UNIVERSITY OF TORONTO

OFFICE OF THE GOVERNING COUNCIL

**FOR CONFIRMATION** **PUBLIC** **CLOSED SESSION**

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| **TO:** | Executive Committee |
| **SPONSOR:**<br>**CONTACT INFO:** | Cheryl Regehr, Vice-President & Provost<br>416-978-2122<br>provost@utoronto.ca |
| **PRESENTER:** | As above |
| **DATE:** | December 1, 2020 for December 8, 2020 |
| **AGENDA ITEM:** | 4(b) |

**ITEM IDENTIFICATION:**

Proposal to establish an Academic Pharmacy at the Leslie Dan Faculty of Pharmacy

**JURISDICTIONAL INFORMATION:**

Pursuant to the Terms of Reference of Executive Committee (at s. 5.4), the Committee confirms certain decisions reached by the Academic Board, as specified by the Board's Terms of Reference.

**GOVERNANCE PATH:**

1. Planning & Budget Committee [for recommendation] (April 1, 2020)
2. Academic Board [for approval] (April 23, 2020)
3. Business Board [for approval of incorporation] (November 25, 2020)
4. **Executive Committee [for confirmation] (December 8, 2020)**

**PREVIOUS ACTION TAKEN:**

At its April 1, 2020 meeting, the Planning & Budget Committee approved the creation of an Academic Pharmacy at the Leslie Dan Faculty of Pharmacy in principle.

At its April 23, 2020 meeting, the Academic Board approved the creation of an Academic Pharmacy at the Leslie Dan Faculty of Pharmacy in principle, subject to confirmation by the Executive Committee.

At its November 25, 2020 meeting, Business Board approved the incorporation of the Academic Pharmacy as described in the November 16 proposal submitted to the Board.

## HIGHLIGHTS:

### Furthering experiential learning and research

The Leslie Dan Faculty of Pharmacy prides itself on being at the forefront of developing and evaluating innovative ways to deliver pharmacy services and pharmacy education. In order to support and accelerate this work, the Faculty proposes to develop a fully accredited Academic Pharmacy, with the primary twin goals of furthering both a) student experiential learning, and b) innovative and impactful research. The Pharmacy will also be an operating pharmacy open to members of the University community only (students, staff, and faculty).

The attached proposal outlines the academic and research plans for the Academic Pharmacy and sets out the proposed business structure. The core elements and structure of the pharmacy have been established following substantial consultation within the Faculty and across the University. Some of the details of the proposal, however, including the precise initial location of the Academic Pharmacy, have yet to be finalized. It is nonetheless essential to bring this proposal forward at a relatively early stage in the planning process, in order to enable the incorporation of the Academic Pharmacy, which will in turn enable its accreditation by the Ontario College of Pharmacists.

### Accreditation and services provided

Following incorporation, the Academic Pharmacy, as currently designed, will meet all Ontario College of Pharmacists accreditation requirements. It will provide health care programs delivered by members of more than one health discipline (pharmacy, medicine, nursing, social work) and embedded within the University of Toronto's interdisciplinary health care education and research eco-system, so as to provide a training venue to educate students in health and other disciplines, conduct medication and health care services research and to support the physical, mental health and overall wellness of U of T's faculty, staff, students and wider community. All users of the Academic Pharmacy's services must be members of the University of Toronto community; the clinic's services will not be available to members of the public.

### Business structure

Following advice from internal and external legal counsel, the Leslie Dan Faculty of Pharmacy seeks to structure the Academic Pharmacy as a not-for-profit corporation with the University of Toronto as its sole member. After evolving conversations with the Ontario College of Pharmacists we have received confirmation that the interdisciplinary approach planned for the Academic Pharmacy will meet the requirements of s. 142(5) of the *Drug and Pharmacies Regulation Act* and as such would optimally be structured as a not-for-profit corporation.

Draft incorporation documents have been prepared with the advice of University and external legal counsel and are included as appendices to the proposal. Authority to incorporate the Academic Pharmacy was formally received from Business Board.

Any profits flowing from the Academic Pharmacy will flow back to the Academic Pharmacy, in order to support the University's broad academic mission.

Following incorporation, the Academic Pharmacy will report annually to Business Board, which has responsibility for review of annual reports and financial statements of incorporated business ancillaries.

**RECOMMENDATION:**

Be It Confirmed by the Executive Committee

THAT the proposed creation of the Academic Pharmacy at the Leslie Dan Faculty of Pharmacy, as described in the *Proposal: The Development of an Academic Pharmacy at the Leslie Dan Faculty of Pharmacy, University of Toronto,* dated November 16, 2020, be approved.

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**DOCUMENTATION PROVIDED:**

Proposal: *The Development of an Academic Pharmacy at the Leslie Dan Faculty of Pharmacy, University of Toronto*, dated November 16, 2020.

UNIVERSITY OF TORONTO
LESLIE DAN FACULTY OF PHARMACY

# PROPOSAL:
# The Development of an Academic Pharmacy at the Leslie Dan Faculty of Pharmacy, University of Toronto

March 9, 2020


Steering Committee

Lisa Dolovich, Professor and Dean
Zubin Austin, Professor
Aleksandra Bjelaja Mejia, Assistant Professor
Carlo DeAngelis, Clinician Scientist
Project Development Lead: Ernie Avilla
Research Officer: Annalise Mathers

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## EXECUTIVE SUMMARY

The role of pharmacy has evolved beyond dispensing medications and will continue to grow as health care systems around the world work to build modern, integrated and sustainable health care systems that include the best use of medications to maintain and improve health.

The Leslie Dan Faculty of Pharmacy is at the forefront of developing and evaluating innovative ways to deliver pharmacy services and pharmacy education. LDFP is the fourth ranked school in the world for pharmacy and pharmacology (QS World University Rankings). To support and accelerate our work the LDFP is planning to build a fully accredited Academic Pharmacy (AP) aligned with the University of Toronto's strategic goals. The focus of the Pharmacy will be research and teaching.

Partnering with and enhancing existing LDFP programs (both education and research) and resources, the academic pharmacy will serve as a living laboratory, dedicated to research, education, and innovation. The research and educational mission of the pharmacy will be accomplished while providing exemplary patient care for the management of acute and chronic conditions with a special emphasis on health promotion and disease prevention. The academic pharmacy will include a needs-based dispensary with limited onsite inventory, offer a range of professional pharmacy services for students, staff and faculty at the University of Toronto from all three campuses. This academic pharmacy will function as a vehicle for evaluating practice innovation and will accelerate the speed of which new models of care are applied to practice.

The development of the AP is aligned with The University of Toronto's principle that work-integrated and experiential learning opportunities play an important role in enhancing the educational experiences of students. Experiential education (EE) is an integral and mandatory component of student learning at the Leslie Dan Faculty of Pharmacy. The AP practice experience will be embedded in the pharmacy curriculum by offering EE placements (both direct and non-direct patient care) designed to prepare and assess students for practice-readiness. In addition, the AP will provide a unique practice environment where LDFP Faculty will have the opportunity to conduct direct observation and assessment pharmacy student's application of knowledge and clinical skills in a real-world setting. The AP will also provide an environment to standardize and build the skills of preceptors to continually to improve the quality of our educators. The AP will also provide opportunities for learners from other health disciplines to train in delivery of interdisciplinary care and for learners from other disciplines to focus on innovation in connected areas such as business, technology, architecture and information science. The integration of the AP into the EE curriculum will be a multi-phased approach over the next two years where we will

test best methods for teaching and learning as well as slowly scale-up implementation of programs and research initiatives.

The development of the AP is well aligned with the LDFP strategic plan for research initiatives. Two of the main priorities outlined in the LDFP five-year Strategic Plan are to: (1) Grow our scientific impact by investing in our infrastructure to support our core research areas and increasing both the impact and visibility of our research; and (2) Improve health through knowledge translation and influence.

The AP will offer a robust research enterprise and work collaboratively with the Department of Pharmaceutical Sciences graduate programs and several LDFP and multi-unit research centres to support the scholarly work of faculty and create a nurturing infrastructure for new researchers and students from Pharmacy, other health disciplines and nonhealth disciplines such as Business and Engineering. Furthermore, the AP will offer pharmacy and other students with multiple opportunities to advance their research abilities.

On October 8, 2019 the Faculty Council of the Leslie Dan Faculty of Pharmacy approved in principle the development of the AP. Subsequently, on February 12, 2020, the Faculty Council of the Leslie Dan Faculty of Pharmacy approved the development of the Academic and Research Plan for the AP.

Following discussion with University legal counsel and others, a decision was made to propose the incorporation of the academic pharmacy as a corporation solely-owned by the University of Toronto. The AP will be a wholly owned University of Toronto for-profit corporation. With guidance and collaboration from University legal counsel and outside counsel retained by the LDFP, various corporate documents have been drafted. As part of the corporate bylaws any net income available for distribution shall be distributed to the University of Toronto in furtherance of its academic mission and related activities.

The AP will meet the Ontario College of Pharmacists accreditation requirements. The dispensary space will not be accessible to the public. We are in the initial planning stages of considering the first main location of the AP, to be located at the LDFP at 144 College Street. However, we are also exploring integration or co-location with the Health and Wellness Clinical Services for students on the St. George campus and the concept of offering flexible “pop-up” or “mobile” locations throughout the U of T tri-campus communities, where pharmacy services such as administering flu vaccinations, providing student consultations around maintaining health and well-being (with a focus on medication and use of substances such as cannabis and other ‘natural health products’), general medication management, or travel health may occur. This will provide

a convenient enhancement to current healthcare services for members of our University community. We will work closely with University Health and Wellness Clinical Services to ensure smooth integration of service delivery.

We do not expect the operating budget including direct revenues from student tuition or other fees to be used to fund the operations of the AP. Therefore, there are no resource implications for the University's operating budget. Start-up funds were allocated to the academic pharmacy in 2018 from the LDFP operating reserves (from 2018/19, 2019/20 and 2020/21). Our budgetary projections indicate that the academic pharmacy is self-sustainable. Revenue will be generated through the provision of pharmacy services (third-party payers, billable pharmacy services, cash transactions) and reallocation of funds spent on external experiential rotations to resource rotations within the AP. In addition, LDFP , in consultation with the Division of University Advancement, is building the case to approach private and corporate donors to secure a portion or all of the required funds. In addition, government grants will be sought to support educational and research activities.

## SCOPING REVIEW AND STAKEHOLDER ENGAGEMENT

A number of planning activities were carried out over the last year that have informed the development process for the AP. They include:

- an environmental scan and scoping review to gain a better understanding of the characteristics existing academic-based (i.e., universities/colleges) pharmacies such as technology, patient services and population, and research/educational mandates; and
- structured stakeholder engagement workshops with potential AP customer and participant groups to determine current issues with current health service offerings, identify barriers/facilitators to AP use, needs and expectations.

### 1) Environmental Scan and Scoping Review

A search of electronic databases and the International Pharmaceutical Federation (FIP) Official List of Pharmacy Schools from 2000-2019 yielded a total of 19 academic-based pharmacies: 3 in Canada, 14 in the United States, and 2 in the United Kingdom. A total of 33 publications (in both the academic and grey literature) were published by these organizations which reported the following key characteristics:

*Operations:*

- 64% opened between 2010-2018
- 84% had a physical location
- 16% telepharmacies that worked directly with a medication therapy management service provider
- 50% were located directly within the university's School of Pharmacy (as opposed to another location on campus)

*Products/Services:*

- 47% dispensed medications
- 63% provided medication reviews
- 37% offered immunization services
- 26% offered medication education, preventative health management services, and smoking cessation
- 21% had travel health services
- 11% offered group education
- 63% offered a consultation/referral model; 26% used an appointment-based service
- 26% were directly linked with community pharmacies

*Population:*

- 68% served patients from the community
- 32% of universities served the university population (students, staff)

*Technology:*

- 5% Mobile app for medication ordering and refills
- 5% Automated dispensing system
- 5% On-campus mobile health services
- 5% Online prescription transfers

**2) Canadian Academic Pharmacies - Comparators**

The three academic pharmacies in Canada: University of British Columbia Pharmacists Clinic, University of Saskatchewan Medication Assessment Center (MAC), and Memorial University of Newfoundland Medication Therapy Services Clinic (Exhibit 2) have been operating for between three and eight years; serving patient populations between 527 to 8660 annually. All programs support student learning experiences however only the UBC clinic reported any students are currently utilizing their services (N=463). Services offered include immunizations and medication reviews and drug information consultation. None of the pharmacies dispense medications. UBC and Memorial reported accreditation by their provincial regulators and all conduct research projects.

**3) Formal Stakeholder Engagement Workshops**

Seven formal stakeholder engagement persona-scenario workshops were held in 2018 with 47 participants (4 students as patients, 6 pharmacy students, 17 pharmacy faculty members, 5 community pharmacists, 9 pharmacy technicians, and 6 U of T Health and Wellness staff.

Participants stated that the AP would provide additional educational value to students as well as pharmacy faculty and affiliated community pharmacists. This was closely related to an interest in the AP supporting opportunities to share new knowledge created through the development and testing of new programs and processes of care among all stakeholder groups interacting with the AP. For example, the sharing on how patients can use virtual technology to interact with their pharmacist or how different pharmacy and nonpharmacy health care providers can collaborate in the medication management using technology. Many stakeholders identified the strong need for an academic centre that could be a neutral testing ground for innovations in pharmacy. The stakeholder groups also discussed the need to identify specific roles and clearer distinctions between the educational versus research aspects of the pharmacy. Stakeholders identified numerous policies and procedures as

needed so as to ensure smooth and transparent operations of the proposed academically (research and education) oriented pharmacy.

**4) Other consultations**

In addition, LDFP is one of seven health programs at U of T, including Medicine (which incorporates physiotherapy, occupational therapy, medical radiation sciences, and physician assistants), Nursing, Public Health, Social Work, Dentistry and Kinesiology/Physical Education. Other schools/faculties that are relevant to our academic mission include the Rotman School of Management, the Ontario Institute for Studies in Education (OISE), and the Faculty of Arts and Science. The Dean (Professor Lisa Dolovich) has met informally with respective Deans, Departmental Chairs and Program Directors to inform them of the goals of the academic pharmacy and to find ways to foster interdisciplinary and cross-disciplinary education. Furthermore, the Dean presented to the Council of Health Sciences (where all health science Deans are represented) on February 5th, 2020 to actively promote the potential to increase collaboration and enhancement of health science research and education endeavours with the development of the academic pharmacy.

In addition to academic institutions, LDFP works collaboratively with the Toronto Academic Health Sciences Network (TAHSN) hospitals, one of North Americas largest, and most diverse, networks of health care facilities. A brief overview of the AP was presented to the Hospital University Pharmacy Education Committee (HUPEC) and a workshop with TAHSN pharmacy leaders is planned for Spring 2020 to better understand how the academic pharmacy can best support and interact with hospital care providers. Furthermore, we have consulted with the U of T employee benefit provider Green Shield Canada. We are in discussions with the leadership of UTM and UTSC to present information about the AP to campus leaders. All consultations have been positive and have identified useful emerging collaborations or opportunities for the AP.

**5) Summary**

The data collected identified key developmental and operational components that must be considered during the AP development process. The findings highlight the opportunity for the AP to create value beyond the health services currently offered at U of T, locally (i.e., City of Toronto), nationally and internationally. The groundwork also identified who the AP creates value for (faculty, staff and students) and key success factors (e.g., services offered, technology used, key partnerships, location) to create competitive advantage and sustainability factors such as low-cost strategies, economies of scale and innovation to support AP's business model.

