



## Teaching and Learning Enhancement Fund

### Small TLEF Project – Final Report

Report Completion Date: (2018/06/11)

#### 1. PROJECT OVERVIEW

##### 1.1. General Information

Project Title:	Bridging the Gap from the Classroom to the Institutional Practice Site – A Transition Module for Pharmacy Students		
Principal Investigator:	Marion Pearson		
Report Submitted By:	Marion Pearson		
Project Initiation Date:	April 1, 2013	Project Completion Date:	March 31, 2015

##### 1.2. Project Summary

This project involved the planning, creation, implementation and evaluation of a set of on-line self-study learning modules to better prepare BSc(Pharm) students for their inpatient practicum course, PHAR 489. A needs analysis was conducted to determine students' and preceptors' views of the specific difficulties students have transitioning from the classroom to the institutional setting and to obtain input on content. The following modules were created:

- Module #1 – Transitioning to an Inpatient Practice Site: Provides a general orientation to inpatient procedures, processes, and terminology, and includes a reference list.
- Module #2 – Introduction to Patient Charts: Provides information on the different sections of an inpatient medical record and advice on how to navigate and extract information from an electronic chart to provide pharmaceutical care to patients
- Module #3 – Patient Work-Up and Report (video format): Outlines a systematic approach to patient assessment, common pitfalls to avoid, and how to make a case report to a preceptor

These modules are available through *Connect* (and are being migrated to *Canvas*) for students to complete prior to their in-patient practicums and to access as needed during their practicums. Each module includes an optional quiz for self-assessment of understanding. Module 1 was piloted in 2014W, and all three modules were fully implemented in 2015W.

**1.3. Team Members** – (Please fill in the following table and include students, undergraduate or graduate, who participated in your project).

Name	Title/Affiliation	Responsibilities/Roles
Angela Kim-Sing	Director, Office of Experiential Education, Faculty of Pharmaceutical Sciences	Project manager
Paulo Tchen	Lecturer, Office of Experiential Education, Faculty of Pharmaceutical Sciences	Project manager



Frances Simpson	Research Coordinator, Office of Experiential Education, Faculty of Pharmaceutical Sciences	Project evaluation and dissemination
Jon-Paul Marchand	Manager, Educational Technology, Faculty of Pharmaceutical Sciences	Advisor on online pedagogy; creator of digital learning objects
Tila Pelletier	Pharmacist, Vancouver General Hospital	Advisor on creation of patient chart module; content reviewer
Karen Ng	Pharmacist, Women's and Children's Hospital	Independent contractor responsible for developing learning resources
Jason Wong	Undergraduate Pharmacy Student	Research assistant for literature search and creation of annotated bibliography
Stephanie Hsieh	Undergraduate Pharmacy Student	Research assistant for needs assessment; general project assistant and reviewer of module content
Leo Leung	Undergraduate Pharmacy Student	General project assistant; reviewer and editor of module content
Mariah Williamson	Undergraduate Pharmacy Student	Research assistant for evaluation; reviewer of module content

**1.4. Courses Reached** – Please fill in the following table with ***past***, ***current***, and ***future*** courses and sections (e.g. HIST 101, 002, 2017/2018, Sep) that have been/will be impacted by your project, including any courses not included in your original proposal (you may adapt this section to the context of your project as necessary).

Course	Section	Academic Year	Term (Summer/Fall/Winter)
PHAR 489	002	2014W	Winter
PHAR 489	001	2015W	Fall
PHAR 489	002	2015W	Winter
PHAR 489	001	2016W	Fall
PHAR 489	002	2016W	Winter
PHRM 251†	001	2016W and onwards	Winter
PHRM 272†	001	2016S and onwards	Summer
PHAR 489*	001	2017W	Fall
PHAR 489*	002	2017W	Winter
PHRM 472†	All	2018W and onwards	Fall & Winter

\* Final offerings of this course due to replacement of the BSc(Pharm) program with the Entry-to-Practice PharmD program

† First offerings of new courses in Entry-to-Practice PharmD program. Modules will continue to be used in these courses in future years.

## 2. OUTPUTS AND/OR PRODUCTS

2.1. Please **list** project outputs and/or products (e.g. resources, infrastructure, new courses/programs). Indicate the current location of such products and provide a URL if applicable.

