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## AN ALTERNATIVE EDUCATIONAL MODEL IN PHARMACY

Caldwell, D., James, M., Raja, P.

### Introduction and Background

Experiential learning plays a critical role in the training of pharmacy learners in Ontario and across Canada. Traditionally, pharmacy learners complete rotations individually, where they are assigned to work alongside a practicing pharmacist.<sup>1</sup> However, there is a growing demand for clinical placements for pharmacy learners, which cannot be sustained with this one-to-one teaching model.<sup>1</sup> Therefore, institutions and preceptors may need to utilize alternative teaching models that can accommodate these growing requirements.<sup>1,2</sup> One such model is tiered teaching, which has been used frequently in medicine, but has not yet been greatly incorporated into pharmacy education.<sup>2</sup>

Tiered teaching, also referred to as near-peer teaching or experiential peer teaching, utilizes a hierarchical system of teaching.<sup>1,2</sup> In this model, learners at a higher level

of education or clinical experience, frequently called near-peer teachers, help to teach those at a lower level while under the

supervision of a practicing clinician.<sup>1</sup> This model allows learners to train together and facilitate each other's development.<sup>3</sup> In theory, the tiered teaching model provides greater clinical exposure for junior learners, facilitates the teaching experience of senior learners, while not greatly increasing preceptor workload.<sup>1,4</sup>





## TIERED TEACHING... continued

Unfortunately, there is a paucity of literature to support the effectiveness of tiered teaching within a clinical pharmacy setting. In order for institutions and preceptors to determine if this teaching method may be beneficial to them and their trainees, a brief review of the current literature and proposed benefits and challenges are summarized below.

### Pharmacist Application

Studies reviewing tiered teaching in a clinical pharmacy setting are small, inconsistent in their teaching structure, and report largely subjective outcomes. The tiered teaching structure in pharmacy has been described in academic and research settings, however only three publications describe using the model in a clinical pharmacy area.<sup>1,4-7</sup> Each reports slight variation of the tiered teaching model, although in general, pharmacy learners at a later stage of their education mentor those less experienced.<sup>1,4</sup> Additionally, the publications describing clinical pharmacy tiered teaching report largely qualitative outcomes. The learner, resident and pharmacist preceptors' experiences with the tiered teaching model have been examined through surveys, questionnaires and informal interviews with largely positive response.<sup>4,7</sup>

Each study has reported different outcomes. Interestingly, one publication described using the model with pharmacy learners at the same stage of training with a group of students starting a

clinical rotation four weeks later than the other group.<sup>7</sup> They reported learner satisfaction with the model and an increase in pharmacist recommendations while the learners were on the unit. Of note, pharmacist preceptors reported an additional ten hours of overtime required for the tiered teaching model, compared to the previous one-to-one model.<sup>7</sup> Unfortunately, only one publication attempted to assess the quality of teaching received using the tiered teaching model by evaluating if standardized learning goals were met.<sup>1</sup> The results varied widely, with none of the learning goals having one hundred percent completion between all of the pharmacy learners. Therefore, it is evident that more research is required to determine if tiered teaching is an effective and ideal teaching method for clinical pharmacy learners.

### Advantages and Disadvantages

Several advantages and disadvantages of tiered teaching have been discussed in recent literature. Given the lack of current evidence to support the model, this list is intended to help guide clinicians and educators in assessing if tiered teaching is an appropriate model for their clinical area and pharmacy learners.

**Pro #1** – Increases the opportunity for learning

Although controversial, practicing pharmacists at an Ontario hospital report tiered teaching is a strategy that helps to reduce time commitment of

precepting learners.<sup>1,2</sup> Preceptors using a tiered-teaching model can theoretically offer more teaching opportunities for a greater number of learners during a similar amount of time that would otherwise be allotted to an individual learner in a one-on-one traditional teaching model. As a result of the theoretical reduced time commitments, adopting such a model may encourage pharmacists to precept more learners.

