diseases including thyroid issues and cancer, mental health issues including depression, anxiety and traumatic brain injury.
Participant 2	Chiropractor	This interprofessional site has physiotherapy, chiropractic, massage therapy, acupuncture/intramuscular stimulation, dietetics and an adjacent family physician practice. The practice educator provides chiropractor services in addition to OTC counselling, and dietary recommendations.
Participant 3	Family Physician	This medical clinic is a full service, fee-for-service family doctor office. This is a very busy primary care clinic with seven doctors. In addition to usual family medicine, they offer interprofessional services through nurses, clinical pharmacists, and visiting specialists. They have a large chronic disease management program.
Participant 4	Kinesiologist	This large interprofessional private-run healthcare clinic provides a variety of services. The clinic offers family doctors, physical therapy, registered nurses, nurse practitioners, dietitians, kinesiology and laboratory services for their patients.

Project Progress

Project Goals

This research project seeks to assess student learning outcomes and perceptions of the practicum experience, as well as practice educator experiences supervising pharmacy students. We aimed to provide support for students and practice educators during the practicum, gather data to inform experiential learning and share findings.

Outcomes in 2020/21

In October 2020, Jessica Jiang was hired as the Project Assistant to support this project. The other project team members are Alex Tang, Larry Leung and Jason Min. The following items were completed according to the timeline shown below:

Pre-Practicum	Practicum	Post-Practicum
August–September 2020 Virtual site visits conducted	**October 2020 (Weeks 1–3)** Students participated in a pre-survey and three weekly online discussions	**November–April 2021** Performed thematic analysis; Conducted an updated literature search
September 3, 2020 Ethics approved and renewed	**October 23, 2020 (Week 4)** Students participated in an online focus group and post-survey. Practice educators participated in a post-survey.	**April 30, 2021** Presentation delivered to the OEE
September 11, 2020 Students watched orientation video		

Virtual Site Visits
Due to COVID-19, virtual site visits were conducted via Zoom or phone prior to the start of practicum. The four sites included Copeman Healthcare Center, Teamworks Health Clinic, Fraser Street Medical Clinic and Spry Clinic. The purpose was to brainstorm ideas to support students' learning that complied with workplace and provincial restrictions, as well as answer any questions that the practice educator and their team had before the student arrived on-site.

Ethics Renewal
This study was approved by the UBC Behavioural Research Ethics Board and the study's certificate (H18-00728) was renewed until September 3, 2021.

Orientation Video
A 20-minute orientation video was co-created by Alex Tang and Jason Min, which covered practicum goals, activities and introduced the four participating practice educators and sites. Students were invited to watch the video asynchronously prior to the start of practicum. In the last iteration, a 90-minute orientation was delivered in-person (one student joined via video conferencing) and the live recording was made available to students.

Online Group Discussions

The most significant change this year occurred with the online group discussions. As detailed in the *Changes For This Iteration* section of this report, the discussions were self-facilitated by students instead of being facilitated by a faculty member. An hour of each Friday of the first three weeks was dedicated to an online forum discussion as specified in the practicum manual, involving the four enrolled students. These discussions were intended to provide students with peer support and to discuss pharmacy-related perspectives that may be lacking at the various sites. Topics of discussion can be categorized into the following:

- Shadowing opportunities
- Practice educator interactions
- Project work
- Interprofessional communication
- Pharmacy advocacy

Students were able to reflect on their week and enter the upcoming week with objectives and questions to think about and share in the following group discussion. The use of the self-facilitation guide by students supported these sessions, contributing to a more sustainable model of learning and reflection compared to faculty member-led discussions.

The platform Zoom was used to record both audio and video. Sessions were transcribed manually by Jessica Jiang.

Online Focus Group

On the last day of practicum, students participated in on online focus group that was moderated by Jessica Jiang. During the focus group, students reflected on their journeys, shared the outcomes of their projects, and described their views of interprofessional collaboration and how it evolved throughout the practicum. Students also provided feedback for future iterations.

Thematic Analysis

Thematic analysis using a combined inductive/deductive approach was applied to the weekly transcripts and surveys. Inductive reasoning explores the data without any predetermined concepts. Deductive reasoning was informed by the research questions and the interprofessional competency domains as defined by the Canadian Interprofessional Health Collaborative (Role clarification, Team functioning, Interprofessional communication, Patient/client/family/community-centered care, Interprofessional conflict resolution, Collaborative leadership). The initial analyses were independently performed by Alex Tang and Jessica Jiang. Firstly, both members disclosed their preconceived notions and assumptions in order to manage subjectivities. Secondly, general impressions were made in an effort to look at the data holistically. Thirdly, codes were generated from the transcripts and grouped into themes and connections between themes were explored. Lastly, themes were finalized collaboratively by the two research members. Please see Appendix 2 for the thematic analysis.

Updated Literature Search

An updated literature search was performed by Jessica Jiang. Articles were excluded if they have been identified in previous reports in Years 1 to 3. Please see Appendix 3 for the updated literature search.

Next Steps

The results and feedback form this study will inform the practicum program design for the next intake of students. The findings will also inform the criteria for recruiting practice sites that champion interprofessional collaboration. Lastly, exploring the application of online forum discussions in other practicums is worthwhile considering the level of acceptability from students. Broader dissemination opportunities will be explored for Summer 2021.

Appendices

Appendix 1: Practicum Specific Manual

THE UNIVERSITY OF BRITISH COLUMBIA

Office of Experiential Education
Faculty of Pharmaceutical Sciences

PHRM 473 NON-DIRECT PATIENT CARE PRACTICUM SPECIFIC MANUAL[4]
Interprofessional Collaboration
Various Sites
Practicum Duration: 4-weeks
Course Coordinator: Alex Tang
Created By: Jason Min, Alex Tang, Larry Leung

Description

This is a practicum for E2P PharmD students to have a practice educator who is a non-pharmacist health professional (e.g. physical therapist, nurse, physician, etc.). Students will work with their practice educator and other on-site health professionals to complete a project with the goal of building and supporting sustainable interprofessional collaboration (IPC) for the site. Additional core activities include shadowing patient-care visits and connecting with other pharmacy students enrolled in this practicum. Students will be placed in a community-based patient care setting within the metro Vancouver area.

Each site in this practicum has been selected due to the quality and variety of interprofessional collaborative experiences. No two sites are the same. Students will experience practice sites led by physicians, naturopathic doctors, nurses, physical therapists, and/or others. Given the different learning environment of this practicum, we expect students to be respectful and take advantage of the different perspectives, learning styles, and patient care activities that take place at your site. Independent, self-directed, and motivated students with a desire to learn more about interprofessional collaboration will learn and benefit from this practicum. Unless directly supervised by a licensed pharmacist, students **will not** be providing direct patient care (e.g. referral of patients to students to answer questions, advice on medication therapy, provide recommendations to patients) during this practicum.

Non-Direct Patient Care Practicum Goals & Learning Objectives

Please refer to the **PHRM 473 Practicum Handbook** available to students on Canvas and practice educators in the Office of Experiential Education (OEE) Practice Educator Resource Centre. Students are

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[4] Adapted with permission from LMPS Pharmacy Practice Residency Program

expected to achieve these course goals and learning objectives at the specified level of performance, in addition to the below practicum specific goal(s) and learning objective(s).