Product(s)/Achievement(s):	Location:
Module #1 – Transitioning to an Inpatient Practice Site	Connect (migrating to Canvas)
Module #2 – Introduction to Patient Charts	Connect (migrating to Canvas)
Module #3 – Patient Work-Up and Report	Connect (migrating to Canvas)

2.2. **Item(s) Not Met** – Please list intended project outputs and/or products that were not attained and the reason(s) for this.

Item(s) Not Met:	Reason:

## 3. PROJECT IMPACT

3.1. **What were you hoping to change or where were you hoping to see an impact with this project?** – Please list the intended benefits of the project for students, TAs, instructors and/or community members.

The intended outcomes for the learning resources created included:

- 1) For students: A reduction in anxiety about entering the in-patient practice environment and improvement in their performance on clinical tasks and other learning outcomes for their in-patient practicum.
- 2) For preceptors and Experiential Education Facilitators at the in-patient practice site: A reduction in time needed to orient students to the site, and reduced supervisory workload

3.2. **Were these changes/impacts achieved? How do you know they occurred?** – To what extent were intended benefits achieved or not achieved? What evaluation strategies were used? How was data collected and analyzed? You are encouraged to include copies of data collection tools (e.g. surveys and interview protocols) as well as graphical representations of data and/or scenarios or quotes to represent and illustrate key themes.

Project evaluation efforts included:

- 1) Surveys of students who used the Module 1 in 2014W and who used all three modules in 2015W
- 2) A survey of the individuals who participated in focus groups during the needs assessment and development phases for Module 1, including faculty members, preceptors and recent alumni

Main findings from these surveys include:

- Students agreed that the modules were easy to access, navigate, and use
- 76% of students agreed or strongly agreed that the content of the modules was relevant to in-patient pharmacy practice



- 70% of students indicated they believed or strongly believed that the modules positively affected their performance during their in-patient practicum
- 25% of students agreed or strongly agreed that the modules helped reduce their anxiety with respect to in-patient pharmacy practice
- Faculty members, preceptors, and alumni strongly agreed that the content of the modules was relevant and should improve students' understanding and practical knowledge about in-patient pharmacy practice
- Preceptors indicated that their supervisory workload had not been noticeably reduced

Please see Appendix B for the survey questions and more detailed survey results.

**3.3. Dissemination** – Please provide a list of **past** and **upcoming** scholarly activities (e.g. publications, presentations, invited talks, etc.) in which you or anyone from your team have shared information regarding this project.

1. Tchen, P., Kim-Sing, A., Hsieh, S., & Pearson, M. (2013, October). Bridging the gap from the classroom to the institutional practice site: A transitional module for pharmacy students. Poster presentation at UBC Celebrate Learning, Vancouver, October 2013.
2. Presentation by Angie Kim-Sing and Paulo Tchen at Pharmacy Experiential Programs of Canada meeting, Saskatoon, May 2014
3. Tchen, P., Leung, L., Williamson, M., Simpson, F., Kim-Sing, A., & Pearson, M. (2015, October). Bridging the gap from the classroom to the institutional practice site: Evaluation of an online transition module for pharmacy students. Poster presentation at the CHES Celebration of Scholarship, Vancouver, BC.
4. Tchen, P., Leung, L., Williamson, M., Simpson, F., Kim-Sing, A., & Pearson, M. (2016, February). Bridging the gap from the classroom to the institutional practice site: Evaluation of an online transition module for pharmacy students. Poster presentation at the CSHP Professional Practice Conference, Toronto, ON.
5. Tchen, P., Leung, L., Simpson, F., Kim-Sing, A., & Pearson, M. (Manuscript in revision). Bridging the gap: An evaluation of self-paced online transition modules for advanced pharmacy practice experience students.

**4. TEACHING PRACTICES** – Please indicate if **your** teaching practices or those of **others** have changed as a result of your project. If so, in what ways? Do you see these changes as sustainable over time? Why or why not?