**Pro #2** – Provides a low-risk learning environment

The transition from didactic learning to experiential training can often be abrupt and overwhelming for pharmacy learners. Learners feel near-peer teachers are more relatable and provide more support than traditional instructors because of their closer age and experience (social congruence), and knowledge base (cognitive congruence).<sup>1,4,6,8,9</sup> Social and cognitive congruence are often listed as reasons why the tiered teaching model promotes low-risk learning environments and has subsequent perceived benefits on learner's anxiety and knowledge gains.<sup>1,4,6,9</sup>

**Pro #3** – Builds skills of near-peer teacher

Providing pharmacy students and residents opportunities to teach peers may help develop teaching and mentorship skills that are beneficial in pharmacy practice.<sup>1</sup> Additionally, as near-peer teachers often oversee multiple junior learners, they gain experience



## TIERED TEACHING... continued

triaging issues and questions, promoting the development of leadership skills.<sup>6</sup> Research on medical education has shown that individuals gain more knowledge on a topic if they teach it to others.<sup>3,10</sup> The learning benefits seen for individuals involved in teaching may be a result of increased motivation to learn the topic, or a result of deeper processing of information through reflective knowledge building.<sup>3,6</sup>

### Con #1 – Administrative challenges

One of the barriers to setting up a tiered teaching model is scheduling. Pharmacy students and residents frequently rotate through many different clinical areas and have unpredictable schedules due to many concomitant school and placement-related commitments. Thus, coordinating a tiered teaching session often requires extensive collaboration between pharmacy preceptors and various learners who are partaking in the tiered teaching model.

**Con #2** – Near-peer teachers lack clinical experience compared to traditional instructors

It is reasonable to expect senior pharmacy students and/or residents to have less clinical and practical experience than traditional pharmacy preceptors who have been practicing in a particular clinical area for a longer time. In fact, this was reported by pharmacy learners involved in tiered-teaching models as a disadvantage

to learning from student mentors compared to traditional preceptors.<sup>1</sup>

### Con #3 – Near-peer teacher anxiety

Near-peer teachers have reported increased anxiety associated with the tiered teaching model.<sup>5</sup> This may be due to the pressure of preparing for teaching sessions, the desire to master the topic, and/or feelings of inadequacy in knowledge of teaching skills. It is currently unknown if this anxiety is temporary and would resolve with more experience.

### Conclusion

Emerging research suggests that tiered teaching models may increase the number of opportunities for pharmacy experiential learning. The proposed additional benefits of this model include possibly reducing the teaching burden for pharmacist preceptors, facilitating a low-risk learning environment for learners, and helping to develop clinical teaching skills for near-peer teachers. While the potential disadvantages include teachers with a lack of clinical experience, teacher anxiety and administrative challenges. The biggest drawback of this model is that the impact of tiered teaching on the pharmacy learners' education has not been assessed. Future research should aim to evaluate the quality and accuracy of teaching received through tiered teaching compared to more traditional models.

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# CSHP PHARMACY RESIDENTS' RESEARCH NIGHT 2018

## METRO TORONTO & LAKE ONTARIO WEST CHAPTERS

The Metro Toronto & Lake Ontario West Chapters hosted their joint Pharmacy Residents' Research Night on June 20th at the Leslie Dan Faculty of Pharmacy. Seventeen residents from 8 different institutions presented their research through a facilitated 5 minute poster presentation. There were over 100 attendees, which included a mix of pharmacy students, pharmacy residents, pharmacists, and physicians. The presentations were as follows:

### ERIN BEZZINA

#### Sunnybrook Health Sciences Centre

The Antithrombotic Treatment of Patients with Atrial Fibrillation Undergoing Percutaneous Coronary Intervention (PCI)  
*Erin Bezzina, BSc, PharmD; Claudia Bucci, BScPhm, PharmD, ACPR; Artemis Diamantouros, BScPhm, MEd, PhD; Sam Radhakrishnan, MD; Shaheeda Ahmed, MDCM, FRCPC, FACC*

### VIVIAN BUI

#### Sunnybrook Health Sciences Centre

Voriconazole Prophylaxis in Leukemic Patients: A Retrospective Single Centre Study  
*Vivian Bui, B.Sc., Pharm.D.; Sandra A.N. Walker, B.Sc., B.Sc.Pharm., ACPR, Pharm.D., FCSHP; Lesley Palmay B.Sc., B.Sc.Pharm., ACPR, M.Sc.; Marion Elligsen, B.Sc.Pharm., ACPR; Anju Vyas, B.Sc.Pharm., ACPR; Romina Marchesano, B.Sc.Pharm., ACPR, M.Sc.Pharm*



Photo courtesy of Pharmakon, Leslie Dan Faculty of Pharmacy, University of Toronto