## JUSTIFICATION AND DESCRIPTION OF THE ACADEMIC PHARMACY

### 1) Justification

There has never been a greater need for people to access high-quality expertise about the effectiveness, safety and use of medications. In Canada, medication management practices remain sub-optimal even though subject matter expertise exists. Medication therapy problems are common and are largely preventable[1], however, individuals continue to be poorly managed. Approximately 1 in 50 people have had a preventable adverse drug event leading to emergency room visits and increased costs to the health care system[2]. The modern pharmacist is largely responsible for helping patients navigate an increasingly complex and costly health care system, particularly with respect to medications.

The Canadian population is aging, and health related needs are increasingly more complex such as increased chronic diseases (CD). The younger population including university aged students have increased challenges maintaining their health and wellbeing including rising mental health concerns and at times challenging physical health situations. This is compounded by our current primary health care system unable to provide a coordinated or well-integrated strategy for effective patient-centred chronic disease risk assessment, prevention and management. As a result, there will be an increased demand for pharmacists to use existing and expanded scopes of practice. Increasing access to disease prevention and management strategies in community pharmacies is a proven solution to improve access to healthcare and patient health outcomes. Pharmacist–based targeted interventions, including those for cardiovascular care, renal disease, dyslipidemia, depression, smoking cessation and diabetes care, have been shown to improve health outcomes.[3-5]

Our health care system is undergoing significant organizational transformative change. In 2019, the Ontario Ministry of Health (MOH) announced plans to expand the scope of practice for pharmacy professionals. Specifically, the Ontario College of Pharmacists (OCP) was directed by the MOH to submit draft regulations that would enable pharmacists to[6]:

- Administer the flu vaccine to children as young as two years old;
- Renew prescriptions in quantities of up to a year's supply;
- Administer certain substances by injection and/or inhalation for purposes that are in addition to patient education and demonstration;
- Perform point of care tests for certain chronic conditions; and
- Prescribe drugs for certain minor ailments.

Ontario pharmacists provide care through a broad set of patient-centred clinical activities within a variety of health care settings including: conducting comprehensive medication reviews and providing prescribing recommendations including Pharmaceutical Opinions, advising and administering vaccines, counseling and prescribing for smoking cessation, independently renewing and adapting prescriptions and providing targeted clinical services such as anticoagulation and antimicrobial stewardship[7].

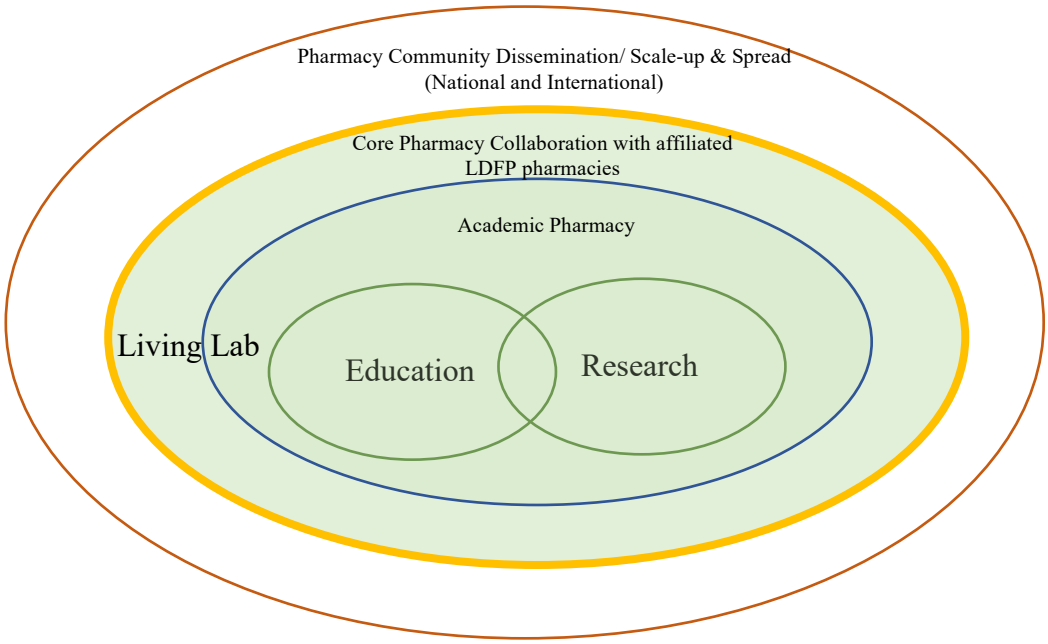
The collective influence of current health care trends and policies compels the profession of pharmacy to make fundamental changes in how it carries out its professional role to effectively and safely meet society's health care needs. Medication management research including pharmacy practice research are key and growing arenas of research, scholarship and innovation development. While the University of Toronto has researchers focused on these areas of work there are few clusters that provide focal points for collective efforts.

The Leslie Dan Faculty of Pharmacy (LDFP) is the largest pharmacy school in Canada training approximately 240 students pharmacy per year within a 4-year pharmacy program. It is challenging to collaborate with a large number of experiential pharmacy learning sites that can provide a future- oriented learning environment complete with integrated and emerging health technologies, a focus on activities that incorporate activities that leverage new scopes of practice for pharmacists, and emerging health care delivery workflows within an increasingly integrated health care system.

## 2) The Opportunity: An Academic Pharmacy

The Leslie Dan Faculty of Pharmacy is planning to open a pharmacy which will serve as a living laboratory, dedicated to research, education, and innovation (Figure 1). The research and educational mission of the pharmacy will be accomplished while providing exemplary patient care for the management of acute and chronic conditions with a special emphasis on health promotion and disease prevention (Exhibit 1). The pharmacy will include a needs-based accredited pharmacy dispensary and offer a range of professional pharmacy services for students, staff and faculty at the University of Toronto. This academic pharmacy will function as a vehicle for evaluating practice innovation and will accelerate the speed of which new models of care are applied to practice.

**FIGURE 1: THE ACADEMIC PHARMACY FRAMEWORK**



**3) Draft Vision**

To be an internationally recognized leader in transforming pharmacy-based health care delivery which will improve the health of Canadians through optimal use of medicines.

**4) Draft Mission**

To advance education and research for pharmacy practice innovation in healthcare delivery which may ultimately help people around the world to manage and get the best out of their medicines, to enhance their health, wellness, and productivity.

**5) Academic impact**

The AP will provide an enriched student-learning environment where teaching, learning, research and service delivery occur simultaneously including:

- Offering hands-on quality learning experiences that facilitate the uptake of new knowledge, and development of skills and confidence required to deliver high quality, evidence-informed, outcomes oriented direct patient care
- Ensuring entry to practice readiness by students demonstrating key pharmacy practice competencies focused on measurable behaviours which impact on patient outcomes
- Standardizing preceptor skills and evaluation of students
- Promoting interdisciplinary education with other faculties across the U of T (e.g., medicine, dentistry, nursing, business etc.)
- Developing practice delivery innovations that will be tested, scaled-up and spread locally, nationally and internationally

**6) Research impact**

Through partnerships with researchers, educators, students, health care providers and decision makers, the AP will:

- Identify and create knowledge that advances science and drives practice, policy and investment on the medication related questions that matter most
- Attract diverse research partnerships and create opportunities for research funding
- Increase the impact and visibility of the research conducted by LDFP faculty and University of Toronto
- Collaborate within the health care system and organization to develop new models of pharmacy practice to ensure optimal medication management efficacy and safety; advance education, training, research, practice and use of leading-edge technology
- Evaluate the quality of impact of care delivered in therapeutic areas such as mental health, immunizations and travel medicine

## PART 1 - ACADEMIC PLAN

### 1.1 APPROPRIATENESS OF THE PROJECT

In response to the current health care trends, evidence and policy changes, the Leslie Dan Faculty of Pharmacy is planning to develop an academic pharmacy (AP) at the University of Toronto. The AP will prepare pharmacy students with the knowledge, skills and practice experience to deliver existing and expanded scopes of pharmacy practice within the health care system in ways that make a difference in people's lives and lead the pharmacy profession forward.

The development of the AP is very aligned with The University of Toronto's principle that work-integrated and experiential learning opportunities play an important role in enhancing the educational experiences of students; and is in the process to expand these offerings further[8].

Experiential education (EE) is an integral and mandatory component of student learning at the Leslie Dan Faculty of Pharmacy. EE allows students to bring their knowledge and skills learned in the classroom and laboratory courses into authentic practice settings.

The AP practice experience will be embedded in the pharmacy curriculum by offering EE placements (both direct and non-direct patient care) designed to prepare and assess students for practice-readiness. It will incorporate best practice models, offer standardized students experiential learning assessments, ensure quality assurance processes, and enhance preceptor development.

The AP will provide a unique practice environment where LDFP Faculty will have the opportunity to conduct direct observation and assessment of students' application of knowledge and clinical skills in a real-world setting. The AP will also provide an environment to standardize and build the skills of preceptors to continually improve the quality of our educators. Furthermore, the AP will reinforce the importance of connecting teaching and learning with research and practice innovation for students, which is a critical success factor for the pharmacy profession as it continues to evolve.

Furthermore, the AP will offer LDFP students with multiple opportunities to advance their research abilities including: (1) Research Elective during APPE rotations (2) Year 3 Research Elective; (3) Undergraduate Summer Research: and (4) Graduate student programs (Master's and Doctoral degrees; MSc in Pharmacy). The pharmacy will be a living lab training ground for trainees from different programs and disciplines to develop and implement various types of projects and initiatives. Learners from pharmacy and other health

disciplines will train in delivery of interdisciplinary care. Learners from other disciplines will be able to focus on innovation in connected areas such as business, technology, architecture and information science. The integration of the AP into the EE curriculum will be a multi-phased approach over the next two years where we will test best methods for teaching and learning as well as slowly scale-up implementation of programs and research initiatives.

## 1.2 DISTINCTIVENESS

There are three academic pharmacies in Canada: University of British Columbia Pharmacists Clinic, University of Saskatchewan Medication Assessment Center (MAC), and Memorial University of Newfoundland Medication Therapy Services Clinic (Exhibit 2) have been operating for between three and eight years, serving patient populations between 527 to 8660 annually. All programs support student learning experiences however only the UBC clinic reported any students are currently utilizing their services (N=463). Services offered include immunizations and medication reviews and drug information consultation. None of the other Canadian academic pharmacies dispense medications. UBC and Memorial reported accreditation by their provincial regulators and all conduct research projects.

The University of Toronto AP offers a unique combination of education, research and service working in unison to develop pharmacy professionals, incorporate interprofessional health care student learning, while accelerating the speed of which new discoveries are applied to clinical practice. This competitive advantage over other Faculty of Pharmacies around the world (Exhibit 2) will attract prospective students, new faculty and potential research funding.

The AP's mission is well aligned with both the Faculty of Pharmacy and the University of Toronto's commitment to improving student experience and to advance education and research for pharmacy practice innovation in healthcare delivery which may ultimately help people around the world to manage and get the best out of their medicines, to enhance their health, wellness, and productivity.

## 1.3 NEED AND DEMAND

The development of the AP will provide increased access to additional health care services on campus where faculty, staff and students can not only fill their prescriptions but also engage with pharmacists about medication management. In partnership with Student Life and Employee Health and Well-being, the AP will co-develop programs that support the U of T health and well-being strategy, offer flu clinics and other clinical services. These programs will be developed as research initiatives that will allow for evaluation of program delivery and impact.

The Health and Wellness Centre at U of T provides resources for students that focus on overall health and wellness through the provision of clinical services, programming focused on mindfulness, physical activity, nutrition, healthy relationships and fostering balance all contribute to a positive university experience.

In 2016-2017, the Health and Wellness Centre at the U of T St. George Campus received 59,889 visits by 14,067 students. Sixty-five per cent of students were undergraduates and 35% were graduate students. A total of 23% were international students. Focus groups were convened by LDFP with students indicated a strong desire and need to move seamlessly among services, thereby avoiding delays in accessing essential support at critical times. Enhancing coordination, collaboration and communication across services on and off campus is critically important to meeting the needs of students.

Various stakeholders were also consulted during the early development phase of the proposal for an Academic Pharmacy and revealed the following related to needs and demands:

- opportunity to focus on transitions of care with medication management for University of Toronto students given the large effort currently undertaken by the Health and Wellness Clinic to handle student transition into and out of the university setting;
- opportunity to provide increased levels of travel and influenza vaccination to our university community;
- opportunity for improved intra-professional collaboration between student learners in the pharmacy and community pharmacists, hospital pharmacists, pharmacy technicians, pharmacy preceptors, and other stakeholders;
- opportunity for faculty and clinical instructors to incorporate their areas of expertise into the pharmacy's education and research mandates;

- opportunity to foster improved inter-professional collaboration with other health care providers at the University of Toronto health and wellness centres on all three campuses, in addition to health care providers in the Toronto community and beyond;
- opportunity to launch targeted programs related to various patient needs through the pharmacy, including vaccinations, overall health and wellbeing, sexual and reproductive health, travel health, infectious disease, and health promotion;
- opportunity to develop partnerships with other stakeholders in the Toronto health community, such as Toronto Public Health, University Health Network, Cancer Care Ontario, and other sites;
- opportunity for patients to receive specific medication counselling and education regarding their therapeutics, cannabis and other 'natural remedies'
- opportunity for the pharmacy to act as an experiential learning hub for pharmacy student learners during their educational rotations;
- opportunity to contribute to the expansion of pharmacist scope of practice, through testing innovative ways to deliver patient care.

**Employment Opportunities**

The Government of Canada's employment outlook for a pharmacist working in Ontario is good over 2019 to 2021 which would lead to employment opportunities for new graduates. However, the number of licensed pharmacists has doubled over the last decade with approximately 16,750 individuals currently in this segment and growing approximately 4% year- over-year[9]. The increased competition highlights the need for the academic pharmacy experience to equip our pharmacy students with best practice models and clinical practice knowledge and skills that will make our new graduates highly competitive in the marketplace. Our engagement meetings with key stakeholders including pharmacy organizations who hire pharmacy graduates has generated high interest in this endeavour.

We have described other comparator programs and other aspects of stakeholder engagement to assess need and interest in a previous section describing our scoping review and stakeholder engagement.

## 1.4 PROGRAM DESCRIPTION

The AP will be one of the 377 EE practice sites offered to pharmacy students. It will provide both direct patient care (DPC) and non-direct patient care (NDPC) experiential learning opportunities for pharmacy students. One of the benefits of the AP site is that it will provide a unique practice environment where LDFP Faculty will have the opportunity to conduct direct observation and assessment of pharmacy students' application of knowledge and clinical skills in a real-world setting. Students will have at least one EE opportunity within the AP site before completing their academic program. The AP will provide an on-site practice site for students who require remediation. This meets a faculty need because it has been at times challenging to find an available site that can accommodate a student who requires an opportunity for remediation within a timely manner.

The entry-to-practice Doctor of Pharmacy program includes forty-three weeks (1720 hours) of practice experiences which complement classroom and laboratory courses and results in an intense program of study to assist students in developing proficiency in all competencies required for entry-to-practice. Our early practice experiences (EPE) involves eight weeks (320 hours) of direct patient care (DPC) in a pharmacy practice setting. Four weeks are completed in a community pharmacy at the end of first year (EPE-1), and four weeks are completed at the end of second year (EPE-2). We provide thirty-five weeks (1400 hours) of Advanced Pharmacy Practice Experiences (APPE) in year 4. At a minimum, students are required to complete twenty-five weeks (1000 hours) in DPC rotations in a variety of practice settings including institutional practice, community practice, and ambulatory care within Canada. The remaining two five-week elective rotations can occur in DPC or non-DPC settings. Non-DPC rotations expose students to wider aspects of the profession of pharmacy. We expect that most pharmacy students will spend approximately 10% of their experiential experiences within the AP (i.e., 1 rotation) so that they obtain the benefit of training within the AP along with the benefit of the balance of their experiential training at the many other varied placement settings.