Practicum Specific Goal(s)

The student will work collaboratively with health professionals to develop key interprofessional skills, knowledge, and attitudes as outlined in the objectives below. In partnership with their practice educator and other on-site health professionals, the student will participate in a variety of activities, including completing a project that will support sustainable interprofessional collaboration for the site. Additional core activities include shadowing patient-care visits and connecting with other pharmacy students enrolled in this practicum, with the aim of building practical understanding of interprofessional patient care.

Student learning goals and objectives are rooted in the six interprofessional competency domains as defined by the Canadian Interprofessional Health Collaborative (CIHC):[5]

1. Interprofessional communication
2. Patient/client/family/community-centered care
3. Role clarification
4. Team functioning
5. Collaborative leadership
6. Interprofessional conflict resolution

Practicum Specific Learning Objectives

By the end of this practicum experience, in addition to the **Non-Direct Patient Care Practicum Goals & Learning Objectives**, the student will have demonstrated the ability to:

- Work effectively with members of the health team including individuals from other professions[6]
- Reflect upon non-pharmacist health professional roles in patient care following shadowing sessions
- Communicate appropriately and clearly with non-pharmacy health professionals
- Apply collaborative leadership skills to complete a site-based project supported by practice educator
- Identify and reflect on key learning experiences with other students placed in interprofessional practicum settings

Practicum Specific Activities

Students on this practicum are expected to participate in the following activities:

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[5] *A National Interprofessional Competency Framework*, Canadian Interprofessional Health Collaborative
[6] *Educational Outcomes for First Professional Degree Programs in Pharmacy in Canada*, Association of Faculties of Pharmacy of Canada

Orientation Video

Prior to the start of the practicum, students will watch a pre-recorded orientation video, available on PHRM 473 Canvas. The orientation will provide an overview of the practicum and introduce the practice sites.

Project

Students will complete a site-based project in collaboration with their practice educator and/or other health professionals onsite. Within the first week of the practicum, students will meet with their practice educator to define the focus and scope of the project, along with expected deliverables. Students may complete work for the project on or off site. Please see Appendix A – Project Worksheet.

Criteria for the project include:
1. Pre-determined start and end date within the four-week practicum
2. Designated clinician (practice educator or other) who is regularly available to serve as the project point person for the student
3. Supports collaborative health care and is rooted in one or more of the CIHC interprofessional competency[7] domains
4. Tasks align with the spirit of the practicum: to enhance and support student learning (see table below)

Every project and expected deliverables will vary, however, examples include:

	Project Examples – promoting student learning and IPC development		
	Theme	*Description*	*Deliverable(s)*
Patient-centred Care	Increase patient recall for follow-up	Student works with clinic lead and IT support to develop automated system for recalling patients	Partially or fully completed automated recall system, including supporting documents (e.g., workflow, patient consent forms, training materials, etc.)
	Promote patient understanding of medication and/or health products	Student researches commonly asked questions by patients specific to medications or natural health products and creates documentation to support patient education	Written patient education handout(s) or presentation
	Develop strategies to improve patient experience	Student surveys or interviews patients following appointments regarding satisfaction	Written report or oral presentation to clinic team outlining themes to improve patient experience

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[7] *A National Interprofessional Competency Framework*, Canadian Interprofessional Health Collaborative

Clinician Skills & Knowledge	Develop strategies to improve clinic practices	Student completes data mining of clinic quality improvement projects such as identifying patients lost to follow-up, disease-specific trends, or use of billing codes that could be delegated to allied health	Written report or oral presentation to clinic team outlining themes to improve clinic practices
		Student completes quality improvement (i.e. chart audit) project by identifying patients with heart failure and optimizing "triple therapy"	Written report and next steps on which patient to recall for follow-up
	Provide medication detailing service	Student conducts literature review of a specific medication or class of medication, recent article, or guideline	Educational handout or presentation to clinic team
Social & Business	Explore opportunities for interprofessional patient care	Student constructs hypothetical model of workflow changes required to implement additional allied health providers in the clinic	Partially or fully completed project plan, including supporting documents (e.g., workflow, professional role descriptions, budget, etc.)
		Student creates a system to manage and track referral activities to pharmacist	Educate health professionals and other staff with the services a pharmacist can provide and financial viability
	Strengthen clinic partnerships and collaboration	Student collaborates with other health providers within proximity of the clinic, including community pharmacies, to identify shared issues regarding patient care	Map of neighbouring health care providers, summary of common issues, and report of ideas for improvement
		Student transitions a paper-based referral system to an online system	Creation of online referral system

Tasks that are not appropriate for student learning include: referral of patients to the student to answer questions and/or provide pharmaceutical advice, completing cold-calling on behalf of the clinic team, or assigning responsibilities that cannot be completed within the four-week practicum.

Surveys and Focus Group Session

Students will contribute to the processes of quality assurance and improvement of PHRM 473 Interprofessional Collaboration by completing pre- and post-surveys regarding their practicum expectations and experiences. These surveys will be distributed to students online. Participation in the surveys are a requirement of the course but students will have the option to opt in or out of their data being used for research purposes. Student participation in any research aspects will not affect their

course grades. The pre-survey must be submitted prior to the start of the student practicum. The post-survey must be completed and submitted along with other practicum requirements as per **PHRM 473 Practicum Manual**. The table below summarizes the surveys and evaluations for this practicum.

Students will also participate in a focus group session following the completion of their IPC practicum. Focus groups will be held on the last Friday of student placement (week 4). Students will access Zoom through a link shared closer to the start of the practicum. This data will be essential to inform practicum design in future years.

These surveys are distinct from the mandatory evaluations submitted to OEE where students provide general feedback on their practicum experiences.

Online Forum

As students are supervised by non-pharmacy professionals, the online discussion forum serves as a space for discussion of pharmacy-related issues and support from peers. Students will actively participate in weekly online discussion forums held from 2–3 pm each Friday (weeks 1-3) via remote connection (i.e. Zoom). This activity will serve as an opportunity to connect with fellow PY4 students in other IPC practicums and discuss pharmacist-specific perspectives. Students will self-facilitate these weekly discussions. To prepare for these discussions, please refer to the student self-facilitation guide (Appendix B),

These online discussions will be recorded and made available to both participating students and OEE. This data will be used to inform practicum design in future years.

Activity Requirements:
- Students must have access to internet and a device with audio and video support
- Students will access Zoom through a link provided closer to the start of the practicum
- Students may participate in forums from any location that is quiet and conducive to learning
- Student must ensure each Friday of practicum (from 2–3 pm) is scheduled for this activity

Shadowing

Students will complete a **minimum** of 8 hours of shadowing during the 4-week placement (additional shadowing is encouraged). Shadowing may be with the practice educator or other health professionals onsite.

Students should intentionally reflect upon their shadowing experiences and are encouraged to take notes during and after. Practice educators and students are encouraged to debrief shadowing sessions as time permits; however, students should be aware this is not always possible. Students will be expected to discuss shadowing experiences in their weekly online forum activity. Please see Appendix C – Interprofessional Shadowing Guide.