All undergraduate pharmacy students now must complete the modules before starting their institutional practicums. The modules remain available for the duration of the practicum so students can review as needed. The modules are also being used by Experiential Education Facilitators (pharmacists appointed by the Faculty to support students and preceptors at institutional practice sites) as a teaching and learning resource. This has allowed the course coordinators to focus on other content during the pre-practicum orientations they provide to students. Colleagues elsewhere in BC and at the University of Toronto and University of Alberta have recently been provided with access to view the modules. It remains to be seen whether or how they might make use of the modules.

The changes to practicum education afforded by the modules are sustainable, as the Faculty has the resources to support the periodic updates that will be needed.



**5. PROJECT SUSTAINMENT** – *Please describe the sustainment strategy for the project components. How will this be sustained and potentially expanded (e.g. over the next five years). What challenges do you foresee for achieving the expected long-term impacts listed above?*

The modules have been integrated into the institutional practice courses in the Entry-to-Practice PharmD program:

**PHRM 251 (1) Institutional Practice Skills.** Preparation for experiential learning in the hospital setting. Focuses on enhancing familiarity with the care environment and developing skills suited for students to apply to patient care during institutional experiential rotations.

**PHRM 272 (1) Introductory Pharmacy Practice Experience – Inpatient.** Prescription processing, drug distribution systems, and select patient care activities in real world inpatient environments. Focus on direct patient care activities.

**PHRM 472 (12) Inpatient Advanced Pharmacy Practice Experience.** Application of integrated problem-solving skills to resolve increasingly complex drug-therapy problems in inpatient settings. Patient care will be provided for a wide range of therapeutic areas.

The modules will be reviewed and the content will be updated on an annual basis in conjunction with the review of all practicum course materials. Significant revisions, when required, will be supported by students employed through UBC's Work Learn program and/or students undertaking directed studies (e.g., PHAR 420 – Directed Studies in Pharmacy Education) supervised by faculty members in the Office of Experiential Education. Evaluation efforts will also be ongoing, with the possibility of student involvement through the Faculty's Summer Student Research Program.

**APPENDIX – Survey Questions and Results**

**Table 1: Survey Questions for Students re Modules 1, 2 and 3**

Likert-Scale utilized:

1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree

1. How would you rate your experience with inpatient or institutional practice environments (e.g. hospital, long-term facilities, clinics, etc.) through work, school, or volunteering prior to your PHAR 489 clerkship on the following aspects?: <ul style="list-style-type: none"> <li>• Prior exposure/familiarity: 1 2 3 4 5</li> <li>• Comfort Level: 1 2 3 4 5</li> </ul>
2. In which month did you complete your PHAR 489 clerkship?
3. In which city did your PHAR 489 clerkship take place?
4. Did you have to arrange for housing or accommodations specifically for your PHAR 489 clerkship?
5. At any time before, during or after your PHAR 489 clerkship did you access the Transition Modules on Connect? (please select all that apply) <ul style="list-style-type: none"> <li>• Before: Y/N</li> <li>• During: Y/N</li> <li>• After: Y/N</li> <li>• Did not Access: Y/N</li> </ul>
6. If you did not access the modules, please choose an explanation below (select all that apply) then skip Section II (click 'Next' at the bottom of the page until you reach the end of the survey and click "Submit.") If you did access the module, please continue to the next page. <ul style="list-style-type: none"> <li>• Not aware that the transition modules were available: Y/N</li> <li>• Did not have enough time to complete the modules: Y/N</li> <li>• Technical difficulty accessing the modules on Connect: Y/N</li> <li>• Did not think the modules would help: Y/N</li> <li>• Other</li> </ul>
7. Estimated time to complete each module (e.g. hours: minutes):
8. The length was appropriate: 1 2 3 4 5
9. The level of difficulty was appropriate: 1 2 3 4 5
10. The modules were easy to access, navigate, and use: 1 2 3 4 5
11. The content was relevant to institutional pharmacy practice: 1 2 3 4 5
12. The content was organized, logical, and clearly presented: 1 2 3 4 5
13. The use of the following methods engaged my learning: <ul style="list-style-type: none"> <li>• Animations: 1 2 3 4 5</li> <li>• Short Questions: 1 2 3 4 5</li> <li>• Video Clips: 1 2 3 4 5</li> </ul>
14. Overall, my understanding and practical knowledge of institutional practice has improved after viewing these modules: 1 2 3 4 5
15. Overall, my anxiety level with respect to inpatient practice has reduced after viewing the modules: 1 2 3 4 5
16. What did you like about the modules? Please be specific.
17. How can these modules be improved?
18. What future content or topics would you like to see added to the modules?
19. Any additional comments?