OEE manages the faculty's relationships with 949 preceptors at 377 distinct sites. When fully functioning, the AP will be included as one of the EE placement options for learners across all pharmacy experiential courses (Table 1). The AP placements will be managed by our Office of Experiential Education (OEE) and as such follow the processes and polices already well established. The policies and processes in place include those that address student health accommodations. Students are expected to develop a learning contract, as well as provide specific objectives for each rotation.

**TABLE 1: EXPERIENTIAL COURSES**

| Year | Code | Description | Schedule |
|---|---|---|---|
| 1 | PHM151H1 | Early Practice Experience 1<br>• Prescription/medication order processing<br>• Patient education<br>• Drug information provision<br>• Medication Hx taking<br>• Observation of/participation in patient safety<br>• Effective communication skills<br>• Professionalism<br>• Teamwork | May – August |
| 3 | PHM389H1 | Research Project | 78 hours |
| 4 | **Advanced Pharmacy Practice Experience (APPE)** | | |
| | PHM401 | APPE institutional required DPC | 1X5 week rotation |
| | PHM402 | APPE institutional required DPC | 1X5 week rotation |
| | PHM414 | APPE community required DPC | 1X5 week rotation |
| | PHM424H1 | APPE Selective DPC | 1X5 week rotation |
| | PHM451H1<br>PHM452H1<br>PHM461H1<br>PHM462H1 | APPE Elective DPC<br>APPE Elective DPC<br>APPE Elective NDPC<br>APPE Elective NDPC | 1X5 week rotation |
| PharmD for Pharmacists | Required | 4 APPEs<br>3 DPC rotations<br>1 Elective | 1X5 week rotation |

**Phased Implementation Approach**

Table 2 describes a four phased approach to incorporating the AP in our EE curriculum over the next two years.

**Phase 1:**

During this phase we will begin our formal application for the AP accreditation from the Ontario College of Pharmacists (OCP). The AP will offer NDPC rotations only. We will offer 2 APPE students per block for a total of 8 student placements for this Phase. Students will work with 1.0 Faculty/Preceptor to co-develop programs and services that will be offered at the AP such as travel medicine, immunizations, sexual health, chronic disease management, mental health and other health promotions programs. There will be no additional staff required.

**Phase 2:**

The AP will continue to NDPC rotations to 4 APPE students per block, for a total of 12 student placements for this Phase. Students will work with 1.0 Faculty/Preceptor. At this stage, if accredited, there may be an opportunity to offering DPC rotations in Block 7. There will be no additional staff required.

**Phase 3:**

We anticipate that the AP will be fully accredited at this Phase. We will over offer both NDPC and DPC rotations to 6 APPE students per block for a total of 18 student placements. Limited dispensing may also be implemented during this time. The Faculty complement for this Phase is 1.5 Faculty/Preceptor, including a part-time Licensed Pharmacy Manager and part-time Education Coordinator. During this phase there may be opportunities for Pharmacy Residents and Graduate Students to engage in the work (education, research) offered in the AP.

**Phase 4:**

This is the AP Launch Phase. The AP will be fully operational to provide both DPC and NDPC rotations. A total of 96 student placements will occur during this phase. We will offer 24 placements per block with a mix of EPI 1 and APPE placement. The Faculty complement for this Phase is 3.0 Faculty/Preceptor, including a full-time Licensed Pharmacy Manager and full-time Education Coordinator. During this phase there will be opportunities for Pharmacy Residents and Graduate Students to engage in the work (education, research) offered in the AP.

**TABLE 2: PHASES OF IMPLEMENTATION**

| Phase 1: May – August 2020 | | Phase 2: Sept – Dec 2020 | | Phase 3: Jan – Apr 2021 | | Phase 4: May – Aug 2021 | |
|---|---|---|---|---|---|---|---|
| • *NDPC rotations only*<br>• *OCP accreditation pending* | | • *NDPC rotations*<br>• *Possible DPC rotations if OCP accredited* | | • *NDPC and DPC rotations*<br>• *Accredited* | | • *NDPC and DPC rotations*<br>• *Accredited*<br>• *Full operations* | |
| Block 1 | 2 APPE placements | Block 5 | 4 APPE placements | Block 8 | 6 APPE placements | Block 1 | 8 placements per EPE1/2/APPE |
| Block 2 | 2 APPE placements | Block 6 | 4 APPE placements | Block 9 | 6 APPE placements | Block 2 | 8 placements per EPE1/2/APPE |
| Block 3 | 2 APPE placements | Block 7 | 4 APPE placements | Block 10 | 6 APPE placements | Block 3 | 8 placements per EPE1/2/APPE |
| Block 4 | 2 APPE placements | | | | | Block 4 | 8 placements per EPE1/2/APPE |
| Faculty complement: | 1.0 | 1.0 | | 1.5 | | 3 | |
| Residents: | None | None | | 1 | | 2 | |
| Graduate students | None | None | | 1 | | 2 | |
| Pharmacy Staff | None | None | | Pharmacy Manager part-time | | Pharmacy Manager full-time | |
| Admin Staff | None | None | | Education coordinator | | Education coordinator | |

**STUDENT SUPERVISION:**

In each Block/rotation, the student is guided, supervised, and assessed on a day to day basis by a preceptor/pharmacist. Experiential Course Coordinators, working with the Office of Experiential Education (OEE) staff, Director of the OEE and Program Directors, provide academic oversight on all aspects related to experiential course delivery, and monitoring and assessment of students during rotations. Appendix II outlines supervision of pharmacy students

## 1.5 INTERPROFESSIONAL EDUCATION

The AP will also provide DPC opportunities to build an interprofessional collaborative approach to Medication Management. The AP will offer hands-on quality learning experiences for faculty, staff and students across the U of T Health Sciences Academic Units (e.g. Dentistry, Nursing, Medicine, Social Work). It is intended that these experiential opportunities will facilitate the uptake of new knowledge, and development of skills and confidence required to deliver high quality, evidence-informed, outcomes oriented direct patient care and promote interdisciplinary education and training opportunities.

The AP will also offer NDPC opportunities to collaborate within cross-disciplines such as the Rotman School of Management, Faculty of Engineering and the Dalla Lana School of Public Health to pioneer new models of delivering pharmacy practice to ensure optimal medication management efficacy and safety; advance education, training, research, practice and use of leading-edge technology.

## 1.6 ASSESSMENT OF LEARNING

Students having DPC rotations taking place in the AP will be assessed using the Ontario Pharmacy Patient Care Assessment Tool (OPPCAT) for DPC rotations (Appendix I) which is the same assessment tool used in other EE rotations. The assessment tool was designed to assess performance longitudinally and is implemented for all levels of learners in all types of DPC settings. The alignment of assessment forms across practice experiences affords the opportunity to track individual students' progression from EPE-1 through to their final APPE rotation.

During both the Early Practice Experience (EPE 1&2) and the Advanced Pharmacy Practice Experience (APPE) rotations, all students are required to evaluate their preceptors and clinical sites at the end of each experiential rotation. This will occur in the AP as it does with other EE rotations. This is accomplished through the completion and submission of the two online evaluation forms, the Student Evaluation of Preceptor and the Student Evaluation of Site., housed and maintained in the CORE ELMS Experiential Database. The form is structured in two parts. The first part of the forms uses a 5-point Likert scale (Strongly Disagree, Disagree, Neutral, Agree, Strongly Agree). Students provide an overall rating based on their impression of their preceptors and their experience at the site, as related to adequate time and resources devoted to student learning, teaching techniques and alignment with program outcomes, appropriate level of responsibility and expectation, guidance, support and feedback provided by the preceptor and other relevant staff and team members at the site etc.

The second part of the evaluation forms provide opportunity for students to add written comments that support their assessment with examples and provide professional and constructive suggestions on areas of improvement for both the preceptor and the practice site. The form also includes a "Confidential Comment Box" Students are encouraged to use this section to confidentially provide feedback and comments viewable only to OEE Faculty/Staff.

The Faculty evaluates the quality of the student experience related to their experiential rotations and the AP will be included in this process as with other EE rotations. Students are able to provide feedback related to the site, the preceptors and the overall learning environment. The data is collected and collated at the end of each block by a Data Analyst and is then reviewed at the end of each term by a committee chaired by the Associate Dean, Academic (currently Interim Director of Professional Programs) who serves as Academic Lead for the Office of Experiential Education. Other members of the committee include the Director of the OEE, the Director of the PharmD program, the Data Analyst and a minimum of two experiential education course coordinators (faculty members). Any concerning data is flagged, and if significant concerns and/or significant volume of negative feedback is identified, the sites and/or preceptors are contacted for follow up conversations and or visit. This process allows us to be responsive to the student experience at rotation sites. The effectiveness of the AP overall will be assessed according to the program evaluation plan which will also be a component of emerging scholarship for the entity. The metrics of success have been provided in various sections of this document.

## 1.7 RESOURCES

The AP will not impact enrolment agreements with the Faculty/Provost's office. We do not expect the AP to impact tuition fees or use tuition fees to fund the AP.

**Office of Experiential Education (OEE) Resources:**

The AP EE will be embedded within the OEE. The AP will operate within the existing resources OEE currently provides such as administrative resources to support students during placements, and acts as a central hub for all stakeholders involved in experiential education activities.

The OEE structure is organized to respond to program growth and changes, including the requirement for customization of services, and the noticeable need for a more student-centered approach that includes student advising and career development services. In addition, the staff, with experience working in client-focused roles, are more flexible and responsive and better positioned to identify and address the needs of all other stakeholders, including faculty members, preceptors and experiential sites. The organizational structure is suited to managing the

experiential process, with improved communication, accountability, coordination, and enhanced efficiency in the development of quality assurance measures.

The OEE along with staff and Course Coordinators Faculty meet regularly with the formally affiliated teaching and community institutions, other hospitals, family health teams, and community pharmacies to ensure that our students are able to undertake experiential education rotations with qualified preceptors and at appropriate sites, and to discuss common issues that arise in arranging, monitoring and evaluating experiential placements.

This entity will not require new resources related to research but rather will draw on resources already allocated to our research office at the Leslie Dan Faculty of Pharmacy to assist with the development and implementation of research projects.

New resources for operating the pharmacy have been identified as part of the business plan which model that the AP will be self-sustaining.

## 1.8 FACULTY COMPLEMENT

The Faculty has a strong mix of faculty members that is comprised of four categories: tenure stream (n=32), teaching stream (n=9), status-only (n=49), and adjunct (n=54). In addition, there are a very large number of affiliated preceptors (approximately 900) who provide placements for our students during experiential rotations coordinated through our OEE. Full time faculty members include a high number of clinically expert pharmacists with Part A licences valid through the Ontario College of Pharmacists allowing them to practice as a pharmacist within an accredited pharmacy.

Teaching and service work carried out by faculty within the AP will be recognized through LDFP workload assignments. The main areas of teaching work are expected to be supervising DPC or NDPC Doctor of Pharmacy Students. The main areas of service work are expected to be membership on AP committees such as the Board of Directors, research oversight or program development and implementation committees. The LDFP Workload Policy is undergoing revision during the 2019-20 academic year and so will be able to incorporate expectations for the AP as part of that process.

It is expected that many tenure stream faculty will be able to supervise graduate and undergraduate students as part of the AP and LDFP research and learning enterprise. All faculty supervising research within the AP will be expected to have appointments with the School of Graduate

Studies (SGS) and most with the Department of Pharmaceutical Sciences although we expect faculty from other Departments to also utilize the AP for research scholarship.

There are many other faculty with status or adjunct appointments who can support research and education within the AP. These include affiliated faculty with SGS appointments who can supervise or contribute to graduate trainee activities.

## 1.9 LEARNING RESOURCES

The AP learners, staff and faculty will have appropriate access to information technology and systems essential for practice such as secure access to patient information, internet and drug and medical information resources as well as access to physical facilities for adequate workspace/resources. In house instructional design and learning technology expertise will be used to help ensure the learner experience is designed in a manner that leverages the use of the best learning resources such as Quercus. Course based materials will be available on Quercus as with almost all other courses, workshops or modules within the Leslie Dan Faculty of Pharmacy.

The AP will be able to leverage the library materials – both print and electronic – that are available without restrictions to pharmacy faculty and students (the only exception being UpToDate, which is only available to students).

The University of Toronto Library (UTL) system is the largest academic library in Canada and is currently ranked 3rd out of all academic research libraries in North America. UTL includes an expansive pharmacy collection. Included in the collection are key pharmacy resources such as:

- All of the major drug monographs, including; e-CPS, RxTx (online and mobile app versions), Micromedex and Lexicomp.
- Key reference books and materials, including; AccessPharmacy, Merck Index, and Harrison's.
- Clinical and Evidence-Based Medicine Resources, including; BMJ best practice, DynaMed Plus, and UpToDate.
- Key health sciences indexes, including; International Pharmaceutical Abstracts, MEDLINE, EMBASE, CINAHL, PsycINFO, Cochrane, Scopus, and Web of Science.
- All 25 of the top 25 journals in the subject of Pharmacology & Pharmacy, as listed in Journal Citation Reports (JCR).

This LDFP eResources page is the highest accessed resource page at UTL with an average of 4000 visits per week. Resources which are not held at UTL are available to users by request via an

interlibrary loan service which borrows and supplies materials from libraries around the world.

## 1.10 QUALITY AND OTHER INDICATORS

One of the key areas of research already identified is the integration of quality improvement processes into pharmacy practice. This focus will allow the AP to both explore quality improvement within a pharmacy setting (a new area for pharmacy practice) as well as the benefit of quality improvement data on various aspects of the experiential, research, practice and management elements of the AP.

**Quality of Educational Experience**

The Faculty has an Education Office that oversees program evaluation for all education programs at the Leslie Dan Faculty of Pharmacy. LDFP also has a Program Evaluation and Assessment Committee which receives program evaluation reports, reviews policies related to program evaluation and makes recommendations to improve program quality. Evaluations of learner experience in the AP will be integrated into program-based evaluation and be shared through existing LDFP quality management processes.

Overall, we evaluate the quality of the student experience via numerous mechanisms. The most robust source of data related to the student experience with the educational aspects of the program comes from our course evaluation data. All course instructors receive course feedback annually. The process requires Faculty to respond to student feedback with specific approaches that will be taken to improve the learning experience in the next year.

For the experiential component of the program, students have an opportunity to evaluate individual preceptors as well as experiential sites to ensure high quality rotations. We have a formal process where experiential Faculty members review student progress through their rotations. This is done on a monthly basis.

The OEE oversees the collection of data (quality indicators) about the experiential courses. Examples of data collected include items directly related to the match process such as the number of and types of experiential rotations, number of preceptors, number of students who are matched with top three choices and number and types of international student experiential rotations. Table 3 describes the educational objectives and their corresponding output(s) and outcome(s).