# CSHP PHARMACY RESIDENTS' RESEARCH NIGHT 2018 ... continued

## WENDY CHEN

### Hospital for Sick Children

Assessment of a Therapeutic Drug Monitoring Strategy of Once Daily Dosing of Gentamicin/ Tobramycin in Paediatric Patients

Wendy Chen, BSc, PharmD, RPh; Erin Chung, HonBSc, BScPhm, MSc, ACPR, RPh; Marina Strzelecki, BScPhm, ACPR, RPh; Sabrina Boodhan, HonBSc, BScPhm, ACPR, RPh; Annie Fecteau, MD, MSc, FRCPC; Winnie Seto, BScPhm, PharmD, MSc, ACPR, RPh

## ERIN CICINELLI

### University Health Network

Preceptor Experiences with Novel Student-Preceptor Models in Pharmacy Education: A Qualitative Analysis

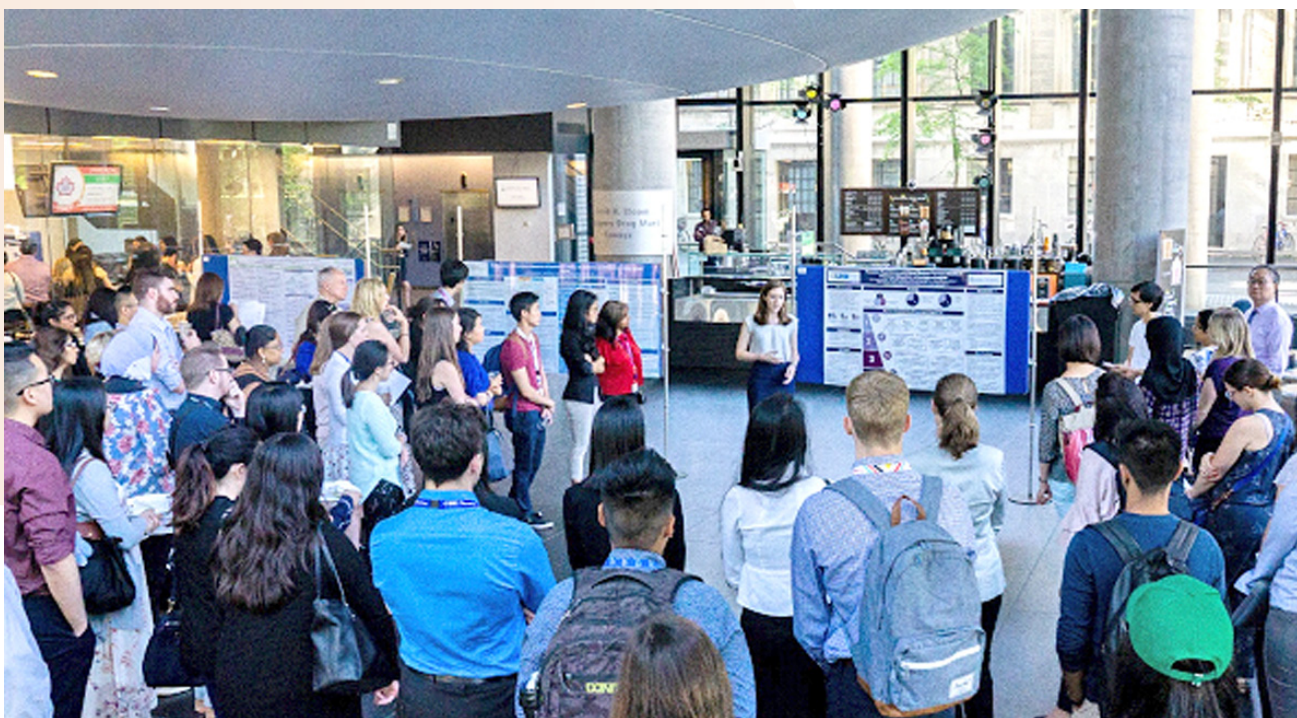
Erin Cicinelli, BScH, PharmD; Kori Leblanc, BScPhm, PharmD; Karen Cameron, BScPhm; Olavo Fernandes, BScPhm, PharmD; Caitlin McIntyre, BScH, PharmD; Aleksandra Bjelajac Mejia, BScPharm, PharmD; Cindy Natsheh, BScPhm, PharmD