**Table 2: Summary of Student Responses (n=81)**

Question	Module 1 [Score/5]	Module 2 [Score/5]	Module 3 [Score/5]
1. Time to complete each module	Mean 1.17h (SD=0.58) Median: 2.00h	Mean 1.23h (SD=0.60) Median: 2.00h	Mean: 1.19h (SD=0.61) Median: 1.50h
2. Length of module was appropriate	Mean: 3.42 (SD=0.64) Median: 3.00	Mean: 3.43 (SD=0.69) Median: 3.00	Mean: 3.42 (SD=0.69) Median: 3.00
3. Level of difficulty was appropriate	Mean: 3.77 (SD=0.62) Median: 4.00	Mean: 3.82 (SD=0.63) Median: 3.00	Mean: 3.83 (SD=0.62) Median: 4.00
4. The module was easy to access, navigate, and use	Mean: 3.49 (SD=0.99) Median: 3.00	Mean: 3.51 (SD=0.99) Median: 3.00	Mean: 3.49 (SD=0.99) Median: 3.00
5. The content was relevant to inpatient practice	Mean: 3.82 (SD=0.72) Median: 3.00	Mean: 3.91 (SD=0.76) Median: 4.00	Mean: 3.83 (SD=0.78) Median: 4.00
6. The content was organized, logical, and clearly presented	Mean: 3.83 (SD=0.73) Median: 4.00	Mean: 3.82 (SD=0.77) Median: 4.00	Mean: 3.84 (SD=0.72) Median: 4.00
7. The use of the following methods enhanced my learning: <b>Animations/Enhanced Graphics</b>	Mean: 3.79 (SD=1.07) Median: 4.00		
8. The use of the following methods enhanced my learning: <b>Short Questions</b>	Mean: 4.03 (SD=0.84) Median: 4.00		
9. The use of the following methods enhanced my learning: <b>Video Clips</b>	Mean: 3.67 (SD=1.04) Median: 4.00		
10. The use of the following methods enhanced my learning: <b>Interactive Segments</b>	Mean: 3.93 (SD=0.88) Median: 4.00		
11. The use of the following methods enhanced my learning: <b>Quizzes</b>	Mean: 4.12 (SD=0.93) Median: 4		
12. Overall, my understanding and practical knowledge of inpatient practice has improved after viewing the modules	Mean: 3.63 (SD=0.81) Median: 4.00	Mean: 3.82 (SD=0.77) Median: 4.00	Mean: 3.68 (SD=0.86) Median: 4.00
13. Overall, my anxiety level with respect to inpatient practice has reduced after viewing the modules	Mean: 2.92 (SD=0.91) Median: 2.00	Mean: 2.95 (SD=0.97) Median: 2.00	Mean: 2.94 (SD=0.99) Median: 4.00
14. Selected responses to open-ended questions	<p>Certain anxiety and fear for the unknown cannot be helped but the modules did not make it worse in a way that I had an idea what was expected for me to know.</p> <p>Although I found the modules to be very helpful, I am unsure if they decreased my anxiety level. I still felt very nervous going into this rotation. I may have performed some things better following completion of the modules, but it is hard to say for sure.</p> <p>Each facility has its own system so despite these modules being a good starting point it did not help to ease anxiety over how my particular experience would go.</p> <p>While the modules were helpful, I was anxious regardless of how familiar I was with the modules because a hospital pharmacy is a completely different environment compared to the community. Since I hadn't had prior exposure to working in a hospital pharmacy, theoretical knowledge didn't help bring down my level of anxiety.</p> <p>They created more anxiety because I felt this was something we should have learned 2 years ago. Now is not the time to be throwing this at us.</p> <p>I found that it was useful but you tend to forget the information by the time you get to rotation because it is not something you use regularly.</p> <p>I like the interactive feedback with questions posed during the modules and I really like the circling of components on a page of the patient chart.</p> <p>I really enjoyed the fact that it helped me go through sections of the patient chart because that is very stressful when doing it for the first time in real life. It does take practice to get used to finding things in the patient charts however so this was a good warm up for the real thing.</p>		