In addition to the above practicum-specific activities, students on this practicum are expected to participate in the following course-specific activities that are applicable to all PHRM 473 practicums, the details of which can be found in the **PHRM 473 Practicum Handbook.**

- Student Introduction Resume
- Learning Contract
- Self-Assessment

Expectations for all course and practicum specific activities should be discussed and confirmed early in the practicum with the practice educator and/or designated pharmacist. Should any further clarification be required, please contact the corresponding PHRM 473 course coordinator at the Office of Experiential Education.

Summary of Practicum Specific Activities

Please see the table below for a comprehensive list of **practicum activities** for the practicum. The following **suggested timeframe** is provided to guide the practice educator in assigning and the student in keeping track of all the required student activities.

Practicum Activities & Student Role	Practice Educator Role	Suggested Timeframe
Pre-survey: ☐ Complete the IPC pre-survey	*No action required. Practice Educator does not have to complete a pre-survey.*	Prior to start of practicum
Student Introduction Resume: ☐ Upload PDF of resume on E*Value and review resume with practice educator within the first 72 hours of the practicum	☐ By the last day, practice educator to verify satisfactory completion of this activity on the Practicum Activities **E*Value Coursework**.	One week prior to start of practicum
Orientation: ☐ Watch the Orientation Video. Link will be made available on Canvas. ☐ Complete the **UBC Pharmacy Student Health and Safety Orientation (HSO)**. The HSO is self-guided and the student is to initiate the discussion. Review within the first 24 hours of the practicum. Upload completed, scanned HSO as a PDF to Canvas within the first 72 hours of the practicum. ☐ Complete the **72-Hour Checklist**. Orientation to organization's history and background, introduction to team members and stakeholders (where applicable)	☐ Orient student to practice site within the first 72 hours of the practicum	Orientation video – prior to start of practicum. Other orientation activities on Days 1-3.
Learning Contract: ☐ Complete **Learning Contract**	☐ By the last day of the practicum, practice educator to verify satisfactory completion of this activity on	Days 1-3

	the Practicum Activities **E*Value Coursework**.	
Giving Feedback to the Practice Educator: ☐ Give feedback at regular intervals to practice educator	☐ By the last day of the practicum, practice educator to verify satisfactory completion of this activity on the Practicum Activities **E*Value Coursework**.	Throughout practicum
Project*: ☐ Complete 1 project. See Appendix A for worksheet. ** The student and practice educator should agree on the objectives of the project(s) to be completed. It is acceptable for the student to prepare draft objectives, which are reviewed and confirmed by the practice educator.*	☐ Assign <u>1 project</u> for the student to complete <u>during the practicum</u> ☐ Prior to/on the last day of the practicum, practice educator to verify satisfactory completion of this activity on the Practicum Activities **E*Value Coursework**.	Week 1-4 Project
Online Forum: ☐ Actively participate in weekly online discussion forums held from 2–3 pm each Friday (weeks 1-3) via remote connection. A Zoom link will be shared closer to the start of the practicum. See Appendix B for student self-facilitation guide.	**No action required. Practice Educator does not have to participate in online forum.*	On Fridays from 2-3 pm at Week 1, 2, and 3
Midpoint Assessment: ☐ Review with practice educator the **NDPC Practice Educator Assessment of Student - Mid**	☐ Complete the **NDPC Practice Educator Assessment of Student – Mid** and review with student**.**	End of Week 2
Shadowing: ☐ Complete a **minimum** of 8 hours of shadowing (additional shadowing is encouraged). Shadowing may be with the practice educator or other health professionals onsite. See Appendix C for interprofessional shadowing guide.	☐ By the last day of the practicum, practice educator to verify satisfactory completion of this activity on the Practicum Activities **E*Value Coursework.**	Week 1-2
Self-Assessment: ☐ Complete 1 self-assessment E*Value Coursework	☐ By the last day of the practicum, practice educator to verify satisfactory completion of this activity on the Practicum Activities **E*Value Coursework.**	End of Week 2
OEE Practicum Evaluations: ☐ Complete the **Evaluation of the Practice Educator and Practice Site** on E*Value ☐ Complete the **Evaluation of the OEE Course** on E*Value	☐ Verify discussion and completion of the **Evaluation of the Practice Educator and Practice Site** on the Practicum Activities **E*Value Coursework.**	Week 4

Final Assessment: ☐ Review with practice educator the **NDPC Practice Educator Assessment of Student - Final**	☐ Complete the **NDPC Practice Educator Assessment of Student – Final** and review with student.	Last day of practicum
Post-Survey: ☐ Complete the IPC post-survey	☐ Complete the IPC post-survey	After the practicum has ended
Focus Group Session: ☐ Participate in a focus group session following the completion of their IPC practicum. A Zoom link will be shared closer to the start of the practicum	*No action required*	Last Friday of practicum (Week 4)

Practicum Specific Communication Expectations

For all non-direct patient care practicums, students are expected to:

- Consult with their practice educator and/or designated pharmacist prior to performing or documenting any patient care activities and/or discussing any recommendations with patients and/or other health care providers.
- Provide ongoing regular feedback to, and receive ongoing regular feedback from, the practice educator to assist in enriching the student's own learning experience throughout the course of the practicum.

In addition, your Practice Educator may provide practicum-specific communication expectations as required.

For more details about policies related to communication, please see the **Entry-to-Practice PharmD Program Practicum Policies, Procedures, & Guidelines** available to students on Canvas and to practice educators in the OEE Practice Educator Resource Centre.

Assessment

For all non-direct patient care practicums, students will be assessed using the **Non-Direct Patient Care Practice Educator Assessment of Student** form. Please see the **PHRM 473 Practicum Handbook** and **Entry-to-Practice PharmD Program Practicum Policies, Procedures, & Guidelines** for more information.

Special Requirements

Your Practice Educator will identify any special requests for your practicum. Please note that for 2020W, adherence to practice site specific policies and procedures regarding COVID-19 may be required.

Required Reading & Resources

Your Practice Educator will identify any additional pre-readings or other preparatory material required prior to the beginning of this practicum.

Consider the diversity of professional roles, skills, knowledge, and attitudes you will encounter at your practicum placement site by **completing the Role Clarification module** (through 1.12) from IPC on the Run (https://modules.ipcontherun.ca/).

Learn about the professional responsibilities, training, and certifications required for health professionals at your site by **reading relevant Interprofessional Team descriptions** from the Office of Interprofessional Health Education and Research at University of Western Ontario (http://www.ipe.uwo.ca/)

Complete 2 pre-readings regarding population management care and best practice team based care literature (https://www.bmj.com/content/320/7234/569.short; https://bccfp.bc.ca/wp-content/uploads/2015/06/Team-based-Care-in-PMH.pdf). In addition, please read the scope of practice for the practice educator you have been assigned.

Appendix A – Project Worksheet

Project Title:

Date Assigned: **Date Completed**:

Project Supervisor/Manager:

Project Resources (Team member or stakeholder names):

Project Description:

Project Objectives:
1.

2.

3.