**TABLE 3: EDUCATIONAL GOAL & OBJECTIVES**

## Educational goal:

## Advance Education Programs that Develop Leaders for Diverse and Emerging Careers

| OBJECTIVES | OUTPUT | OUTCOMES |
|---|---|---|
| • To prepare individuals to enter a variety of emerging careers and practices and function as a professional | • Number and type of profession<br>• Number of licensed pharmacy practices after program completion and location<br>• Number and type of educational activities after program completion | • Students prepared to be competent pharmacists within a variety of emerging careers and practices and function as a professional for them for the Profession |
| • To enrich the student academic experience through experiential learning that will enhance knowledge, skills and professional values and attitudes | • Number and type of students who have had an experiential rotation<br>• Number and type of experiential activities<br>• Increased student self-confidence / self-efficacy | • Improved knowledge<br>• Improved clinical practice skills<br>• Increased problem-solving skills<br>• Increased leadership skills<br>• Increased motivation |

## PART 2 - RESEARCH PLAN

### 2.1 RESEARCH IN GENERAL AT THE LESLIE DAN FACULTY OF PHARMACY

Research at the LDFP spans the broad range of pharmaceutical sciences, encompassing all aspects of drug therapy. This includes the design, synthesis and characterization of new medicinal agents, studies to understand their mechanisms of action, assessment of their effectiveness for treatment of disease, identifying their optimal clinical use for improving patient care, and the economics and policies that define best practices for their essential role in the health care system.

The development of the AP is well aligned with the LDFP strategic plan for research initiatives. Two of the main priorities for research outlined in the LDFP five-year Strategic Plan are to:

- Grow our scientific impact by investing in our infrastructure to support our core research areas and increasing both the impact and visibility of our research.
- Improve health through knowledge translation and influence on policy by;
    - Creating public forums to engage a broad range of stakeholders and the public around health and pharmaceutical policy issues of broad interest;
    - Optimizing opportunities to engage in multi-stakeholder collaborations that impact the health of Canadians;
    - Creating opportunities in collaboration with governments and enhancing our impact in our local, national, and global communities, and;
    - Establishing ourselves as credible thought leaders in pharmacy practice, policy, and pharmaceutical science.

The AP, as a Living Lab, will serve as infrastructure for the development of cutting-edge health services research by many of our faculty and collaborators from other Centres, Faculties or Schools. The research carried out within a number of the Centres at the Leslie Dan Faculty of Pharmacy will benefit from having the AP available. This includes the Centre for Practice Excellence, the Centre for Pharmaceutical Oncology, and the University of Toronto Centre for Study of Pain. The Centre for Practice Excellence will serve as the home for the Research Component of the AP within the Leslie Dan Faculty of Pharmacy.

The 3-year research plan for the AP will include developing and implementing the following:

- Research experiential opportunities
    - Opportunities for undergraduate and graduate student research experiences (more detail provided below)

- Research projects for the evaluation of all new programs within the AP such as immunization, and travel vaccines.
- Research projects that address the evaluation of new digital health technologies and new pharmacy/health system workflows including work with interdisciplinary colleagues
- Structures for conducting research within the AP such as
    - An AP research committee that will review and adjudicate research proposals for the AP to ensure that they are suitable and of high priority.
    - Mechanisms for encouraging research collaborations across the University of Toronto for research within the AP
    - Use of research data management software (such as RedCAp) for conducting research within the AP
    - Ensuring proper and effective processes for research consent of AP patients
    - Mechanisms to include our affiliated pharmacy experiential learning sites in scale up research projects centred within the AP
- Processes for knowledge translation of findings generated by research conducted within the AP

**Examples of Current Research Questions that can be answered through work conducted by the AP:**

- What are the technology requirements and implementation approach for a pharmacy providing future-oriented health care?
- What are the expectations of students as learners, students as care recipients, pharmacy educators, pharmacy technicians and the interprofessional health care teams of an academic pharmacy?
- What are medication needs of students and the University of Toronto including needs related to maintaining overall health, sexual health and health promotion?

**Examples of Potential Future Research Questions that could be answered within the Academic Pharmacy:**

- How can we better define the role of pharmacy students in the delivery of care to patients?
- What is the optimal mix of technical support and professional staff to effectively management medications?
- How can we better use virtual care in medication management delivery?
- What are the best ways to leverage existing (electronic medical records) and emerging technologies to communicate with patients and prevent drug therapy problems?
- How can pharmacy support overall health and well-being among the student population?

- What is the optimal pharmacy physical layout/environment that will optimize medication management?
- What is the effect on health care costs if pharmacists administer minor ailments program?
- Do students learn better with the AP environment versus other experiential sites?
- How does experiential education enhance learning outcomes?
- Do preceptors gain more confidence with on-site, hands-on participation in experiential education activities?
- How can interprofessional preceptorship enhance learning outcomes?
- What is the uptake and effectiveness of influenza and other vaccinations given to University of Toronto students through the AP?
- How can pharmacists work with the interprofessional primary healthcare team at the University of Toronto to maximize student health?
- What is the effect of pharmacy student-delivered education on overall health and medications?

## 2.2 OPPORTUNITES FOR STUDENT RESEARCH EXPERIENCES

The development of the AP will offer pharmacy students multiple opportunities to advance their research abilities through NDPC and DPC rotations as part of their experiential training requirements. Selections for non-direct patient care rotations include research rotations, educational rotations and project rotations. Selections for DPC will offer students the opportunity to engage in clinical research where preceptors have a focus on clinical research or have roles in clinical trials.

### Undergraduate Summer Research

Students may also conduct an Undergraduate Summer Research program at the AP. Undergraduate students are offered a unique opportunity to participate in research under the supervision of a Pharmaceutical Sciences faculty member. PharmD students are offered a unique opportunity to participate in a 12-week research experience in the following areas: molecular basis of drug targets and diseases; drug development and disease diagnostics; drug safety; health services research and clinical pharmacy research. The focus of the student's research experience may include conducting literature reviews, preparing research protocols, conducting components of clinical research associated with patient care and manuscript writing. Often, students may continue to be involved in the study/project after their experiential rotation has completed. Students have presented posters at conferences and published journal articles related to their research.

**Research Elective – Year 3**

There will be opportunities for Pharm D students to perform their elective research-based course, PHM 389 at the AP. The course is designed to introduce students to the philosophy,methodology and performance of research in scientific fields offered by faculty members who hold graduate appointments in the Department of Pharmaceutical Sciences. Fields of study are wide ranging and include drug delivery, drug metabolism, medicinal chemistry, pharmaceutics, pharmacokinetics, pharmacoepidemiology, pharmacy administration and pharmacoeconomic, radiopharmacy, receptor biology, therapeutics, and toxicology. The course includes working in the laboratory or other relevant setting such as the AP, reading, searching for literature, performance of research and writing of the research report.

**Research Elective during APPE**

In this rotation, students participate in one or more research projects and receive an introduction to the requirements and opportunities of a career in research. Students work with the preceptor (and, as relevant, research team) as part of ongoing research at the Faculty or at an experiential placement setting. Students normally are not expected to start and finish an entire research project within the five-week rotation time frame. Although the student's activities may be focused in one or more specific aspects of the research (e.g. research design or data analysis), the student is expected to develop an understanding of all components of the research.

**Graduate students**

In addition, the AP will offer the students from our Graduate Department of Pharmaceutical Sciences a stimulating and productive environment for graduate education and research for students with degrees in physical, biological, and social sciences. We offer research-intensive programs of study in a wide range of areas leading to Master's and Doctoral degrees.

The LDFP launched a new advanced professional practice program for experienced pharmacists in Winter 2020. The Master of Science in Pharmacy (MScPhm) program builds on entry to practice degree programs. The MScPhm program educates and prepares pharmacists with high potential for leadership and a passion for becoming clinical pharmacy academics and leaders. The program will provide an opportunity for students to gain advanced clinical therapeutic knowledge and practice experience in a defined area, in addition to research, education and leadership skills.

**Visiting International Students**

Visiting international students working with LDFP or University of Toronto supervisors can conduct research in the AP through student experiential opportunities described above. The conventional university processes for faculty to host visiting international students will be used.

## 2.3 RESEARCH POLICY AND PROCESSES

Research within the AP will be carried out by LDFP/U of T Affiliated faculty and as such will be supported by the Research Enterprise at the LDFP including oversight by the Associate Dean Research and support from the Research Office. It will also be supported by the Centre for Practice Excellence which will be the research home for activities within the AP. Reports on research within the AP will be developed by the Centre for Practice Excellence and reported within the Annual report of the CPE.

The research activities conducted with the AP will be governed by the University Academic Procedures Manual that include:

- Policy on Ethical Conduct in Research
- Policy on Research Involving Human Subjects
- Framework to Address Allegations of Research Misconduct
- Statement on Protection of Freedom of Speech
- Statement on Prohibited Discrimination and Discriminatory Harassment

The AP will also abide by the policies that guide both faculty and students:

- Code of Behaviour on Academic Matters (guides both faculty and students)
- Code of Student Conduct
- Standards of Professional Practice Behaviour for all Health Professional Students
- Policy on Conflict of Interest for Academic Staff
- Policy with respect to Workplace Harassment
- Policy with respect to Workplace Violence

In almost all cases research conducted at the AP will involve human subjects. All research protocols using human subjects conducted at the AP will be reviewed by a U of T Research Ethics Board (Health Sciences or Social Sciences, Humanities and Education) depending on the type of research being conducted and the faculty affiliation of the Principal Investigator (PI). Research

protocols will also be reviewed by relevant hospital or community research ethics boards depending on the affiliation of faculty investigators or collaborators.

## 2.4 QUALITY INDICATORS - RESEARCH

A key priority in the LFDP Faculty Academic Plan is to measure and communicate the impact of our research (Table 4) which will include:

**TABLE 4: RESEARCH GOAL AND OBJECTIVES**

**Research goal: Grow our scientific impact**

| OBJECTIVES | OUTPUT | OUTCOMES |
|---|---|---|
| • To carry out vital research and test innovations in the delivery of pharmacy services | • Increased knowledge and skills<br>• Number and type of projects<br>• Number of co-investigators<br>• Number of collaborators<br>• Increased opportunities for health research | • Increased number of high quality completed research projects<br>• Increased understanding about pharmacy practice, pharmaceuticals and medication use processes |
| • To train students to carry out vital research and test innovations in the delivery of pharmacy services alongside leading scholars | • Number and type of undergraduate research experiences with a faculty member<br>• Number and type of practicum research experiences for professional master's students | |
| • To facilitate knowledge translation that informs the public/patients, the profession of pharmacy, educators, other health care professions, government, industry and regulatory partners | • Produce high quality papers and conference presentations<br>• Number of publications<br>• Number of abstracts<br>• Number of presentations | • Increased awareness of the AP approach by other communities/jurisdictions<br>• Increased uptake of H&W research and innovations into practice, education and policy<br>• Uptake of innovations within different spheres of pharmacy practice and health care in general |

## PART 3 - BUSINESS MODEL

### 3.1 VALUE PROPOSITION

The AP's value proposition is the unique combination of education, research and service working in unison to develop pharmacy professionals, while accelerating the speed at which new discoveries are applied to clinical practice. This competitive advantage sets U of T apart over other Faculty of Pharmacies (Exhibit 2) to maintain or increase its 4th in the 2020 world QS World University rankings and more attractive to prospective students, new faculty and potential research funding.

The AP business model comprises two core components (education and research) and one support component (service) that functions as a vehicle for practice innovation. Throughout all AP activities, the highest quality of patient care will be delivered. Table 5 summarizes potential revenue sources, costs and core activities associated with each element.

**TABLE 5: BUSINESS MODEL COMPONENTS**

| Model Components | Revenue | Costs | Core Activities |
|---|---|---|---|
| CORE: Education | • Experiential placement fees for direct patient care rotations*<br>• Service contracts with external agencies | Salaries and benefits, educational infrastructure and overhead | Educating<br>Mentoring |
| CORE: Research | • Grants<br>• Donations<br>• Service contracts | Salaries and benefits, research infrastructure and overhead | Research<br>Grant writing<br>Publishing |
| SUPPORT: Service | • Government<br>• Cash payers<br>• Third-party payers | Salaries and benefits; infrastructure | Health care services |

***NOTE:** Currently fees are paid to external sites for EE placements

## 3.2 CORE COMPONENT 1: EDUCATION

The education business model operates where people are transformed into new or improved pharmacy professionals or preceptor/evaluators. High quality of teaching and operational efficiency are important sources of competitive advantage; if not maximized, this can lead to lower profit margins (lower student enrollment).

**End Users**

The AP education core component will create value through experiential learning for both learners and educators. The AP will provide an opportunity for learners to practice pharmacy expanded scope; prepare graduates for practice; and foster professional development for practicing pharmacists. In addition, educators will have the opportunity to test new pedagogical approaches to pharmacy education and collaborate with interprofessional teams.

*Learners:*

- PharmD students
- PharmD for practicing pharmacists
- Graduate students MSc (Master of Science, Master of Pharmacy) and PhD (Doctor of Philosophy) degree programs.
- Residency Program students: The Hospital Pharmacy Residency program and the Industrial Pharmacy Residency program
- International Pharmacy Graduate students
- Continuous Professional Development students: pharmacy professionals, researchers, scientists, and allied professionals involved in pharmacy practice and policy
- Students from other faculties or schools such as other health sciences, business, engineering
- Affiliated preceptors (local, provincial, national, international) from different health care settings

*Educators:*

- Faculty
- Affiliated preceptors (local, provincial, national, international) from different health care settings

**End User Relationships**

The AP education component will provide an opportunity to establish and foster the following stakeholder relationships:

- Preceptor-student (in person and virtual)

- Preceptor-preceptor (in person and virtual)
- Faculty- student (in person and virtual)
- Faculty-faculty (in person and virtual)
- Faculty-preceptor (in person and virtual)
- Community of practice: knowledge exchange & transfer
- Co-creation: design of new and innovative products, services, practice delivery

**Potential Revenue Streams**

No direct revenues from student tuition or other fees will be used to fund the operations of the AP, however the following are possible external sources of revenues:

- Funds for experiential placements currently provided to external rotation sites that would remain in house.
- Service contracts with external agencies
- Funds for experiential opportunities taken up by current pharmacy professionals (pharmacists or technicians) or other types of learners who want to upskill or be exposed to innovative pharmacy practice and who will add to the University of Toronto learner experience (criteria for this type of placement still need to be developed)

## 3.3 CORE COMPONENT 2: RESEARCH

The research model of the AP will entail scholarship for discovery and creation of knowledge that is funded by numerous sources including governmental agencies and not on the basis of achieving a particular outcome. The expected products of our efforts will be consultative advice, new knowledge, and new products (including new technologies) and descriptions of new processes (e.g. implementation guides) that themselves may have scale up and commercialization potential. Research has the potential to generate excess revenue which can be reinvested in further research and education programs. It will also attract exceptional students who can build their research skills, complete their understanding and graduate research requirements, and contribute to the research programs within the pharmacy.

**End Users**

The AP research core component will create value to researchers and learners by providing meaningful answers to critical research questions. Leslie Dan Faculty of Pharmacy researchers in collaboration with internal and external partners will have the opportunity to test existing and emerging educational, clinical, and technological approaches to the delivery of pharmacy services.

*Learners:*

- students,
- professionals such as community pharmacists

*Researchers:*

- Faculty
- Collaborators

**Key Stakeholder Relationships**

The AP research component will provide an opportunity to further develop and strengthen the following stakeholder relationships:

- Faculty Researcher-Student (in person and virtual)
- Researcher-Researcher (in person and virtual)
- Community of Practice (All): knowledge exchange & transfer
- Co-creation (All): design of new and innovative products, services, practice delivery

**Revenue Streams**

All research projects are revenue neutral. Potential revenue streams include:

- Grants (public and private);

- External service contracts (public and private) such as commission research. For example, projects to evaluate workflow systems; Practice Assessment of Competence at Entry (PACE) that assess pharmacist applicants' entry-to-practice competence; investigational drug trial service;
- Service fees charged to research projects (internal and external) for research administrative time; and
- Private donors

## 3.4 SUPPORT COMPONENT 3: SERVICE

The service model is a mix of a solution shop and fee-for-service process. Fees are paid for services provided to cover the direct costs of the services. The pharmacy services value chain currently faces a decrease in government reimbursement schemes that will force pharmacy providers to reevaluate how decisions are made (purchasing resources, types of services provided, technology use) and how to deliver value (convenience, accessible, positive care experience, lower costs, higher medical quality) to patients while generating enough revenue to cover increasing healthcare costs. The AP research initiatives will provide opportunity to test new approaches to providing effective pharmacy care within changing contexts and constraints.