**Table 3: Survey Questions for Focus Group Members re Module 1 Only**

Likert-Scale utilized:

1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree

1. The length of each part was appropriate: 1 2 3 4 5
2. The module was easy to access, navigate, and use: 1 2 3 4 5
3. The content was clearly presented and communicated to the user: 1 2 3 4 5
4. The content flow (i.e. organization of each part, content alignment with the title headings, sections transitions, etc.) was logical: 1 2 3 4 5
5. The content was practical and relevant to institutional practice: 1 2 3 4 5
6. The module helps students achieve specified learning outcomes in PHAR 489 (Inpatient Clerkship): 1 2 3 4 5
7. If I were still a student, how likely would I have viewed this module? 1 2 3 4 5
8. Thinking back to my own rotation, and given my concerns and anxieties at the time, I feel that this module would have prepared me for my rotation mentally and emotionally: 1 2 3 4 5
9. Please comment on the level of difficulty and amount of content presented in this module.
10. Does the module address common pitfalls and areas that students most often struggle with?: If yes, how? If no, why not?
11. Given what you have seen with student pharmacists in the institutional setting, would the module help relieve student anxiety around institutional practice? If yes, how? If no, why not?
12. How would this module affect a student's performance in the institutional setting: On their first day? Throughout their clerkship?
13. Do you think the module will help decrease the workload of Practice Educators? Please explain.
14. What future content or topics would you like to see added to the module?
15. What content or topics would you like to see removed from the module?

**Table 4: Summary of Responses from Focus Group Respondents re Module 1 (n=4)**

Question	Mean Score on a 5-Point Likert Scale (n=4)	
	Part I (Orientation)	Part II (Clinical Situations)
1. If I were still a student, how likely would I have viewed this Module?	Mean = 4.00 (SD=1.41) Median = 4.50	Mean = 4.50 (SD=0.58) Median = 4.50
2. Thinking back to my own rotation, and given my concerns and anxieties at the time, I feel that this module would have prepared me for my rotation mentally and emotionally	Mean = 3.25 (SD=1.26) Median = 3.00	Mean = 3.50 (SD=1.00) Median = 3.00
3. Please comment on the level of difficulty and amount of content presented in this module	<p>This module does not appear to be very difficult. The amount of content seems reasonable.</p> <p>There is a lot of content. I think most of it is necessary though. Some of the stuff, like which kinds of IV lines is pretty higher level stuff but it doesn't hurt to expose them to this information.</p> <p>Touches on a large variety of topics, but content per topic is brief.</p> <p>The level of difficulty was appropriate as was the amount of content. There are still more issues to discuss in inpatient practice, but as a start the level was on target.</p> <p>The content was the appropriate level of difficulty for learners - provided a great introduction to inpatient care.</p>	
4. Does the module address common pitfalls and areas that students most often struggle with? If yes, how? If no, why not?	<p><b>Yes:</b></p> <p>It provides students with a good overview of inpatient practice. However, I think additional information should be added to the role of the clinical pharmacist to focus on what clinical pharmacists actually do as part of their</p>	