Interim Deadlines:

Describe Deliverable – item or task to be completed	Deadline Date	Comment

Describe Learning derived from Project, including any unique experiences and activities:

Feedback Received from Practice Educator:

Date_____

Appendix B – Student Self-Facilitation Guide

The purpose of the online discussion forum is to serve as a space for discussion of pharmacy-related issues and support from peers. To prepare for these weekly discussions, a student self-facilitation guide has been created. Discussions will be more satisfying and meaningful if you come prepared. The below sample questions and discussion points will help guide your discussions; however, we encourage ideas to be freely exchanged to keep the discussion organic. For the first weekly discussion, ground rules should be established to ensure that all students feel comfortable to share their viewpoints and balancing opinions.

Theme	Sample Questions/Discussion Points
Week 1	
Introductions	- Students to introduce themselves and their practice site (e.g. practice educator's health professional role, overview of practice site and services provided) - What are your expectations for this practicum? And for these weekly online discussions? - Set ground rules for these weekly online discussions
Practice Educator	- Describe the typical day of your practice educator - How much time do you spend with your practice educator or other team members?
Practicum Activities	- Tell us about your interprofessional collaboration (IPC) project - What shadowing experiences this week were the most and least beneficial? How have they impacted your understanding as a future pharmacy professional?
Role Clarification	- Describe a situation in which you were able to improve your understanding of another health professional's roles and responsibilities (e.g. physician, nurse, physical therapist) - What is your role at the practice site and how would you like to see your role develop/evolve throughout the practicum?
Reflections and Next Steps	- Describe one challenging situation that you experienced this week - What new learning objectives have now emerged for you?
Week 2	
General Update	How has this week gone for you and what has changed from last week? Update and roundtable from the group
Practicum Activities	- Provide an update on your IPC project - After shadowing another healthcare provider, describe how they interacted with the patient that is different than how you might have expected. How was this different than your expectations or prior assumptions?
Collaboration	Tell us an example that highlights your collaboration with the practice educator and/or other team members
Team Functioning	- How would you describe the teamwork at your practicum site? Is the team efficient? Are they coordinated in their tasks? - How is trust built and maintained among the team? - Tell us an example that highlights how shared goals are arrived at with your team? - How are shared goals communicated to new members and sustained by the team?

Communication	• Does the team seem to communicate well? • How are plans of care shared among the team (with patient/family)? • Tell us an example when communication is effective among the team?
Reflections and Next Steps	• What will you be working on specifically next week to address some of the issues discussed?
Week 3	
General Update	• How has this week gone for you and what has changed from last week? Update and roundtable from the group • Describe your most important learning point from your experiences this week
Practicum Activities	• Provide an update on your IPC project • Describe an interesting activity that you participated in/observed
Role Clarification	• What did you learn about the roles on this team that you did not know previously?
Team Functioning	• Consider the team that you are working with. What were some of the things you observed that helped to ensure the team worked well together? • Were there any conflicts during your practicum that could have been resolved by a collaborative approach during your practicum that was not acted on? How was the situation managed?
Reflections and Next Steps	• What is one thing you will do differently this week? • What are other students doing to further enhance their learning that you could apply to your site? • What is the legacy you want to leave at that site once you're gone?

Appendix C – Interprofessional Shadowing Guide

Purpose

Interprofessional shadowing will allow students to improve their knowledge and attitudes of the roles of other healthcare team members in the outpatient setting. Through shadow experiences and discussions, students will be able to observe and reflect upon the importance and opportunities of interprofessional collaboration in the provision of patient-centered care.

Before a shadowing interaction:

1) Discuss with your practice educator the types of patients that could be seen, plan in advance and negotiate the types and lengths of appointments that will be shadowed.

2) Discuss with your practice educator one or two unique aspects of the shadowing appointment prior to attending e.g. will this appointment have a lengthy history taking component, will this appointment be focusing on one specific disease, or will the appointment follow a structure or template?

3) Understand that patients may decline having a student shadow the appointment.

During or after a shadowing interaction:

1) Discuss with your practice educator the outcome of the appointment – was it as expected, is that a typical visit, what were notable events or behaviours?

2) Discuss professional roles broadly – would any other profession be able to do what happened during the appointment? Are there any overlapping professions that could do part of the appointment? For more questions rooted in the interprofessional competency domains as defined by the CIHC, please see the table below.

Competency Domain[8]	Questions
Patient-family Centered Care	• How are shared goals successfully made with your patient/family? • What is the concept of partnership with patients/families mean to you? Provide an example. • What would successful patient-family centered care look like for you within your program?
Communication	• How are plans of care shared among the team (with patient/family)? • Tell us an example when communication is effective among the team? • What would successful interprofessional communication look like for you within your program?

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[8] Student-Led Appreciative Inquiry into Healthcare Practice, 2017, authored by Carrie Krekoski, University of British Columbia, Karen Derry, Sunnyhill Health Center for Children.

Collaborative Leadership	• Tell us an example that highlights how shared goals are arrived at with your team? • How are shared goals communicated to new members and sustained by the team? • What would successful collaborative leadership look like for you within your program?
Role Clarification	• How are roles defined within your program? • Tell us an example of when roles needed to be fluid/re-defined for positive outcomes? • What would successful role clarification look like for you within your program?
Team Functioning	• When things don't go as well as planned, how does your team learn from this? • How is trust built and maintained among the team? • What does successful team functioning look like for you within your program?

3) Reflect on pharmacist practice and your future practice ideas. Recommended reflection questions to consider include:

- What skills, knowledge, and attitudes did you observe during shadowing that you would like to improve upon?
- What role would you have played in patient interaction(s) if you were a licensed pharmacist?
- How did your thought processes during the patient interaction(s) differ from what you observed?
- Were there any conflicts you observed that could have been (or were) resolved by a collaborative approach during your practicum?
- What else do you want to learn about the team and its members? What new learning objectives have now emerged for you?
- How was the patient's voice/goals expressed?[9]

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[9] *IPE Component in a Clinical Placement: Interviewing/Shadowing a Team Member,* University of Toronto, Centre for Interprofessional Education

Appendix D – Site Information

Dr. Khaled Dossa, Chiropractor at Teamworks Health Clinic Located on 2477 Heather Street http://teamworkshealth.ca/		
Site Overview	Parking	Workspace
Teamworks Health Clinic is an interprofessional site, it has physiotherapy, chiropractic, massage therapy, acupuncture/IMS, dietetics and an adjacent family physician practice. Dr. Dossa provides chiropractor services in addition to OTC counselling, and dietary recommendations	-Paid parking on Broadway and side streets	-Back room has small desks with computers -Consultation rooms may be vacant Due to COVID-19, these spaces will most likely be unavailable

Dr. Patrick Callas, Naturopathic Physician at Spry Clinic Health Located on second floor at 208-2555 Commercial Drive https://www.spryclinic.com/		
Site Overview	Parking	Workspace
Spry Clinic is a team of naturopathic doctors providing care for a variety of musculoskeletal, acute and chronic diseases including thyroid issues and cancer, mental health issues including depression, anxiety and traumatic brain injury. There are two Naturopathic Physicians: Dr. Patrick Callus and Dr. Caroline Leon.	-Underground paid parking -Free 2-hour parking 2-3 blocks away	-Staff room with comfortable chairs -Limited Desk Space -Consultation rooms may be vacant