### Strategic Goals for Service

Table 6 describes the objectives for each goal and their corresponding output(s) and outcome(s).

**TABLE 6: PHARMACY PRACTICE GOAL AND OBJECTIVES**

**Pharmacy Practice goal: Improve health care experience**

| OBJECTIVES | OUTPUT | OUTCOMES |
|---|---|---|
| • To provide evidenced based pharmacy care to patients through advanced education and research | • Number and type of patients<br>• Number of types of repeat patients | • Customer service/satisfaction<br>• Improved health outcomes<br>• Sustained customer responsiveness/demand |
| • To build partnerships with community pharmacies to foster coordinated care for the patients it serves | • Numbers and types of sustainable partnerships that are seen as mutually valued and mutually beneficial | • Positive perceptions of community pharmacists |
| • To provide pharmacy services that are financially viable and sustainable to optimize medication use, promote wellness and disease prevention. | • Profitability<br>• Low risks – financial and operational | • Profitability ratios: Return on Equity, Return on Investment<br>• Operational efficiency<br>• Growth |

**End Users**

The main end users of the AP are University of Toronto faculty, staff, and students, who will pay fees for pharmacy services, or receive care and services through financial support provided by research and innovation projects.

Seven types of AP service users have been identified (so far) as potential key end-users of the AP (Exhibit 3).

*Students:* Students are expected to be the primary service users of the AP in terms of numbers of users. During the first year of full operations (after start-up phase), our goal is to serve approximately 10% (n=9,129 in 2018/19; https://www.utoronto.ca/about-u-of-t/quick-facts) of the students across U of T tri campuses, recognizing that approximately 15% of students access on campus health and wellness services. We have had initial discussions with undergraduate and graduate students health care benefits administrators about possible discounts for products and services and we will continue to discuss the potential for discounts as we finalize the types of products and services offered.

Exhibit 4 outlines characteristics, issues and needs. Students with complex health needs may engage with multiple university services, transition in and out of hospital, or require long-term support delivered through community services.

Student feedback from focus groups indicated a strong desire and need to move seamlessly among services, thereby avoiding delays in accessing essential support at critical times. Enhancing coordination, collaboration and communication across services on and off campus is critically important to meeting the needs of students.

*Staff and Faculty:* There were 3442 full and part time appointed faculty and librarians and 6799 union and non-union full and part time staff as of 2017 (https://data.utoronto.ca/wp-content/uploads/2019/06/Facts-Figures-2018_final.pdf) Currently, this customer segment does not utilize on campus health services. The initial goal would be to capture and serve 10 per cent of this population across various programs once the AP is past its planned development phase. Further research is required to better understand the health care issues and needs of this group segment in order to develop effective marketing strategies.

**Key Stakeholder Relationships**

The AP service support component will provide an opportunity to establish and grow the following stakeholder relationships:

- Patient and Healthcare Provider Consultations about medication management (in person and virtual).
- Healthcare Provider - Healthcare Provider Consultations about medication management (in person and virtual). For example, Pharmacist and Family Physician consultation.
- Preceptor-Student (in person and virtual)
- Preceptor-Preceptor
- Community of practice: knowledge exchange & transfer
- Co-creation: design of new and innovative products, services, practice delivery
- Automated-service (appointment scheduling, remote dispensing)

**Potential Revenue Streams**

There are five potential sources for revenue generation for the service support component of the AP business model:

- Third-party payers
- Approved billable pharmacy services that are reimbursable from the Ontario Ministry of Health and Long Term Care (Table 7)
- Cash transactions: over the counter medications, other stocked products

**TABLE 7: APPROVED BILLABLE PHARMACY SERVICE FEES**

| SERVICE | GOVERNMENT REIMBURSEMENT FEES |
|---|---|
| Medication Review (basic) | $60 per annually (basic); $75 per annually (Diabetes) |
| Medication Review (follow-ups) | $25 annually for standard; $25 annually for MedsCheck for Diabetes |
| Immunization | $7.50 for injectable publicly funded influenza vaccine, and $5 for influenza nasal spray (FluMist) |
| Administration of drugs by injection | Authority to administer drugs by injection but no funding to date |
| Adaption/altering of prescriptions, continuity care and renewals | Authority to adapt or renew but no funding to date |
| Initial Access Prescribing or to manage ongoing therapy | Authority to initiate prescription for nicotine replacement therapy but no funding to date |
| Pharmaceutical Opinions | $15 per opinion "Not filled as prescribed"; $15 for "No change to prescription"; $15 for "Change to prescription" |
| Smoking Cessation | Up to $125 annually for Ontario Drug Benefit beneficiaries: $40 for initial consult; $15 for up to 3 primary follow-ups; $10 for up to 4 secondary follow-ups |
| Emergency Prescription Refills | Authority for emergency refills but no funding to date |
| Dispensing fee | $8.83 on average |

### Key Activities

To provide learners hands-on experiential experience through providing direct patient care the AP will deliver the following pharmacy services

- Overall health and well-being consultations as it pertains to medication management and self-medication education (eg, herbal treatments, cannabis)
- Immunizations (eg, flu vaccine)
- Smoking cessation
- Prescribing for minor ailments
- Acute care for minor ailments
- Chronic disease management
- Mental health program
- Travel medicine program to serve faculty and staff who travel abroad
- Sexual health and needs of specialized groups
- Remote patient consultations
- Telepharmacy
- Dispensing: This will be a needs-based dispensary and will stock onsite a limited inventory of prescription medications.

## 3.5 OWNERSHIP

The academic pharmacy will be a wholly owned University of Toronto for-profit corporation. With guidance and collaboration with internal and external legal counsel, various corporate documents have been drafted, including articles of incorporation and bylaws (to be reviewed by Business Board).

**KEY RESOURCES:**
Figure 2 outlines the AP system design that includes both offline and online processes/ activities that the AP will perform to deliver value to customers. The following are resources that are most critical to the successful execution of the AP:

## 3.6 SPACE/INFRASTRUCTURE:

The AP will meet the OCP accreditation requirements for space. The size of the physical accredited area will be a minimum of 18.6 $m^2$ or 200 $ft^2$ with the dispensary floor area of at least 9.3 $m^2$ or 100 $ft^2$ space. The dispensary will not be accessible to the public. In addition, there will be a separate and distinct patient consultation area offering acoustical privacy. The main location of the AP will be located with the LDFP located at 144 College Street. It is embedded in one of North America's most comprehensive Health Sciences Research clusters including Canada's largest University, and the MaRS Discovery District. The Pharmacy Building is accessibility compliant providing a main entrance with an auto door opener, floors accessible via elevators and accessible washrooms.

There are three potential locations for the AP within the Leslie Dan Faculty of Pharmacy. Discussions have begun to plan the striking of a special committee as part of the space development process that will include representatives from relevant central units, students, faculty and staff. Future space requirements and allocation will be managed through the Dean's office in consultation with Associate Deans, Program Directors and the Chief Administrative Officer and relevant central units.

**Mobile or "Pop-Up" Pharmacy**
We will also explore the concept of offering flexible "pop-up" or "mobile" locations throughout the U of T community where pharmacy services such as administering flu vaccinations or providing student consultations around overall health and well-being, medication management and health promotion may occur. This will provide a convenient alternative to accessing

healthcare services at campus health and wellness centres.

**St. George campus Health and Wellness Centre services**

Preliminary conversations have occurred between members of the LDFP AP planning team and the faculty and staff of the St. George Health and Wellness Centre to consider how to collaborate including opportunities for pharmacy students and their supervisors to be integrated or collaborate with the Health and Wellness Centre team.

## 3.7 HUMAN RESOURCES:

The minimum staff requirements for the AP in the first year of full pharmacy operations will consist of the following:

- 1.0 FTE Pharmacist Manager
- 1.0 FTE Pharmacy Technician
- 0.50 FTE Administrative support

Staff listed will be employed by the corporation. As demand for services increases, the staffing complement will be re-evaluated.

Because the academic pharmacy will be a wholly owned University of Toronto corporation, a *Management Services Agreement* between the corporation and U of T will be required. U of T services offered will range from finance, accounting, information technology and human resources.

## 3.8 FINANCE

It is estimated that approximately $1 million dollars of capital is required at start-up (Table 8) . In order to secure initial funds, the U of T advancement group will look to private and corporate donors to secure a portion or all the required funds. In addition, government grants will be sought to support educational and research activities.

**TABLE 8: START-UP BUDGET**

| | | |
|---|---|---|
| EQUIPMENT & SUPPLIES | | |
| Pharmacy Supplies | $ | 6,000.00 |
| Pharmacy Inventory | $ | 90,000.00 |
| Office supplies | $ | 10,000.00 |
| Equipment | $ | 20,000.00 |
| Software | $ | 10,000.00 |
| | | |
| SERVICES | | |
| Insurance | $ | 8,500.00 |
| Legal Services/Accounting | $ | 5,000.00 |
| OCP accreditation | $ | 3,500.00 |
| Consultants: PIA, Other | $ | 25,000.00 |
| | | |
| CONSTRUCTION | | |
| | | |
| Construction | $ | 400,000.00 |
| Furniture/Millwork | $ | 100,000.00 |
| Utilities | $ | 8,500.00 |
| | | |
| SUBTOTAL | $ | 666,500.00 |
| PROFESSIONAL SERVICES | | |
| Project Manager | $ | 66,650.00 |
| Architect | $ | 99,975.00 |
| Pharmacy Manager (3 months) | $ | 40,000.00 |
| CONTINGENCY | $ | 66,650.00 |
| | | |
| TOTAL Start Up Costs | $ | 959,775.00 |

Our projections envision first year operating costs of $593,900 (Table 9) with an estimated annual revenue of $755,000 from pharmacy delivered services or dispensing (Exhibit 5) when the AP is operating at full capacity. Based on revenue from pharmacy services, dispensing, research grants and experiential education placements (Table 10) it is expected that the AP will be self-sustainable.

**TABLE 9: OPERATING BUDGET – Year 1 of Full Operations**

| | | |
|---|---|---|
| Opening inventory | **$** | 90,000.00 |
| Pharmacy Manager (1.0 FTE) includes 24% benefits | $ | 148,000.00 |
| Pharmacy Technician (1.0 FTE) includes 24% benefits | $ | 74,400.00 |
| Administrative Support (0.25 FTE) includes 24% benefits | $ | 25,000.00 |
| Research Administrative Coordinator (0.25 FTE) | $ | 30,000.00 |
| Repairs and maintenance | $ | 7,500.00 |
| Utilities and telephone/telecommunications | $ | 10,000.00 |
| Information Technology | $ | 10,000.00 |
| Interest and bank charges | $ | 10,500.00 |
| Advertising and promotion | $ | 15,000.00 |
| Insurance | $ | 8,500.00 |
| Lease/rent | $ | 150,000.00 |
| Legal/accounting | $ | 10,000.00 |
| Misc. expenses | $ | 5,000.00 |
| Total Operating Expenses | $ | 593,900.00 |

**TABLE 10: REVENUE SOURCES**

| Revenue Source | | Amount |
|---|---|---|
| Prescriptions and Pharmacy Services | $ | 755,000 |
| Research and Innovation Project Grants | $ | 100,000 |
| Advancement | $ | 100,000 |
| Experiential Education Placements | $ | 48,000 |
| Estimated Revenue | $ | 1,003,000 |

***Tax:***

A Corporate tax rate of 25% will be applied to income generated by the AP. The corporation will file T2 corporate tax returns and will register for HST/GST. HST/GST will apply to third-party costs. Pharmaceuticals are zero-rated, thus exempt and U of T provision of services are exempt.

***Financial Reporting:***

The AP must submit financial statements to the U of T Finance Department (Controller). There will be no financial audit required by the U of T Finance Department. The AP will also submit its

annual financial statements to Governing Council's Business Board, as provided for in its Terms of Reference.

***Financial Sustainability:***

Table 11 outlines the financial sustainability metrics the AP will monitor after the first year of full operations.

**TABLE 11: FINANCIAL SUSTAINABILITY METRICS**

| INDICATOR | DESCRIPTION | TARGET |
|---|---|---|
| Net income margin | Measure of how much net income is generated as a percentage of revenue | ≥ 7.24% |
| Primary Reserve Ratio | A measure of financial viability and a broad measure of the liquidity | 166 days<br>The benchmark for this ratio is 0.40, or about 5 months. |
| Interest Burden Ratio | The ability to handle its outstanding debt. | ≥1.52%<br>(>3 better case; <1 worst case) |
| Viability Ratio 1.71. | is a direct measure of the amount of net assets available to cover the debt. | <1.71<br>(Less than 2 is good) |

## Key Partnerships

The following are AP key partnerships that will support AP's mission and strategic goals by:

- Providing guidance on initiatives to strengthen engagement with students, faculty, staff, patients, families, and communities across all AP programs;
- Providing feedback into the AP strategic plans and business plans;
- Providing input on internal and external evaluations of AP activities;
- Participating in public relations activities with external community partners
- Providing advice on approaches to enhance the AP processes and their performance; and
- Fostering collaboration amongst key stakeholder groups.

### Government

- Ontario Ministry of Health and Long-term Care
- Ontario Health
- Ontario Privacy Commission: PIPIDA
- Government Granting Agencies

**Academic/ Hospitals**

- Hospitals; Toronto Academic Health Science Network
- Students: undergraduate, graduate, international
- Health and Wellness Centre
- Other U of T Faculties: Dentistry, Architecture, Computer Science, Engineering, Nursing, Medicine, other allied health professions
- Ethics Review Boards
- Hospital Partners
- Other Pharmacy programs

**Pharmacy Community**

- Community Pharmacies
- Ontario College of Pharmacists
- Ontario Pharmacy Association

**Industry**

- Technology: Bell, Rogers, Telus
- Distributers: McKesson
- Third-party payers: Green Shield Canada, SunLife, Desjardins, Other
- Manufacturers

## 3.9 GOVERNANCE

The Academic Pharmacy Corporation is viewed as akin to an "Incorporated Business Ancillary" will report to Business Board. The Academic Pharmacy will be a for-profit corporation, as required by the provincial Pharmacy regulator. The University will be the sole shareholder and dividends, if any, will flow back to the sole shareholder to support the University's broad academic mission. The Business Board Terms of Reference indicate in s. 5.4 its responsibility for the "designation of incorporated or unincorporated units as ancillaries or termination of such designation." Other responsibilities listed in s. 5.4 are as follows:

- General financial policy on ancillaries
- For incorporated business ancillaries: review of annual reports and financial statements; approval of arrangements for incorporation; approval of capital spending and/or borrowing, as required by financial policy or the by-laws of the ancillary.

Given that the AP will be established as a for-profit corporation (with Business Board reviewing the proposal to establish the AP as a corporation at its next meeting), it will also have oversight, from a business perspective, from Business Board. The AP's annual reports and audited financial statements will be reviewed by Business Board annually.

Academic oversight of the AP will remain with the Dean through her reporting to both the Faculty Council and to the Provost.