## AMANDA DHAWAN

### Trillium Health Partners

Investigation of the Average Duration of Dual Antiplatelet Therapy in Hemodialysis, Peritoneal Dialysis and Pre-dialysis Patients

Amanda Dhawan, PharmD; Rose Liao, BScPhm, PharmD, ACPR



Pictured: Erin Cicinelli presenting her poster at the Leslie Dan Faculty of Pharmacy



# CSHP PHARMACY RESIDENTS' RESEARCH NIGHT 2018 ... continued

## **MONIQUE EISA**

### **Sinai Health System**

DepRescribing psychoActive MedicATions in the ICu (DRAMATIC): A retrospective chart review

*Monique Eisa, PharmD; Najla Tabbara, PharmD; Alexandra Cheung, PharmD; Natalia Persad, BScPhm; David Williamson, PhD; Jonathan F Mailman, PharmD; Lisa Burry, PharmD*

## **JANICE LAW**

### **William Osler Health System**

Assessing the Impact and Feasibility of Performing Pharmacist Intervention Related to Vancomycin Dosing and Monitoring: A Pilot Program

*Janice Law, BScH, PharmD; Ehsan Haghshenas, BScPhm, ACPR; Cinzia Briganti, BScPhm; Anoop Mrar, BScPhm; Hina Marsonia, BScPhm, PharmD; Ramona Romani, BScPhm*

## **BROOKE LIPMAN**

### **Sunnybrook Health Sciences Centre**

Development, Implementation and Assessment of a "Direct Oral Anticoagulant (DOAC) Monitoring Checklist" in Ambulatory Pharmacy Practice

*Brooke Lipman, BSc, PharmD, RPh; Artemis Diamantouros, BScPhm, MEd, PhD; Claudia Bucci, BScPhm, PharmD, ACPR; Karen Lam, BScPhm, RPh, CGP*





## CSHP PHARMACY RESIDENTS' RESEARCH NIGHT 2018 ... continued

### RACHEL LIU

#### University Health Network

Antimicrobial Guideline Concordance is Low in Cancer Patients with Febrile Neutropenia Admitted to General Internal Medicine at an Academic Hospital  
*Rachel Liu, PharmD; Melissa Gitman, MD, FRCPC; Sandra Porter, BScPhm; Paul Bunce, MD, FRCPC; Peter Cram, MD, MBA; Andre Schuh, MD, FRCPC; Chaim Bell, MD, FRCPC, PhD; Shahid Husain, MD, MSc; Mark McIntyre, PharmD, ACPR; Andrew Morris, MD, FRCPC, SM(Epi); Miranda So, BScPhm, PharmD*

### ELAINE MARTIN

#### Trillium Health Partners

Prevalence of asymptomatic bacteriuria in inpatients at Trillium Health Partners with low urine culture colony counts  
*Elaine Martin, PharmD; Liliانا Yonadam, RPh; Christopher Graham, MD*

### ASHLEY MORRISON

#### Centre for Addiction and Mental Health

Medication-Related Patient Outcomes Following Discharge  
*Ashley Morrison, RPh, PharmD, Beth Sproule, RPh, BScPhm, PharmD; Elnaz Haddadi, RPh, BScPhm, PharmD; Noreen Jamal, RPh, BScPhm; Ashley Morrison, RPh, PharmD*

### KOMAIL NADEEM

#### Hospital for Sick Children

Clinical Decision-Making Following Asparaginase Activity Monitoring in Children with ALL: a Single-Centre Retrospective Review  
*K. Nadeem BScH, PharmD, RPh; D. Colantonio PhD, DABCC, FCACB; A. Naqvi MBBS, DCH, MCPS, MRCP; J. Hitzler MD; J. Whitlock MD; L.L. Dupuis RPh, ACPR, FCSHP, PhD*

### JASPREET NIJJAR

#### University Health Network

An Evaluation of the Anticoagulation Management Training Program for Toronto Western Family Medicine Residents  
*Jaspreet Nijjar, PharmD; Patricia Marr, BScPhm, PharmD; Debbie Kwan, BScPhm, MSc; Christine Pappoushek, PharmD; Diana Toubassi, MD, CCFP*

### SAMANTHA POLITO

#### University Health Network

Evaluation of a Patient Self Medication Program in Allogeneic Hematopoietic Stem Cell Transplantation  
*Samantha Polito, BSc, PharmD; Lina Ho BScPhm, ACPR; Ian Pang BMSc, MSc, BScPhm, ACPR; Celina Dara BScPhm, PharmD, ACPR; Auro Viswabandya, MD*