	<p>patient work-up to give the students an understanding of how to work up a patient and the steps in the pharmaceutical care process. The pictures in this section give the impression that a clinical pharmacist sits at a desk, which is not typically the case. I would suggest including more pictures that focus on pharmacists interacting with patients who are lying in beds to obtain a history, provide education, etc. This will help to highlight to the students that they are expected to be in the patient care area and will interacting directly with patients.</p> <p>Covers many things that i usually cover with students on 1st day.</p> <p>It helps them have a grasp of the types of things that happen in a hospital.</p> <p>The module gives a basis of understanding for inpatient practice.</p> <p>Will be helpful to introduce students to the inpatient environment. The section regarding communication skills in this setting is great. Addresses the common questions that students have, but aren't sure who to ask.</p> <p><b>No:</b></p> <p>The soft skills are not addressed, but that's what practical learning and clinical rotations are supposed to teach</p>
<p>5. Given what you have seen with student pharmacists in the inpatient setting, would the module help relieve student anxiety around inpatient practice? If yes, how? If no, why not?</p>	<p><b>Yes:</b></p> <p>I think this module will provide students with a general overview of inpatient practice. I would suggest making sure that there are pictures in the module that reflect a ward and a patient on the ward. A lot of the pictures appear to be of a pharmacist in a clinic.</p> <p>It will prepare them a little better for some things.</p> <p>It exposes them to some of the concepts before they come to the hospital.</p> <p>It does provide students with a quick overview of the inpatient setting/practice so it may decrease anxiety if the student is familiar with the terminology/jargon used.</p> <p>This will be incredibly helpful to help students better understand what they will face when they walk through the hospital doors, and thereby help reduce their anxiety. (Although they will likely still be very nervous!) It answers many of the questions that students may think are "silly" and are too afraid to ask their preceptors.</p> <p><b>No:</b></p> <p>I think there are some areas that could be more developed such as those areas that deal with therapeutics pertaining to common disease states and areas such as ID and the use of antibiotics. These are areas that would be common in community and inpatient practice.</p> <p>I think in addition to the knowledge-based pieces addressed in the modules, it's often the actual sights and sounds of an inpatient unit that can be scary for many students. i.e. what does a typical hospital unit look like? Where can they stand so they are not in the way? etc.</p>
<p>6. How would this module affect a student's performance in the inpatient setting: On their first day? Throughout their practicum?</p>	<p><b>On their first day:</b></p> <p>Save time with orientation (2h).</p> <p>Maybe more relaxed.</p> <p>This will hopefully expedite the introductory stages of inpatient rotations, and allow for the students to "hit the ground running."</p> <p>The modules give a good basis to learn more detail.</p> <p>General increased comfort with the environment, so they can start the learning process sooner (rather than having to spend the first day just acclimatizing).</p> <p><b>Throughout their practicum:</b></p> <p>It may give them a better understanding of the role of other health care professionals.</p> <p>They will be familiar with concepts/terms such as patient own med; will help their confidence.</p>



	<p>Hopefully will have to ask less questions of the preceptor. Will understand more about why things happen a certain way (example, therapeutic interchanges, etc).</p> <p>Hopefully this allows for more clinical opportunities for the student and better discussions between students and preceptors.</p> <p>This is a good informational resource for them to come back to at any point.</p>
<p>7. Do you think the module will help decrease the workload of Practice Educators? Please explain.</p>	<p>No. I think this module provides a general overview of inpatient practice. The preceptor will still need to provide them with a detailed orientation of the patient care area, including computer system, health record, how to write an order, how to write a note, how to interview a patient and the expectations around how to work-up and present a patient using a systematic approach. The students don't come to the rotation with an understanding of these skills, tools.</p> <p>Yes, by providing some orientation already.</p> <p>There may be less answering of basic questions. I think students will need more hands on experience with charts, physician notes, example computer systems, etc before they come to the site to really decrease the workload. But this is a nice start.</p> <p>If the student retains all the information, then yes. Each site will have different systems so the introductory sessions will still occur, but hopefully the time spent will be shorter.</p> <p>I am not sure if the module will decrease workload for the Practice educators (if so, only marginally), but I think that the background information that the students learn will help them get more out of the rotation by having a more solid understanding of hospital practice.</p> <p>I think it will help decrease the orientation process for preceptors.</p>
<p>8. What future content or topics would you like to see added to the module?</p>	<p>Acronyms - common pharmacy and medical acronyms. Taught in some sort of case based examples so they learn instead of memorize. Example: therapeutic interchanges where they actually process the fake order. Or perhaps have to look up in a formulary if a medication is on formulary and/or alternatives for substitution.</p> <p>More knowledge around therapeutics, especially ID [identification]. This will benefit the student in inpatient and community practice.</p> <p>Perhaps what students can expect on morning rounds - students often find morning rounds intimidating. Also, perhaps which member of the healthcare team to go to with specific questions - i.e. when to ask the physician vs. nurse vs. unit clerk? Communicating with the patient's family - when to ask the family questions vs. the patient? What to do if the family asks specific questions about the patient?</p>
<p>9. What content or topics would you like to see removed from the module?</p>	<p>I don't think you need to remove anything.</p> <p>Nothing.</p>