The AP will have its own Board of Directors, whose members are appointed by University of Toronto Governing Council. The recommendations for initial members of the Board of Directors include:

- Chair of the Board, Lisa Dolovich, Professor and Dean
- Vice Chair of the Board, Natalie Crown, Assistant Professor
- Vice President, Research, Zubin Austin, Professor
- Vice President, Education, Aleksandra Bjelaja Mejia, Assistant Professor
- CEO/Executive Director, Ernie Avilla, Project Development Lead & Preceptor

## 4.0 PART 4 - RISK ANALYSIS & MANAGEMENT PLAN

In collaboration with the Risk Management office at the University of Toronto, we have identified which factors impact key evaluation metrics for the AP and identified how each factor impacts these metrics by developing a pro-forma risk assessment model. The model assesses the volatility and certainty of these factors using qualitative measures.

During the development of the AP, it will be important to set corporate policies regarding acceptable level of risk and set procedures for monitoring and managing actual risk.

### Risk Assessment Criteria

The areas of risk will be assessed based on the Impact of Risk identified occurring and the Likelihood (probability) (Table 12)

**TABLE 12: IMPACT OF RISK AND LIKELIHOOD**

| Impact **Rating** | **Descriptor** | **Definition** |
|---|---|---|
| **5** | Extreme | • FINANCIAL: loss of $200K or more<br>• REPUTATION: International long-term negative media coverage<br>• LEGAL/REGULATORY: Significant prosecution and fines, litigation<br>• PHYSICAL HARM: Significant injuries or fatalities to students, faculty, staff, patients, other<br>• ORGANIZATIONAL: Multiple senior leaders leave |
| **4** | Major | • FINANCIAL: loss of $100K up to $200K<br>• REPUTATION: National long-term negative media coverage<br>• LEGAL/REGULATORY: Report to regulatory requiring major project for corrective action<br>• PHYSICAL HARM Limited in-patient care required for students, faculty, staff, patients, other<br>• ORGANIZATIONAL: Some senior managers leave, high turnover of experienced staff, not perceived as employer of choice |
| **3** | Moderate | • FINANCIAL: loss of $50K up to 100K<br>• REPUTATION: National short-term negative media coverage<br>• LEGAL/REGULATORY Report of breach to regulator with immediate correction to be implemented<br>• PHYSICAL HARM: Out-patient medical treatment required for students, faculty, staff, patients, other<br>• ORGANIZATIONAL: Widespread staff morale problems and high turnover |
| **2** | Minor | • FINANCIAL: loss of $20K up to $50K<br>• REPUTATION Local reputational damage<br>• LEGAL/REGULATORY Reportable incident to regulator, no follow up<br>• PHYSICAL HARM No or minor injuries to students, faculty, staff, patients, other<br>• ORGANIZATIONAL: General staff morale problems and increase in turnover |

| | | |
|---|---|---|
| **1** | Incidental | • FINANCIAL: loss up < $20K<br>• REPUTATION: Local media attention quickly remedied<br>• LEGAL/REGULATORY: Not reportable to regulator, no claims<br>• PHYSICAL HARM: No injuries to students, faculty, staff, patients, other<br>• ORGANIZATIONAL: Isolated staff dissatisfaction |

| Likelihood **Rating** | **Descriptor** | **Definition** |
|---|---|---|
| 5 | Almost certain | • 90% or greater chance of occurrence |
| 4 | Likely | • 65% up to 90% chance of occurrence |
| 3 | Possible | • 35% up to 65% chance of occurrence |
| 2 | Unlikely | • 10% up to 35% chance of occurrence |
| 1 | Rare | • <10% chance of occurrence |

## PRIORITIZATION

| LIKELIHOOD | | | | | |
|---|---|---|---|---|---|
| | **5** | **10** | **15** | **20** | **25** |
| | **4** | **8** | **12** | **16** | **20** |
| | **3** | **6** | **9** | **12** | **15** |
| | **2** | **4** | **6** | **8** | **10** |
| | **1** | **2** | **3** | **4** | **5** |
| | IMPACT | | | | |

| RISK SCORE | DESCRIPTION | PRIORITY LEVEL |
|---|---|---|
| 20-25 | Critical | 1 |
| 12-16 | High | 2 |
| 6-10 | Moderate | 3 |
| 1-5 | Low | 4 |

## Risk Analysis

Table 13 outlines the risks and risk mitigation for the new academic pharmacy.

**TABLE 13: RISKS AND RISK MITIGATION**

| RISK CATEGORY | RISK DESCRIPTION | RISK MITIGATION |
|---|---|---|
| Strategic | • Unmet stakeholder expectations leading to poor reputation perception | • Consultative approach of all key stakeholders in the development process |
| Governance/ Organizational | • Non-adherence or breach of U of T policies and procedures | • Appropriate governance structure and reporting<br>• Clear roles and responsibilities between corporation and U of T |
| Legal/ Regulatory | • Non-compliance or breach of: Pharmacy Act; Ontario Regulation 202/94; Drug and Pharmacies Regulations Act | • Accreditation<br>• Incorporate all OCP standards of practice and guidelines into corporate policies and procedures |
| | • Ontario government changes to pharmacy payments (e.g., new administrative fees; discontinuation of MedsCheck Basic Annual and the MedsCheck for Diabetes) | • Develop new programs that are paid by Ontario government such as the transitions of care services. |
| Operational Risks (affects cashflows) | • Demand risk - Actual demand for AP may fall short of anticipated demand | • Customer Segmentation<br>• Market research survey to students<br>• Ensure to obtain buy-in from faculty, students, staff and other key stakeholders during the development process |
| | • Supply risk - Losses from not having adequate provision capacity to meet customer demand | • Customer Segmentation<br>• Market research<br>• Ensure to obtain buy-in from faculty, students, staff and other key stakeholders during the development process |
| | • Competitive risk - Large pharmacies [1] dominate the retail drug market results in low revenues | • Low-cost strategy;<br>• Differentiate AP – academic pharmacy; innovation; research<br>• Engage in collaborative projects with other industry |

[1] For example, the Katz Group operates > 460 Rexall and Rexall Pharma Plus locations; McKesson owns IDA and Guardian pharmacies across Canada; Shoppers Drug Mart, owned by Loblaw, operates > 1,307 stores across Canada; Pharmasave includes 550 independently owned stores in nine provinces.

| | | |
|---|---|---|
| Financial Risks | • Profitability risk<br>Porter's five forces industry analysis:<br>• Threat of new entrants – medium<br>• Threat of substitutes – high; natural remedies; lifestyle modifications<br>• Bargaining power of customers –high; increasing customer awareness /expectations (internet)<br>• Bargaining power of suppliers – medium<br>• Intensity of rivalry – high (dominated by handful of large players; online drugstores) | • Profitability depends on access to third-party payer groups<br>• Need to find ways to benefit from economies of scale—for purchasing, access to large groups of customers.<br>• Supplier relationships are important; need to establish strong, long-term relationships with suppliers |
| | • High Interest rates resulting in high costs of goods sold<br>• Interest rates: 1.75% (overnight rates)<br>• 100% U of T equity stake; no cost of borrowing | • Low interest rates; Price of goods low; cost of borrowing low (if needed) |
| | • Lack of growth<br>• Market growth rate: 7.9% annual growth (1998 and 2005 sales drugs; Stats Can); $4.6 billion revenues in 2005. | • Industry is concentrated, but academic pharmacy can compete effectively because of location, reputation and specializing in education and research excellence |
| Patient Care Delivery | Medication incidents – any preventable event or error that reaches a patient and that may cause or lead to inappropriate medication use or patient harm.<br><br>In Ontario, between Nov 2018 to Aug 2019, 4,426 medication safety events were recorded; 2,020 were incidents[2]: 5.5% Mild; 1.6%; Moderate; 0.3% Severe; 0% deaths | • Insurance<br>• Incident reporting – AIMs Program<br>• Implement OCP guidelines<br>• Plan quality: develop quality standards/policies<br>• Quality assurance: identify when and where will we perform QA<br>• Quality control activities: ongoing monitoring<br>• Quality improvement: change control and process improvement processes<br>• Training and Education: Pharmacy Risk Management<br>• Pharmacists have their own personal liability insurance |

[2] AIMS Data Snapshot September 2019 Available at: https://www.ocpinfo.com/wp-content/uploads/2019/09/AIMS-data-snapshot-september-2019.pdf

| | | |
|---|---|---|
| Research Misconduct | • Research misconduct will lead to reputation risk and legal risk<br>• 39 cases of research misconducted reported per year (2009 report)[3] | • Ethics review<br>• Citi Programs – Good Clinical Practice<br>• Citi Programs - Social and Behavioral Research Course<br>• Tri-Council Policy Statement – Ethical Conduct for Research Involving Humans Course (TCPS 2: CORE) |
| Experiential Education | • Student work-related injury or illness<br>• 2 to 3 WSIB claims per year at LDFP; majority are needle stick injuries | • Faculty supervision<br>• WSIB coverage<br>• Site-specific safety orientation and training<br>• Preventing and Addressing Workplace Bullying & Harassment training.<br>• Additional training related to any hazards present or handled during the course of the work.<br>• Ontario – Student Insurance for Practicum / Clinical Placement<br>• Immunization<br>• CPR/First Aid<br>• Police Record Check/Vulnerable Sector Screening (PRC/VSS)<br>• Ontario College of Pharmacists (OCP) Registration and ID Verification<br>• Accident Insurance<br>• Verification of Student Illness or Injury<br>• Accessibility Standards<br>• WHMIS Training Instructions |
| Technology risks | • Speed of technological changes; causing operational inefficiencies | • Technology needs assessment<br>• Technology plan that is modular, scalable<br>• Select the most appropriate technology for high operational efficiency |
| | • Cyber threats<br>• Average cost of a cyber breach in healthcare has been estimated at $359 (US) per record | • Cyber Security and Privacy Liability Insurance<br>• Privacy impact assessment<br>• Use of U of T secure network and services; firewalls; security protocols etc. |
| Privacy risk | • Potential risk of liability relating to privacy breaches involving personal health information<br>• In Ontario, the *Personal Health Information Protection Act, 2004* ("PHIPA") There is a statutory right to seek compensation through the Ontario Superior Court for breach of privacy<br>• PHIPA further provides damages for mental anguish relating to breach of privacy, capped at $10,000<br>• Cost of privacy breach notification and containment programs - notification of patients is mandatory under PHIPA. | • Privacy impact assessment<br>• Policies and procedures relating to privacy and security of personal health information<br>• Training of staff, monitoring and auditing compliance with policies |

[3] The State of Research Integrity and Misconduct Policies in Canada. Prepared for the Canadian Research Integrity Committee. October 2009. Hickling Arthurs Low Consultants. Available at http://www.nserc-crsng.gc.ca/_doc/NSERC-CRSNG/HAL_Report_e.pdf

## 5.0 PRIVACY

In collaboration with the U of T Freedom of Information and Protection of Privacy (FIPP) Office , the LDFP will conduct a Privacy Impact Assessment (PIA) to ensure that privacy is top of mind in the design and implementation of the AP. This will include consideration of any digital health technologies used in the AP or used to transfer information between the AP to patients or other health care providers. The PIA will guide the development of policies and procedures relating to privacy and security of personal health information and the training of staff, monitoring and auditing compliance with policies. The scope of PIA legislative analysis is limited to applicable legislation in Ontario:

- *Ontario Personal Health Information Protection Act (PHIPA):* is governed under the Ontario Personal Health Information Protection Act, 2004 (PHIPA). PHIPA defines the responsibilities and accountabilities of Health Information Custodians (HICs) and other entities that collect, use and/or disclose PHI.

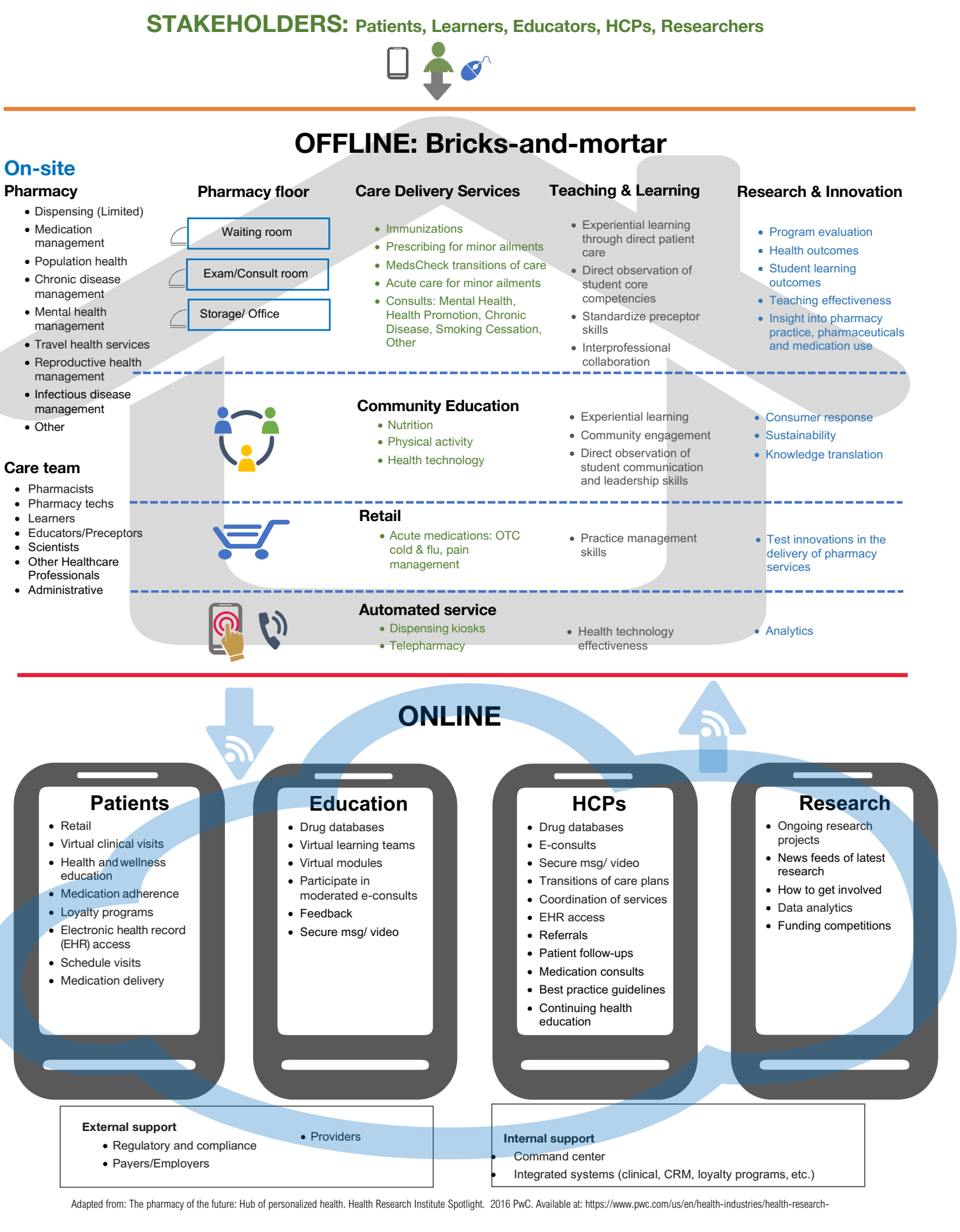
- *Health Information Protection Act, 2016, S.O. 2016, c. 6 - Bill 119*: is an Act to amend the Personal Health Information Protection Act, 2004, to make certain related amendments and to repeal and replace the Quality of Care Information Protection Act, 2004

- *Ontario Regulation 329/04 (O.Reg 329/04):* is a regulation pursuant to PHIPA. It elaborates on the prescribed requirements for compliance with specific sections of the Act.

- *Ontario Freedom of Information and Protection of Privacy Act (FIPPA):* applies to public bodies defined in regulations.