Dr. Daniel Ngui, Physician at Fraser Street Medical Located at 5963 Fraser Street https://fraserstreetmedical.com/		
Site Overview	Parking	Workspace
Fraser Street Medical is a full service, fee-for-service family doctor office. This is a very busy primary care clinic with 7 doctors. In addition to usual family medicine, they offer interprofessional services through nurses, clinical pharmacists, and visiting specialists. They have a large chronic disease management program.	-Free Parking on side streets	-Round table and desk with computer in the staff room - Consultation rooms may be vacant Due to COVID-19, these spaces will most likely be unavailable

Nadine Sinnen, Director, Clinical Service Integration, at Copeman Healthcare Center Located on second and third floors at 755 Nelson Street https://www.copemanhealthcare.com/		
Site Overview	Parking	Workspace
Copeman Healthcare Center is a large interprofessional private-run healthcare clinic that provides a variety of care. The clinic offers family doctor, physical therapy, registered nurse, nurse practitioner, dietitian, kinesiology and laboratory services for their patients.	-Underground Paid Parking	- Staff room with a big table and chairs -Also may be board rooms open for use and some consultation rooms may be vacant

Appendix 2: Thematic Analysis

A. Understand the impact of the elective practicum on student and practice educator interest and understanding of inter-professional collaboration.

Overall student participants thought that the practicum was a valuable experience which was influenced by factors such as the practice educator engagement, practice site, and COVID-19 pandemic ("pandemic"). Two students who worked mostly remotely believed that in the absence of the COVID-19 pandemic, their experiences would have been better. At the onset of practicum, all students were keen in observing how teams worked together but also how their practice educators worked independently. Students were interested to explore the integration of pharmacists into these teams. See student's comment below.

> *P4: This was probably one of the electives that I'm most looking forward to because I think it's so awesome that it's like a chance to appreciate other healthcare disciplines and have an opportunity to like kinda be under the supervision of like a non-pharmacist like I thought that was so unique and something I really wanted to be part of.*

Over time, students increased their understanding of the importance of collaboration. The competency that was most demonstrated by students was **role clarification**. Other competencies demonstrated were **team functioning** and **interprofessional communication**. Based on the lack of dialogue around **interprofessional conflict resolution, patient/client/family/community-centered care,** and **collaborative leadership** domains, students may have had fewer opportunities to develop these competencies (although on the post-surveys, majority of students indicated a subjective improvement). Students felt that there was minimal conflict which mitigated opportunities to observe conflict resolution. The other two domains may have been limited by the nature of remote work and non-direct patient care experiences as students were not providing pharmaceutical care.

In the **role clarification** domain, this experience helped students understand and appreciate the practice educator's role as a care provider and their own professional identify, especially as a medication expert (both opportunities and limitations). For example, P2 identified that they would be doing a knowledge translation project in week 1 which aligns with providing drug information.

> *P2: My project is going to be an infographic of all the different common pain medications that patients usually ask about so I was thinking of that project because when the chiropractor assesses patients, it's usually patients that are in a lot of pain or some level of pain…a lot of people don't know how to actually take you know like anti-inflammatories you have to take with food, but in like the side effects associated with it…if you're taking blood thinners…that's not good to take those medications so I think it might be useful for patients to know that.*

In describing the role of a pharmacist as a medication expert, P1 recognized the limitation of their role.

> *P1: I think I have a little more of an appreciation of like how they approach different things and just different ways that we can all… kind of just be healthier I feel like it's something that we as pharmacists like are taught… but because we're so focused on the drugs maybe we sometimes lose sight of the more holistic and like everything else that's going on as well*

Providing drug information to health care providers has been described by Kellar (2020) who suggested that the Expert Advisor role was the prominent pharmacist identify from 1960-2000. While students leaned into the medication expert role, they felt uneasy when this role came under threat. For example, when other health care providers relied purely on drug interaction checkers, these actions clashed with the students' professional identify as they minimized the importance of clinical judgement. This dialogue unfolded in week 2:

> *P4: So I think that there is a lot of potential for a pharmacist to be here cause I think I saw like the kinesiologist was looking on Medscape to like look at interactions and kind of like that's the role of a pharmacist right like we should be evaluating the medications and like really looking at interactions and like offering something as well so I just I feel like it's interesting for sure.*

P1: Oh I was just going to say on the Medscape thing that the naturopathic doctors also use Medscape as their resource and I think that there like their training does cover actually, some drug- like natural health product interactions as well because when they are prescribing those they need to check… there is overlap between like what different healthcare professionals can do but there's definitely ways that working together, we're like filling in other gaps that we might not have seen.

P4: I guess as a future pharmacist, part of me feels slightly nervous knowing that like there are other maybe less reputable or like other professionals maybe doing the job like we could be doing.

P1: We definitely learned a lot more about it and there's times when like your clinical judgment comes in and it's not just what the interaction checker flags because we know that sometimes it'll flag several things but you can still give those depending on the situation, so it's an added bit that pharmacists can do as well and we probably know it better cause we're trained like so much in that area, it's just hard when you bring that up with other healthcare professionals I guess because they feel that you know they have been- like they don't know that there's so much more to know.

Team functioning and **interprofessional communication** competencies were observed by students. These domains supported patient care and improved workplace operations. P4 described participating in a team meeting to improve workplace culture and COVID-19 site protocols.

P4: So I actually did get to attend a team meeting for the kin team and so it was like halfway done through Zoom and then some in person, and so it was like kind of talking a lot about like you know, how procedures are done especially with COVID, like how often they're sanitizing everything and what makes more sense, how morale is.

P3 engaged in the team functioning domain in week 2 as described below.

P3: They put me on the agenda to like talk about my project so I was I guess involved in that as part of the team and talking about my project and like where I see there's like already some gaps in like care and what I'm going to do like what I can say to them or say to the doctors like things that they can do to like rectify like what's going on or make it easier to spot when like patients are getting missed or certain things are getting missed

From the practice educators' perspectives, due to the paucity of survey data (i.e. three responses received and one incomplete response), there is insufficient data to evaluate the overall impact this practicum had on practice educators. However, it seemed like the students were well received and over time, practice educators were curious to learning more about collaboration with pharmacists. We can also infer this because all practice educators agreed to host students again next year.

B. Assess the effectiveness of the required learning activities (shadowing, online discussion, project) within the practicum rotation.

Shadowing. All student felt that shadowing was valuable, despite some opportunities limited by the pandemic, especially when students worked remotely. Shadowing helped students reflect on their own scope of practice, understand the shadowed discipline's role in patient care (e.g. debunk misconceptions), and develop genuine respect for other care providers as they model best practices. In addition, three students had the opportunity to play the role of patients and receive assessments/treatments in order to emulate the patient's experience at the clinic. All students felt that an aspect of the practicum that can be improved for next time is to increase the number of shadowing opportunities.

Online discussion. All students agreed that the self-facilitated online discussions were valuable. This learning modality is a form of peer-assisted learning (PAL) in which two or more learners support each other. The benefits of PAL have been extensively researched (Glynn et al., 2006). In week 1, students felt inclined to use other channels of communication to chat further beyond the context of this required activity which suggests the desire to feel

connected as all four students had different practice sites. There was a clear benefit with online discussions, even at the start of the first weekly discussion, from allowing students to talk through their individual experiences, learn from each other and provide peer support. This positive experience was articulated by P3 during week 3.