- *Personal Information Protection and Electronic Documents Act (PIPEDA):* federal legislation that applies to information collected, used and disclosed during the course of commercial activities, except where substantially similar provincial legislation exists. The Act does not generally apply to the delivery of health care by publicly funded health care facilities such as hospitals but may apply to pharmacies.

FIGURE 2: The Academic Pharmacy System Conceptual Design




Adapted from: The pharmacy of the future: Hub of personalized health. Health Research Institute Spotlight. 2016 PwC. Available at: https://www.pwc.com/us/en/health-industries/health-research-

## EXHIBIT 1: STRATEGIC GOALS STRUCTURE

| Components | Towards 2030 & Research Strategic PLAN | LDFP 2021 Forward Together | AP Goals |
|---|---|---|---|
| Education | Rethinking Undergraduate Education<br>• Prepare students effectively for lifelong success<br>• Demonstrate how our teaching programs prepare students for successful careers and create larger societal benefit<br>• Anticipate, leverage recent developments in teaching and learning technologies | Advance Education Programs that Develop Leaders for Diverse and Emerging Careers<br>• Create multiple individualized academic pathways that leverage the diversity and expertise of our faculty members and prepare students for a variety of emerging careers and practices.<br>• Foster a culture of evidence-informed continuous program improvement that elevates the quality of our student experience and establishes us as a North American leader in pharmacy and pharmaceutical sciences education.<br><br>Lead Innovations in Pharmacy and Pharmaceutical Science Education and Learner Engagement<br>• Develop and integrate novel education strategies and technologies to optimize the learning experience.<br>• Optimize practice-based/practicum-based learning.<br>• Ensure the curriculum nurtures self-direction and collaborative decision-making through active learning. | • To prepare individuals to enter a variety of emerging careers and practices and function as a professional<br>• To enrich the student academic experience through experiential learning that will enhance knowledge, skills and professional values and attitudes |
| Research | • Engaging students and trainees in research experiences that prepares them for a broad set of roles in society;<br>• Ensuring that all our undergraduate and professional students have opportunities to engage in research and innovation experiences;<br>• Supporting engagement and inclusive collaboration with peer institutions and a diverse array of industry, professional, public sector, government, community, and civil society partners;<br>• Communicating and celebrating the value of our research and innovation achievements. | Grow Our Scientific Impact<br>• Invest in our infrastructure to support our core research areas.<br>• Increase the impact of our research.<br>• Increase the visibility of our research. | • To contribute to understanding and knowledge about pharmacy practice, pharmaceuticals and medication use processes<br>• To carry out vital research and test innovations in the delivery of pharmacy services<br>• To facilitate knowledge translation that informs the public/patients, the profession of pharmacy, educators, other health care professions, government, industry and regulatory partners |
| service | Institutional Approach to Improving Student Experience<br>• Enhance programming and services to improve student experience and student outcomes; include focused efforts in: health and wellness services including mental health, preventing and responding to sexual violence and sexual harassment, study abroad opportunities, international student experience, and graduate student initiatives. | | • To provide evidenced based pharmacy care to patients and advance education and research<br>• To build partnerships with community pharmacies to foster coordinated care for the patients it serves<br>• To provide pharmacy services that are financially viable and sustainable to optimize medication use, promote wellness and disease prevention. |

## EXHIBIT 2: ACADEMIC PHARMACIES IN CANADA

| Location | Start Year | # patients | # students | Services | Location | Technology | Staff | Accred | Research conducted |
|---|---|---|---|---|---|---|---|---|---|
| UBC | 2013 | 8660 | 463 | • No dispensing<br>• Medication review<br>• Vaccines<br>• Interprofessional Collaboration (care plans created and shared)<br>• Group education events, outreach education and health awareness initiatives (influenza, medications return, travelling health fairs) | On campus | • Kroll<br>• PharmaNet<br>• Oscar EMR<br>• Excelleris | • 1.0 FTE Director<br>• 1.0 FTE Admin<br>• 2.8 FTE patient care practitioner | YES | YES |
| UofSask | 2011 | 527 | UNK | • No dispensing<br>• Medication Review<br>• Group patient education session<br>• Interprofessional collaboration<br>• Hypnotic tapering/insomnia<br>• CBT<br>• Smoking Cessation | On campus | • MedAccess | • 1.0 FTE pharmacist<br>• 0.2 FTE pharmacist<br>• 0.01 FTE Registered dietician<br>• 0.3 FTE Admin | UNK | YES |
| Memorial | 2016 | 780 | UNK | • No dispensing<br>• Medication review<br>• Deprescribing program<br>• Adverse effect and drug interaction management<br>• Medication adherence supports and education<br>• Consultative services for medication tapering<br>• Injection services<br>• Smoking Cessation program<br>• Specialized pharmacist services for community groups including workplace health visits, special patient groups | Off-campus | •MediTech<br>•HealtheNL | • 1.0 FTE Advisor on practice innovation<br>• 1.5 FTE Pharmacists<br>• 1.0 FTE Admin<br>• 1.0 FTE Research Assistant | YES | YES |

## EXHIBIT 3: CUSTOMER SEGMENTS

| | Segment 1 | Segment 2 | Segment 3 | Segment 4 | Segment 5 | Segment 6 |
|---|---|---|---|---|---|---|
| **DESCRIPTION** | Students who access Health and Wellness Centre | St. George campus students in residences | St. George student commuters | Mississauga campus students in residences | Scarborough campus student in residences | Faculty/staff |
| **Services Used** | Birth control; mental health; flu shot; sports injury/pain | | UNK | UNK | UNK | UNK |
| **Demographic** | 43% undergrad<br>34% graduate<br>23% international | UNK | 43% Toronto<br>8.3% North York<br>6.5% Scarborough<br>6.5% Mississauga<br><br>Distance from Campus<br>16% less than 1km<br>21% 1 – 3 km<br>10% 4 – 6 km<br>9% 7 – 10 km<br>44% - >11 km | UNK | UNK | UNK |

## EXHIBIT 4: END USER ISSUES AND NEEDS

| END USER | Patients (U of T Students) | Pharmacy Students (U of T) | Community Pharmacists |
|---|---|---|---|
| **ISSUES** | • Lack of coordination of services between on-campus and off-campus services<br>• Long wait times<br>• Lack of coordination within university health services (physio, psych, mental health)<br>• Risk of medication misuse (opioids)<br>• Privacy/ conflict of interest with patients who are students or faculty members<br>• Students who live off-campus would not use services | • Minority of pharmacy students access student health services<br>• Long wait times<br>• Lack of coordination of university services (physio, psych)<br>• Privacy/ conflict of interest with patients who are students or faculty members | • Lack of coordination of delivery of patient care/ medication management<br>• Lack of communication between AP & Community Pharmacy |
| **NEEDS** | • Central location<br>• Extended hours of operation (access after classes)<br>• Quick service; "one-stop shop"<br>• Patient education (adverse effects, meds management, health promotion; impact on health)<br>• Ability to share or transfer prescription from another pharmacy<br>• Healthcare system navigator for out of province or international students | • Opportunities to be exposed to innovative ways to deliver pharmacy services<br>• Direct patient care experience<br>• Working with interprofessional teams and other healthcare students (nurses; medicine)<br>• Opportunity to conduct research<br>• Opportunity to learn from peers at different levels of pharmacy program<br>• Opportunity for future employment<br>• Clear roles/responsibilities, structures/ processes | • Opportunities to be exposed to innovative ways to deliver pharmacy services<br>• Financial incentives<br>• Larger role in patient follow-up |

## EXHIBIT 5: REVENUE ESTIMATE

| | n | %S | Rx dispensed | %S | PO | %S | MCA | %S | MCD | %S | MCA-F | %S | MCD-F | %S | Influenza | %S | SC | %S | SC-F initial | %S | SC-F | %S | HC | %S | HC-F | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Fee | | | $9 | | $15 | | $60 | | $75 | | $25 | | $25 | | $8 | | $40 | | $15 | | $10 | | $60 | | 20 | |
| Estimated number of Rx/visits per year | | | 6 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 3 | | 4 | | 1 | | 3 | |
| Students n=(91,286) | 91286 | 0.05 | $246,472 | 0.01 | 13,693 | 0.01 | $54,772 | 0.01 | $34,232 | 0.01 | $22,822 | 0.005 | $11,411 | 0.05 | $36,514 | 0.02 | $73,029 | 0.02 | $82,157 | 0.02 | $73,029 | 0 | $0 | 0 | $0 | |
| Faculty (N=3442) | 3442 | 0.05 | $9,293 | 0.02 | $1,033 | 0.02 | $4,130 | 0.01 | $2,582 | 0.02 | $1,721 | 0.01 | $861 | 0.05 | $1,377 | 0.01 | $1,377 | 0.01 | $1,549 | 0.01 | $1,377 | 0.02 | $4,130 | 0.02 | $4,130 | |
| Staff (N=6799) | 6799 | 0.05 | $18,357 | 0.02 | $2,040 | 0.02 | $8,159 | 0.02 | $10,199 | 0.02 | $3,400 | 0.02 | $3,400 | 0.05 | $2,720 | 0.01 | $2,720 | 0.01 | $3,060 | 0.01 | $2,720 | 0.02 | $8,159 | 0.02 | $8,159 | |
| TOTAL | | | $274,123 | | $16,765 | | $67,061 | | $47,012 | | $27,942 | | $15,671 | | $ 40,611 | | $77,125 | | $86,766 | | $77,125 | | $12,289 | | 12,289 | 754,779 |

LEGEND

| | |
|---|---|
| %S | Percent served |
| PO | Pharmaceutical opinion |
| MCA | MedsCheck Annual |
| MCD | MedsCheck Diabetes |
| SC | Smoking cessation |
| HC | Health Coaching |
| F | Follow up |

Other services not yet considered but could also be possible revenue sources:

- Travel
- Minor ailments
- Health Coaching - deprescribing

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APPENDIX I - OPPCAT

# APPE - Direct Patient Care Assessment Form (2019)

### General overview

The assessment form is used to document **comments after each Domain** about the specific learner's performance during the rotation, and then to **select corresponding ratings** in support of these comments. The form is completed at midpoint and again at the conclusion of the rotation. There are 5 Domains with a total of 20 Elements to consider. Please assess the learner in each Element and then provide an Overall assessment rating at the end of the form.

*If you select N/A for any element, please provide a brief explanation. On the final assessment, an explanation for N/A responses are required for submission.*

For guidance on the expected level of independence and patient load/volume, please refer to the *Expected level of performance* document

For definition of terms, please refer to the Glossary, or hover directly over the element description (for example, 1.1 Develops Patient Relationships).

## Patient Care

**MIDPOINT** **FINAL**

## 1.1 Develops Patient Relationships

**NO SCORE SELECTED** **NO SCORE SELECTED**

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| **Unable** to form a professional relationship with patients; OR Adopts **paternalistic** or **uncaring** roles with patients; OR Places **personal** values over **patient's** values. | With **significant** guidance, able to develop **superficial** professional, patient-centred relationships with patients. | With **some** guidance, **effectively** develops and **maintains** professional, patient-centred relationships with patients. | With **minimal** guidance, **consistently** and effectively develops and maintains professional, patient-centred relationships with patients. | Independently **determines** and develops the professional relationship **appropriate** for patients. |

## 1.2 Conducts Patient Assessments

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| Conducts patient assessments in a **minimally flexible** or **unstructured** manner resulting in **ineffective** or **incomplete** assessments. | With **significant** guidance, conducts patient assessments **effectively** and in a **thorough** manner. | With **some** guidance, conducts patient assessments effectively and in a thorough manner. | With **minimal** guidance, **consistently** conducts patient assessments effectively in a | Independently **adapts** patient assessment approaches according to patient needs. |

**NO SCORE SELECTED** **NO SCORE SELECTED**

| | | | | |
|---|---|---|---|---|
| | | | thorough and **concise** manner. | |

## 1.3 Identifies Drug Therapy Problems (DTPs)

**NO SCORE SELECTED** **NO SCORE SELECTED**

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| Demonstrates **critical gaps** in knowledge and skills required to identify DTPs. | With **significant** guidance, identifies **primary DTPs**. | With **some** guidance, identifies **most DTPs**. May **not always prioritize** DTPs appropriately. | With **minimal** guidance, effectively identifies **most DTPs** and **appropriately** prioritizes them. | Independently, effectively identifies and appropriately prioritizes **all DTPs**, even on matters of **complexity**. |

## 1.4 Makes Clinical Decisions

**NO SCORE SELECTED** **NO SCORE SELECTED**

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| Demonstrates **gaps** in knowledge and routinely relies on **inappropriate** literature resulting in an **inability** to make decisions; **OR** Regularly demonstrates **poor** judgment. | **Effectively** assesses and reviews appropriate literature. **Inconsistently** or with **significant** guidance demonstrates judgment in decision-making and provides recommendations. | **Effectively** assesses and reviews appropriate literature. With **some** guidance demonstrates judgment in decision-making and provides recommendations. | **Effectively** assesses and reviews appropriate literature. **Consistently** and with **minimal** guidance demonstrates judgment in decision-making and provides recommendations | **Independently** demonstrates appropriate judgment in decision-making and provides recommendations that incorporate **potential systems factors**. |

## 1.5 Implements Care Plans

**NO SCORE SELECTED** **NO SCORE SELECTED**

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| **Unable** to develop a care plan; **OR** Develops care plans that are incomplete, non-specific, unrealistic, or do not foster patient autonomy. | With **significant** guidance, develops care plans that are safe, effective, and respectful of patient autonomy. Care plans are **ineffectively** and/or **inconsistently** implemented**.** | With **some** guidance, develops care plans that are safe, effective, and respectful of patient autonomy. Care plans are implemented **effectively most of the time**. | With **minimal** guidance, develops **comprehensive** care plans. Care plans are **effectively** and **consistently** implemented. | **Independently** develops comprehensive and **concise** care plans. Care plans are **effectively** and **consistently** implemented. |

## 1.6 Refers Patients

NO SCORE SELECTED NO SCORE SELECTED

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| Provides care or services **beyond their scope of practice**; **OR Does not** recognize patients who require referral; **OR** Refers patients to an **inappropriate** care provider. | With **significant** guidance, identifies patients who require referral and makes referrals to the **appropriate** care provider. | With **some** guidance, identifies patients who require referral, makes referrals to the appropriate care providers, and provides **basic** rationale for the referral. | With **minimal** guidance, **consistently** identifies patients who require referral**,** makes referrals to the appropriate care providers, and provides **complete** rationale for the referral. | Demonstrates a **clear understanding** of the roles and responsibilities of a wide range of health care providers by making appropriate and justified referrals. |

## 1.7 Provides Follow-up and Evaluates Care

NO SCORE SELECTED NO SCORE SELECTED

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| **Does not** provide follow-up care to patients. | With **significant** guidance, provides follow-up care to patients and **occasionally** evaluates the effectiveness and safety of the care provided. | With **some** guidance, provides **comprehensive** follow-up care to patients and evaluates the effectiveness and safety of the care provided **most of the time**. | With **minimal** guidance, provides **comprehensive** follow-up care to patients and **consistently** evaluates the effectiveness and safety of the care provided. | **Independently** provides comprehensive follow-up care to patients and evaluates the outcomes. Incorporates **systems** factors for improvement of patient follow-up **processes**. |