> *P3: I just like feel like I've learned so much more just getting to hear like what you guys have been up to and like what you're learning in your practicums*

On the other hand, by the final week, students said discussions felt slightly repetitive. This may be due to the COVID-19 pandemic which limited learning opportunities, thus the discussions. Students felt that more variety of prompts could be incorporated into the student self-facilitation guide.

Interprofessional Collaboration Project. Projects were all rooted in increasing pharmacist involvement in interprofessional settings and therefore, students were advocates for the role of pharmacists. Two students worked on knowledge translation projects. One student created a medication review referral program between the naturopathic doctor office and a pharmacy. One performed a chart audit in order to optimize drug therapy for patients with diabetes. Overall, projects created opportunities for students to add value back to the practice site and provided a platform for students to develop their interprofessional competency domains. P3 described the impact of their project.

> *P3: I'm doing something that like the clinic needs, so it's kind of nice like they're more- gonna be more likely to like keep having like pharmacy students on if I'm like- if we're doing projects that like really benefit them*

C. Understand the impact on student learning when supervised by a non-pharmacy health professional versus a pharmacy health professional.

At the onset of practicum, more effort was required by students to establish baseline understanding of their roles as both a learner and pharmacist-in-training. Some students suggested incorporating practicum activities to help build the student-practice educator relationship (e.g. ice breaker activities, student introduction activity).

> *P1: Feel like every time we walk into our like community or hospital practicum, we have a little bit of an idea like what pharmacists are doing there and like what role we play. But here, sometimes the practice educator… doesn't even know what you're capable of doing and like what information you need… like we're educating them at the same time as they're educating us and we're all trying to like figure out where we fit in this*

As the only pharmacist lens, students found themselves leaning into their role as a medication expert. It also helped to bring out their advocacy spirit for the profession as described by P4 and P2 below.

> *P4: There are so many different healthcare professionals that us as pharmacy students don't really get to collaborate with such as… I think I really want to kind of go in and educate and kinda ask them like how medications influence their practice and like who they think would be the best person to talk to about that*
> *P2: I think that it is really like it's a unique experience than having like a pharmacist as a practice educator and I think like more professions knowing like what we do and what we can do can like create more awareness and drive like the profession forward so I think it's good.*

D. Determine the prerequisite skills, attitudes, and knowledge necessary for students to succeed in an inter-professional practicum setting.

The three student qualities identified are self-directedness, open-mindedness, and advocacy spirit. As other healthcare providers likely do not have a firm understanding of pharmacists' roles, this emphasizes the need for students to stay motivated and take initiative. P3 described this below.

> *P3: Like this is a really good experience because I'm sure the next one is going to be really similar where it'll be like more self-directed and like managing your time and trying to get like what can we do to get the most out of our practicum*

In addition to demonstrating self-directedness, three students (P1, P2 and P4) recognized the importance of being generously openminded to new opportunities. See example of student's comment below.

> *P1: It's becoming comfortable with that like period of flux and being open to like whatever new experiences come up or opportunities present themselves to finding a way to integrate yourself into the team to be able to communicate what you do know and how you can provide value.*

These positive traits help to establish mutual understanding and promote acceptance of pharmacists by other healthcare providers. Lastly, when working with a non-pharmacist health care provider, all students recognized that role clarification of a pharmacist goes hand-in-hand with advocating for our profession through educating others of pharmacists' scope of practice. Students have idealized a legacy of continuing to advocate for pharmacists and inform other healthcare providers on what pharmacists do and what we stand for. P4 shared their thoughts around advocacy.

> *P4: Something that I truly find validated in my experiences here is you know, it truly comes down to how you saw yourself and how you like advocate for yourself and the connections that you make with other people.*

E. Determine the practice educator and practicum site attributes necessary to create an effective learning experience for pharmacy students.

Like all practicums, practice educator engagement can help support learners. In this practicum for example, this could be demonstrating curiosity in learning about pharmacists (reciprocity of learning). It is beneficial for students to see previous students' projects and completed work, which can be facilitated by the practice educator. As well, there is tangible benefit in continuously running this practicum to compound the impact left at each practice site.

> *P1: Think one thing that my practice educator could have done is ask a lot more questions or like don't be like hesitant to like ask me to do things.*

With respect to practice site attributes, there are three factors that promote interprofessional collaboration: proximity, social connectedness, and information and communication technology infrastructure. Student example comments below.

> *P1: Get to know each other a little bit of a more personal level as well…our shared interests and what our goals are in terms of patient care and how we might be able to work together to find areas where collaboration could be beneficial.*

> *P2: If the chiropractor or physio ever have any questions for the doctor, they can just walk over and ask like any questions about their patients*

> *P4: So the biggest perk of obviously this clinic and how it's run is the fact that they all share an EMR which is exactly like we want in every- like almost of practice so even just now like I said I was with a kinesiologist and she was able to see like the whole EMR for the whole patient so she was able even to see like each interaction with the physician*

References

Glynn, L. G., MacFarlane, A., Kelly, M., Cantillon, P., & Murphy, A. W. (2006). Helping each other to learn–a process evaluation of peer assisted learning. *BMC medical education*, *6*(1), 1-9.

Kellar, J., Paradis, E., van der Vleuten, C. P., oude Egbrink, M. G., & Austin, Z. (2020). A historical discourse analysis of pharmacist identity in pharmacy education. *American Journal of Pharmaceutical Education*, *84*(9

Appendix 3: Updated Literature Search

Evidence Type	Evidence Description	Professions	Involved Parties	Key Data	Notes
Applied: IPE in Curriculum (Systematic Review)	(Journal Article, 2017) Interprofessional collaboration to improve professional practice and healthcare outcomes	Chiropodists or podiatrists, complementary therapists, dentists, dietitians, doctors or physicians, hygienists, midwives, nurses, occupational therapists, pharmacists, physiotherapists, psychologists, psychotherapists, radiographers, social workers and speech therapists	Kingston University and St George's, University of London; University of New South Wales; University of Toronto; University of Western Ontario	Study aimed to assess the impact of practice-based interventions designed to improve IPC within healthcare and social care professionals compared to usual care or alternate interventions. Looked at at least one of the following primary outcomes: patient health outcomes, clinical process or efficiency outcomes or secondary outcomes (collaborative behaviour). Bottom line: certainty of evidence was low or very low, there was not sufficient evidence to draw clear conclusions on the effects of IPC interventions.	Our study also seeks to understand and evaluate the outcomes of a novel elective practicum. We can benefit from seeing how this study was able to evaluate data and present results qualitatively.
Applied: IPE in Curriculum (Systematic Review)	(Journal Article, 2017) Experiences and shared meaning of teamwork and interprofessional collaboration among health care professionals in primary health care settings: a systematic review	Professionals in dentistry, medicine, midwifery, nursing, nutrition, occupational therapy, pharmacy, physical education, physiotherapy, psychology, social work and speech therapy. Also community health workers, nursing assistants, licensed practical nurses and other allied health workers.	The Midwestern State University (UNICENTRO); Universidade Federal de São Paulo; University of São Paulo (EEUSP)	Study aimed to understand the experiences of health professionals regarding teamwork and interprofessional collaboration in primary care settings. 223 findings from 21 research studies → 15 categories and 3 synthesized findings: the health professional's experience of teamwork and IPC is based on daily practices triggered by users' needs (requires communication and shared leadership to manage); shows the importance of care philosophy guided by the connection with patient and family; is determined by the biomedical paradigm and social division of labour. Bottom line: health professionals experience teamwork and IPC as a <u>process</u> in primary healthcare settings. Challenges are enormous and are ideological, organizational, structural and relational. Actions to take include investing in teamwork and IPC, overcoming barriers that hinder teamwork, sharing the same space as other professionals and maintaining face-to-face contact in order to work every day as a team.	We are able to gain insight into the barriers/challenges to achieving IPC in a primary care setting and see how they are relevant (or not relevant) to PHRM 473 specifically.
Applied: IPE in Curriculum	(Journal Article, 2020) Characteristics of High-Performing Interprofessional Health Care Teams Involving Student Pharmacists	Clinical pharmacists	University of North Carolina; Association of American Medical Colleges; Mountain Area Health	Study aimed to identify key themes of interprofessional models of care that offer experiential education opportunities for pharmacy learners. This was done at the organization/healthcare system, team and individual level. Bottom line: although more and more evidence highlights the importance of designing practice models to achieve patient-centred and effective interdisciplinary care, capacity to support	It is clear that interprofessional care is becoming increasingly pervasive when caring for patients. However, there are indeed barriers to implementation and hopefully our study can shed some light on what students perceived to be challenges, as

				learners and effectively educate them in the principles and practices of team-based care is limited. Further research is needed to better understand the barriers to designing and implementing IPE in experiential settings.	well as how they can be overcome.
Applied: IPE in Curriculum	(Journal Article, 2015) Interprofessional experiences of recent healthcare graduates: A social psychology perspective on the barriers to effective communication, teamwork, and patient-centred care	Pharmacy, medicine and nursing graduates	University of Newcastle	Study aimed to explore the attitudes and experiences of recent healthcare graduates regarding interprofessional teamwork and communication within a clinical setting. Professional-focussed goals were revealed alongside reports of negative stereotyping, hierarchical communication, and competition for time with the patient. Graduates acknowledged the importance of communication, teamwork and patient-centered care, and that a better understanding of the roles of other health professionals would assist them to work together for patients' wellbeing. Bottom line: previously described insights may help improve IPC by focusing attention on common team goals, increasing feelings of worth and being valued among different professionals and decreasing the need for competition. The needs identified are to increase knowledge and perceived value of the different interprofessional roles and redirect professional goals towards team identities and shared goals. Further investigation will be required to determine the most effective way to bring about such change, particularly in a postgraduate context, and to ensure that change is systemic within the healthcare system.	This study identified items that would facilitate and impede interprofessional collaboration. Our study can fill in effective ways to bring about positive change and improve the setting of interprofessional care, also seeing if what we have identified as facilitators/barriers are similar.
Applied: IPE in Curriculum	(Journal Article, 2018) Experiences of Pharmacy Trainees from an Interprofessional Immersion Training	Pharmacy students/trainees	Southern New Mexico Family Medicine Residency Program, University of New Mexico, New Mexico State University	Study aimed to examine the effect of a (30 hour) interprofessional training including pharmacy students to determine if the training helped these students build valuable knowledge and skills while working alongside other health care professionals. Bottom line: results empirically support that even a relatively brief interprofessional training can produce changes in pharmacy students' perspectives in working within healthcare teams, both in terms of their self-efficacy regarding their team-based skills and in their attitudes about the importance of team-based care… There is great importance in building interprofessional education skills to help reduce medical errors, increase communication, provide better patient care and reduce provider burn-out. One way to enhance these skills is through specific training surrounding the interprofessional education competencies.	Specific training (e.g. PHRM 473) fills in the gap indicated in this study, which our study details.
Applied: IPE in Curriculum	(Journal Article, 2019) An An Analysis of Canadian Doctor of Pharmacy Student Experiences in Non-Traditional Student-Practice educator Models	Pharmacy students	Hôpital Montfort; University Health Network; University of Toronto; University of Manitoba	Study aimed to describe students' experiences and perceptions of non-traditional student-practice educator learning models and evaluate the effectiveness of these models on students' learning experience. Findings were categorized into three most well-defined models: peer-assisted learning (PAL), near-peer teaching (NPT) and co-practice educatorships (CoP), with all models allowing for the development of skills, including communication and collaboration.	PAL, NPT, CoP do not match exactly what PHRM 473 offers, but inferences can be made e.g. PAL <-> online discussion forums, NPT/CoP <-> learning from a variety of healthcare providers on the job. We can see if our findings are similar with their results and

				Bottom line: because pharmacy students/graduates valued their experiences in these non-traditional student-practice educator models, there is support for integration of these precepting models to increase placement capacity.	identify differences as well as the reasons behind those differences.
Applied: IPE in Curriculum (Environmental Scan)	(Journal Article, 2017) Interprofessional education for internationally educated health professionals: an environmental scan	Family physicians, licensed practical nurses (LPNs), registered nurses (RNs), registered psychiatric nurses (RPNs), occupational therapists, pharmacists, and physical therapists	Alberta Health Services; University of Manitoba; University of Saskatchewan; Provincial Health Services Authority; University of British Columbia	Study aims to identify Western Canadian IPE resources that currently exist for internationally educated health professionals (IEHPs). Most learning resources found in bridging programs for IEHPs included an orientation to the Canadian healthcare system, components of cultural competence, and at least one aspect of interprofessional competence (e.g. communication skills). None of the 41 learning resources provided comprehensive training for IEHPs to cover the six interprofessional competency domains defined in the Canadian Interprofessional Health Collaborative (CIHC) National Interprofessional Competency Framework. Bottom line: IEHP learning resources in Western countries *do not* cover all of the interprofessional competencies, so there is value in developing a comprehensive IPE curriculum based on the six domains identified in the CIHC National Interprofessional Competency Framework.	Our study evaluates the same competencies and so by delving into this study more deeply, we can compare and contrast how PHRM 473 has satisfied these competencies and how we can better facilitate the provision of interprofessional collaboration through this practicum and in practice as a whole.
Applied: IPE in Curriculum (Systematic Review)	(Journal Article, 2018) Short duration clinically-based interprofessional shadowing and patient review activities may have a role in preparing health professional students to practice collaboratively: a systematic literature review	Students from medicine, pharmacy, nursing, dietetics, physiotherapy, occupational therapy, social work, podiatry, speech pathology, and medical imaging	Northern Centre for Health Education and Research; La Trobe University	Study aimed to examine the benefits of participation in short duration clinically-based interprofessional activities for health care professional students. Findings from 13 articles and two types of interprofessional activities (shadowing and patient reviews) were assessed: students believed that shadowing a non-pharmacist healthcare provider and students who completed patient review activities improved their understanding across all domains of the Core Competencies for Interprofessional Collaborative Practice framework. Bottom line: short duration, clinically-based interprofessional shadowing and patient review activities may have a role in preparing health professional students to practice collaboratively. Further research is needed to confirm the nature and size of student learning outcomes and practical/theoretical implications of this type of interprofessional education.	This study investigated shadowing and patient reviews, with the former being a large part of our own study. We are then able to better understand the impact that shadowing has on learning outcomes. If we are able to derive the practical/theoretical implications of shadowing as a part of PHRM 473, this would fill the gap previously specified.
Applied: IPE in Curriculum (Mixed Methods Study)	(Journal Article, 2018) Examining collaborative leadership through interprofessional education: findings from a mixed methods study	Students enrolled in an interprofessional service-learning elective course, Addressing Childhood Obesity through Community Approaches, at the University of South Carolina	University of South Carolina	Study aimed to understand how students' perceptions of leadership change as a result of embedding a collaborative leadership model, the Social Change Model (SCM) of leadership, in an IPE course. Students' perceptions of leadership efficacy significantly improved on top of improvements to the three group-level values defined by the SCM: collaboration, common purpose and controversy with civility. As well, students learned to view leadership as more of a team effort than the actions of a single individual and as more of a process than a role; findings also revealed the benefits and challenges of using a visual process of poster development as a way of examining students' changes in perceptions of leadership over the course of the semester.	This study focused on collaborative leadership, which is one of the six core competencies that was the very minimum, touched upon in our study. By investigating this study, perhaps a clearer understanding of collaborative leadership will emerge and be applicable to our study.