## 1.8 Promotes / Advocates for Patient Health & Wellness

NO SCORE SELECTED NO SCORE SELECTED

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| Demonstrates a **lack** of awareness of or **minimizes** their responsibility for, promoting patient health and wellness. | Demonstrates an awareness of their responsibility for promoting patient health and wellness. With **significant** guidance, **effectively** engages in the provision of professional services that aim to promote | Demonstrates an awareness of their responsibility for promoting patient health and wellness. With **some** guidance, effectively engages in the provision of professional services that aim to promote | Demonstrates an awareness of their responsibility for promoting patient health and wellness. With **minimal** guidance, **consistently** and effectively engages in the provision of professional services | **Independently** seeks out current information on health and wellness promotion and **actively incorporates** activities related to these goals in their daily practice. |

| | | | | |
|---|---|---|---|---|
| | patient health and wellness. | patient health and wellness. | that aim to promote patient health and wellness. | |

**Patient Care Comments (Midpoint):** ***Comment Required**

**Patient Care Comments (Final):** ***Comment Required**

## Communication & Education

**MIDPOINT** **FINAL**

### 2.1 Demonstrates Communication Skills (Verbally and Non-verbally)

**NO SCORE SELECTED** **NO SCORE SELECTED**

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| Uses their communication skills in a formulaic or **unstructured** manner, resulting in potentially **ineffective** interventions. | With **significant** guidance, utilizes **appropriate** communication skills to fulfill their professional responsibilities. | With **some** guidance, utilizes appropriate communication skills to fulfill their professional responsibilities. **Unable to consistently adapt** their communication skills to address difficult communication situations. | With **minimal** guidance, utilizes appropriate communication skills to fulfill their professional responsibilities and **consistently** addresses difficult communication situations. | Demonstrates an **ease** of communication and **able to adapt** to situations presented by specific patients. |

### 2.2 Completes Documentation

**NO SCORE SELECTED** **NO SCORE SELECTED**

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| Completes written documentation that is incomplete, unclear or inaccurate. | With **significant** guidance, completes documentation clearly, accurately and in an audience-appropriate format. | With **some** guidance, completes documentation clearly, accurately and in an audience-appropriate format. | With **minimal** guidance, completes documentation clearly, accurately, **concisely** and in an audience-appropriate format. | **Independently** completes documentation clearly, accurately, concisely and in an audience-appropriate format. |

### 2.3 Demonstrates Presentation Skills

**NO SCORE SELECTED** **NO SCORE SELECTED**

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Appears **unprepared** or **disorganized** when presenting information or does not abide by time frames. | Presents information in an organized fashion. Appears **overly** confident or shy throughout presentation. With **significant** guidance, able to respond to audience questions. | Presents information in a timely, professional and effective manner, although does **not** always **appear confident**. With **some** guidance, able to respond to audience questions. | Presents information in a timely, professional and effective manner with **appropriate** level of confidence. With **minimal** guidance responds **effectively** to audience questions. | **Adapts** presentation to **engage** the audience, maximize participation and meet learning needs. **Independently** responds effectively to audience questions. |

**Communication & Education Comments (Midpoint): *Comment Required**

**Communication & Education Comments (Final): *Comment Required**

## Professionalism

Leaners will be expected at all times to adhere to the University of Toronto's *Standards of Professional Practice Behaviour for all Health Professional Students.*

View examples of appropriate and inappropriate professional behaviour. Lapses in professionalism should be detailed in the Comments field below.

**MIDPOINT** **FINAL**

## 3.1 Applies Regulations & Ethical Principles in Practice

**NO SCORE SELECTED** **NO SCORE SELECTED**

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| **Lacks understanding** of fundamental regulations and ethical principles. | Demonstrates understanding of regulations, standards of practice and ethical principles. With **significant** guidance, detects and resolves **actual** situations presenting ethical issues AND **accepts** responsibility and accountability for own decisions and actions. | Demonstrates understanding of regulations, standards of practice and ethical principles. With **some** guidance effectively detects and resolves **actual** situations presenting ethical issues AND accepts responsibility and accountability for own decisions and actions. | Demonstrates understanding of regulations, standards of practice, and ethical principles. With **minimal** guidance effectively detects and resolves **actual** situations presenting ethical issues AND accepts responsibility and accountability for own decisions and actions. | **Independently** detects and resolves **all actual and potential** situations presenting ethical issues effectively AND accepts responsibility and accountability for own decisions and actions. |

**NO SCORE SELECTED** **NO SCORE SELECTED**

## 3.2 Demonstrates an Awareness of One's Own Practice Limitations

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| Is not conscious of **gaps** in own knowledge or skills, practice limitations or need to seek assistance. | **Occasionally** able to identify when own knowledge and experience is insufficient to manage own practice. With **significant** guidance, seeks and implements strategies to practice effectively. | **Consistently** able to identify when own knowledge and experience is insufficient to manage own practice. With **some** guidance, seeks and implements strategies to practice effectively. | Consistently able to identify when own knowledge and experience is insufficient to manage own practice. With **minimal** guidance, seeks and implements strategies to practice effectively. | **Routinely** incorporates self-reflection and **openly seeks** opportunities and resources to enhance own practice. |

## 3.3 Demonstrates Professional Behavior

**NO SCORE SELECTED** **NO SCORE SELECTED**

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| Demonstrates unprofessional behaviour and attitude; OR<br><br>Lacks self-management/discipline behaviours | **Inconsistently** demonstrates professional behaviour and attitude;<br><br>OR<br><br>With **significant** guidance, demonstrates self-management/discipline behaviours. | **Consistently** demonstrates professional behaviour and attitude. With **some** guidance, demonstrates self-management/discipline behaviours. | **Consistently** demonstrates professional behaviour and attitude. With **minimal** guidance, demonstrates self-management/ discipline behaviours. | **Consistently** demonstrates professional behaviour and attitude. **Independently** demonstrates self-management/discipline behaviours. |

**Professionalism Comments (Midpoint):** ***Comment Required**

**Professionalism Comments (Final):** ***Comment Required**

# Professional Collaboration

**MIDPOINT** **FINAL**

## 4.1 Develops and Promotes Inter-/ Intra-professional Relationships

**NO SCORE SELECTED** **NO SCORE SELECTED**

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| **Unable** to form inter-/intra-professional relationships OR demonstrates behaviors or attitudes that **negatively** impact these relationships. | With **significant** guidance, demonstrates interpersonal skills required for inter-/intra- professional relationships. | With **some** guidance, demonstrates interpersonal skills required for inter-/intra- professional relationships. | With **minimal** guidance, **consistently** demonstrates interpersonal skills required for inter-/intra- professional relationships | I**ndependently** promotes inter-/intra-professional collaboration to **foster** a team relationship. |

## 4.2 Fulfills Professional Roles & Responsibilities within Healthcare Team

**NO SCORE SELECTED** **NO SCORE SELECTED**

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| Is **unclear** of own professional roles and responsibilities or **unable** to perform them. | With **significant** guidance, accurately articulates and fulfills own professional roles and responsibilities. | With **some** guidance, accurately articulates and fulfills own professional roles and responsibilities. | With **minimal** guidance, accurately articulates and fulfills own professional roles and responsibilities. | **Independently** fulfills own professional roles and responsibilities and **advocates** for advancement of the profession through collaborative relationships. |

## 4.3 Demonstrates Leadership

**NO SCORE SELECTED** **NO SCORE SELECTED**

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| **Does not demonstrate** leadership abilities when appropriate or required. | With **significant** guidance, contributes to the overall team and systems management of patients. Demonstrates initiative in managing assigned patients within the healthcare team consistent with the pharmacist's role and the team's objectives. | With **some** guidance, contributes to the overall team and systems management of patients. Demonstrates initiative in managing assigned patients within the healthcare team consistent with the pharmacist's role and team's objectives. | With **minimal** guidance, contributes to the overall team and systems management of patients. Demonstrates initiative in managing assigned patients within the | **Independently** shows initiative in creating and leading inter-professional teams. |

| | | | | |
|---|---|---|---|---|
| | | | healthcare team consistent with the pharmacist's role and team's objective. | |

**Professional Collaboration Comments (Midpoint):** ***Comment Required**

**Professional Collaboration Comments (Final):** ***Comment Required**

## Practice Management

**MIDPOINT** **FINAL**

### 5.1 Prioritizes Patient Care Responsibilities to Manage Patient Workload

**NO SCORE SELECTED** **NO SCORE SELECTED**

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| **Unable** to prioritize patient care. Focuses on **technical** or **distributive functions.** | With **significant** guidance, prioritizes patient care and manages expected patient workload within reasonable time frames to ensure patients receive optimal care. | With **some** guidance, prioritizes patient care and manages expected patient workload within reasonable time frames to ensure patients receive optimal care. | With **minimal** guidance, prioritizes patient care and manages expected patient workload within reasonable time frames to ensure patients receive optimal care. | **Independently** prioritizes patient care and manages **higher-than-expected** patient workload within reasonable time frames to ensure patients receive optimal care. |

### 5.2 Manages Drug Dispensing

**NO SCORE SELECTED** **NO SCORE SELECTED**

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| Assumes roles that **disrupt** the effectiveness and safety of the drug dispensing system. | With **significant** guidance, takes responsibility to ensure that all medications are appropriate, accurate, effective, and safe and provided in a manner consistent with all legal requirements. **Practice is limited** to technical aspects of drug dispensing. | With **some** guidance, takes responsibility to ensure that all medications are appropriate, accurate, effective, and safe and provided in a manner consistent with all legal requirements. | With **minimal** guidance, takes responsibility to ensure that all medications are appropriate, accurate, effective, and safe and provided in a manner consistent with all legal requirements. | **Independently** takes responsibility for and incorporates **systems** factors to improve the safety and effectiveness of the drug dispensing system. |

## 5.3 Demonstrates Patient and Medication Safety

**NO SCORE SELECTED** **NO SCORE SELECTED**

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| Engages in unsafe practices, which may result in near misses or medication incidents. Unable to recognize unsafe / sup-optimal practices OR does not recognize own responsibility to manage unsafe practices. | **Inconsistently** recognizes unsafe practices. With **significant** guidance, accepts responsibility for addressing unsafe / sub-optimal practices and managing near misses or medication incidents. | **Consistently** evaluates own practice, recognizing unsafe or suboptimal practices. With **some** guidance, accepts responsibility for addressing unsafe / sub-optimal practices and managing near misses or medication incidents. | **Consistently** evaluates own practice, recognizing unsafe or suboptimal practices. With **minimal** guidance, accepts responsibility for addressing unsafe / suboptimal practices and effectively manages near misses or medication incidents. | **Seeks out** and **leads** formal practice **analyses** for the purposes of patient safety, continuous quality assurance, and practice improvement to prevent similar situations in the future. |

**Practice Management Comments (Midpoint):** ***Comment Required**

**Practice Management Comments (Final):** ***Comment Required**

## Overall Rating

At the **mid-point assessment**, if the overall rating and/or individual Element ratings are **below '3'**, the learner is at risk of FAILING the rotation; this learner must prepare, in consultation with the preceptor and Experiential Course Coordinator, a revised Learning Contract within 3 days following the mid-point.

At the **final assessment**, if the overall rating is **below '3'**, and/or individual Element ratings are below '3', the Experiential Course Coordinator may consult with the learner and preceptor for further clarity of comments/ratings. Specific comments with corresponding low rating(s) will normally support a rotation grade of **'FAIL'**.

***For further information, please view the Grading Policy.***

## Please provide an overall rating for the learner:

| | MIDPOINT | FINAL |
|---|---|---|
| | **NO SCORE SELECTED** | **NO SCORE SELECTED** |

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| Several **critical or significant gaps** identified that | Requires **significant** guidance at the expected level. Some gaps identified that | Demonstrates competence to practice safely and effectively | Competent to practice safely and effectively with **minimal** guidance | **Competent to practice** at a high level, |

| | | | | |
|---|---|---|---|---|
| require development. | require further focused development. | with **some** guidance at the expected level**.** | at the expected level. | beyond the expected level. |

**Overall Rating Comments (Midpoint): *Comment Required**

**Overall Rating Comments (Final): *Comment Required**

## NOTE ABOUT THIS FORM

Developed by the Ontario Pharmacy Patient Care Assessment Tool (OPPCAT) group, which includes representatives from the Ontario College of Pharmacists (OCP), University of Toronto (U of T), University of Waterloo (UW), and Hospital Pharmacy Residency Forum of Ontario (HPRFO). Permission from the authors is required to copy or adapt the assessment form.

| MIDPOINT | FINAL |
|---|---|
| **NO SCORE SELECTED** | **NO SCORE SELECTED** |

APPENDIX II – Experiential Supervision of Pharmacy Students

# SUPERVISION OF PHARMACY STUDENTS & INTERNS FACT SHEET[1]

**Published:** July 2014
**Legislative References:** Pharmacy Act, O. Reg 202/94
**Additional References:** Drug & Pharmacies Regulation Act, R.S.O., 1990, Chapter H.4
**College Contact:** Pharmacy Practice / Registration Programs

## PHARMACY ACT REGULATIONS

*1. "direct supervision" means supervision that is provided by a person [i.e. pharmacist] who is physically present on the premises where the practice that is being supervised is being carried out*

## DRUG & PHARMACIES REGULATION ACT

*149. (1) "no person shall compound, dispense or sell any drug in a pharmacy other than,*

- *a. a pharmacist;*
- *b. an intern under the supervision of a pharmacist who is physically present; or*
- *c. a registered pharmacy student acting under the supervision of a pharmacist who is physically present; or*
- *d. a pharmacy technician acting under the supervision of a pharmacist who is physically present"*

## INTERPRETATION

The requirement for supervision of students and interns by a pharmacist is outlined in the terms, conditions and limitations of their certificates of registration; and the type of supervision, direct or otherwise, is reflective of the accreditation status of the pharmacy. Accredited pharmacies require a pharmacist to be physically present where the authorized acts of compounding, dispensing and selling are occurring.

The model of graduated experiential learning leading to pharmacist registration recognizes that the degree of oversight on the student/intern's practice is adjusted based on his or her demonstration of competence. Supervision is not a one-size-fits-all approach, and requires the active engagement of all participants to ensure a quality learning environment while maintaining best possible patient care.

The principles outlined below are provided to assist in determining the level of supervision required and to fulfill the requirements of the Act and Regulations. They will also facilitate student/intern learning through more independent practice.

[1] The aforementioned information is from the OCP website: http://www.ocpinfo.com/practice-education/practice-tools/fact-sheets/supervision/

## PRINCIPLES

1. Supervising pharmacist(s) to assess each student/intern individually by:
    a. Considering student/intern's level of education and experience
    b. Evaluating student/intern's competence in relevant areas of practice.
2. Supervising pharmacist(s) and student/intern to discuss and agree to:
    a. Types of activities that can be performed independently
    b. Extent to which these activities can be performed without the physical presence of a supervising pharmacist (off-site)

    Exceptions:
    - Authorized acts of compounding, dispensing, selling cannot be done without a pharmacist physically present
    - Student / intern cannot practice remotely on an exclusive basis

    c. Extent of communication and collaboration expected between the supervising pharmacist(s) and student/intern when engaging in various activities
    d. Common understanding of expectations and consequences of independent practice
    - Supervisor takes on accountability / responsibility for student/intern's practice by granting more independence based on their assessment
    - Student/intern takes on significant accountability / responsibility by practicing independently. Should only engage in independent practice when competent, and seek assistance from the supervising pharmacist as needed.
3. Document & retain:
    a. Details and date of the agreement as outlined in # 2 above
    b. All future re-assessments that may impact level of supervision required

    Written agreement should be shared with other individuals supervising the practice of the student/intern for acknowledgement
4. Supervising pharmacist(s) should be clearly identified and auditable
    a. Documentation should be available to readily determine who the supervising pharmacist was at any point the student/intern was engaging in independent practice

**Key Words:** supervision, student, intern

## LEGAL AUTHORITY FOR SCOPE OF PRACTICE/AUTHORIZED ACTS