		during the fall semester of 2015: social work, pharmacy, public health, and a business student was enrolled.		Bottom line: the utility of a collaborative leadership model e.g. the SCM is demonstrated in the larger context of an IPE setting.	
Applied: IPE in Curriculum (Commentary)	(Journal Article, 2020) [Online interprofessional education during and post the COVID-19 pandemic: a commentary]	Students in general	University of Wisconsin-Madison	Study did not really have an aim, rather it discusses the application of certain principles on developing online learning communities in interprofessional education. Meaningful discourse: a process of articulation, reflection, and social negotiation in a collaborative structured manner where the learners share, discuss, and reflect on different perspectives and ideas to co-construct new knowledge. Community of inquiry: creating deep learning in online education requires the presence of social, cognitive, and teaching lives. Bottom line: there are lessons and opportunities to be realized for IPE and collaborative practice, even during the COVID-19 pandemic. By applying and evaluating the principles of meaningful discourse and community of inquiry to online IPE, it allows teachers and students to maintain the 'human touch', community of learning and supportive accountability in virtual learning.	The principles analysed are analogous to ours: meaningful discourse <-> online discussion forums/focus group; within community of inquiry- social presence <-> students adapting to interprofessional environment, cognitive presence <-> project work teaching presence <-> practice educator helping to assimilate the student and understanding more about what a pharmacist/pharmacy student does.
Applied: IPE in Curriculum	(Journal Article, 2019) [Using simulation-based learning to provide interprofessional education in diabetes to nutrition and dietetics and exercise physiology students through telehealth]	Nutrition & dietetics (N&P) and exercise physiology (EP) students	Griffith University	Study aimed to describe an interprofessional simulation-based learning experience (SLBE) with nutrition & dietetics (N&P) and exercise physiology (EP) students. Students' perceptions of the outcomes and benefits of SLBE were high, students perceived competence as higher post-simulation vs. pre-simulation, students had lower perceived levels of tension post-simulation vs. pre-simulation (only SS for EP), all students perceived that SLBE would positively impact their clinical performance in interprofessional practice settings. Bottom line: there is lots of potential for SLBE activities as results from this study were largely positive. The telehealth platform itself was identified as a barrier and with improvements in technology, it can be adequate addressed in future research.	Although this study evaluated at a simulation and how students perceived it, this can still be tied back to our study. Remote practicums in IPE resemble simulations and by identifying what worked (facilitators) and what did not (barriers), we are able to investigate potential improvements for PHRM 473.
Applied: IPE in Curriculum	(Journal Article, 2017) [Developing interprofessional education online: An ecological systems theory analysis]	Students from dietetics, learning disability nursing, medicine, nursing, mental health nursing, midwifery, occupational therapy, operating	Coventry University; University of Wolverhampton	Study aimed to illustrate students' interprofessional development over time, whose impact could be traced to an online asynchronous interprofessional learning initiative involving two UK universities. The ecological system theory lens adopts a life course approach to understand how development occurs through processes of progressively more complex reciprocal interaction between people and their environment. The individual is located within a whole ecosystem which shapes interactions and outcomes by constraining and facilitating in a myriad of	Perhaps by viewing our project through a lens such as the ecological system theory, we would be better able to zero in on the true impact of PHRM 473 on students' learning. Our project looked more at micro- (e.g. all female students who took this novel elective practicum) and meso- systems (e.g. the specific

		department practitioners, paramedics, physiotherapy, rehabilitation engineers, social work and youth work		ways. There are five (nested) levels of interaction: micro-, meso-, exo-, macro-, and chronosystems. Bottom line: with online activities focused on interprofessional learning dispersed through students' programs, students are able to build their professional understanding and knowledge, appreciation of profession-specific and interprofessional culture and identities.	curriculum for PHRM 473, which revolves around the 6 CIHC competencies).
Applied: IPE in Curriculum	(Journal Article, 2011) The evaluation of an online orientation to rural mental health practice in Australia	Nurses, psychologists, social workers and occupational therapists	University of Newcastle	Study aimed to develop and evaluate an online, IPE program for clinicians beginning work in rural mental health services in Australia. Bottom line: statistically significant improvements in participant confidence in responding to mental health problems and also regarding knowledge about the role of different services in rural mental health care. While this online orientation was successful in orienting clinicians to rural mental health, [n] was small and during the beginning stages of the trial, it was challenging to retain patients.	Our project also has a small [n], allowing us to derive similarities between studies evaluating IPE programs. We can better assess if students taking PHRM 473 were able to incur benefit and in what ways.
Curriculum Transition from In-Person to Virtual	(Journal Article, 2021) Training "Pivots" from the Pandemic: Lessons Learned Transitioning from In-Person to Virtual Synchronous Training in the Clinical Scholars Leadership Program	Post-graduate learners enrolled in leadership development program	University of North Carolina at Chapel Hill; Private Evaluation Consultancy; University of Nebraska Medical Center	Study aimed to investigate how program changes, especially transition from in-person to online instruction, can impact students' learning and satisfaction with the delivery of a leadership development program for interdisciplinary healthcare providers. Students self-reported statistically significant gains in knowledge and ability measures in an online environment vs. the in-person environment. Constraints in the online environment included technical difficulties and loss of social connection/networking opportunities vs. the in-person environment. There was positive and negative feedback for both the online and in-person sessions. Bottom line: it is indeed possible to transition from in-person to online delivery, but there are disadvantages to doing so. These include increased preparation time, the loss of the feeling of 'connection' to peers among students and more.	As our study is evaluating PHRM 473, which has also transitioned from in-person to online in its second year of instruction, we are able to determine if the advantages and disadvantages of transitioning to an online mode of delivery in the previous study are congruent with ours. From there, we can identify how PHRM 473 can be potentially improved for the future.