# CSHP PHARMACY RESIDENTS' RESEARCH NIGHT 2018 ... continued

## JESSICA RAGAZZO

### University Health Network

Development and Validation of a Uremic Pruritus Algorithm in Patients with Chronic Kidney Disease (CKD) and End Stage Kidney Disease (ESKD)

*Jessica Ragazzo, PharmD; Annemarie Cesta, BScPhm, ACPR; S. Vanita Jassal, MD, FRCPC; Marisa Battistella, BScPhm, PharmD, ACPR*

## TIANA TILLI

### St. Michael's Hospital

Opioid Stewardship: Implementing Pharmacist Led Assessments for Patients Co-Prescribed Opioids and Benzodiazepines at an Academic Family Health Team

*Tiana Tilli PharmD; Tara Kiran MD, MSc; Norman Dewhurst PharmD; Jonathan Hunchuck PharmD*

## AMY BINGJIE WANG

### Trillium Health Partners

A Retrospective Cross-sectional Study Evaluating Beta-lactam Allergy Labeling in Hospitalized Patients

*Amy Bingjie Wang, RPh; Liliana Yonadam, RPh; Christopher Graham, MD*





# CSHP ONTARIO BRANCH ANNUAL GENERAL MEETING AND EDUCATION SESSIONS

**NOVEMBER 17, 2018**

The 70th Annual CSHP Ontario Branch Annual General Meeting and Education SESSIONS will take place from 8:00 a.m. - 5:15 p.m.

The Annual Conference will be held at the Leslie Dan Faculty of Pharmacy at the University of Toronto.

On behalf of the CSHP Ontario Branch Education Committee, we are excited to present the 70th Annual General Meeting (AGM) and Educational Sessions!

The Education Committee has been very dedicated over the last year in developing a program with topics covering a range of specialties and issues relevant to hospital and primary care pharmacy practitioners. We have an exciting lineup of presentations and workshops this year offering speakers with strong expertise in their clinical areas.

Topics cover a range of specialties and issues relevant to hospital and primary care pharmacy practitioners. New this year is a variety of workshop options for you to tailor your learning! In the afternoon, we have specific workshops in hospital care, leadership and primary care for you to select.

We hope that you are able to take full advantage of the educational value and networking opportunities at our 2018 Conference. We look forward to welcoming you to another exciting event! Thank you for your ongoing support of CSHP!

[Click here  
2018 program](#)

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# CSHP ONTARIO BRANCH ANNUAL GENERAL MEETING

## THANK YOU TO OUR SPONSORS



# 2018 70TH ANNUAL CSHP ONTARIO BRANCH CONFERENCE AWARDS BANQUET

**NOVEMBER 17, 2018**

The University Club of Toronto

Reception:  
5:30 p.m. - 7:00 p.m.

Dinner & Awards:  
7:00 p.m. - 10:00 p.m.

The Annual Conference will be held at the Leslie Dan Faculty of Pharmacy at the University of Toronto.

The CSHP Ontario Branch Awards Banquet honouring and recognizing your deserving colleagues in Hospital Pharmacy and Collaborative Care settings will be held at the University Club of Toronto located at 380 University Avenue.

The Awards Banquet will begin with a reception in the Library from 5:30 p.m. – 7:00 p.m. followed by a buffet dinner and award presentations from 7:00 p.m. – 10:00 p.m. We look forward to honouring the efforts of your fellow hospital pharmacists throughout this past year.

Be sure to join us for networking, dinner, and the presentation of the CSHP Ontario Branch 2018 Awards.

# [ CSHP ONTARIO BRANCH AWARDS BANQUET ]

THANK YOU TO OUR SPONSORS

## STERI**MAX** INC.



# ImPACT NETWORKING SESSION

**NOVEMBER 17, 2018**

University of Toronto  
5:15 p.m. - 7:00 p.m.

Leslie Dan Faculty of Pharmacy at the  
University of Toronto  
Room 1210.

The Ontario Primary Care Team Pharmacists (ImPACT) is the group for pharmacists who work in organized primary care team settings including Family Health Teams, NP led clinics or similar team-based structures. ImPACT has over 170 members and carries out advocacy, research, communication to showcase the value of pharmacists working in primary care teams.

ImPACT is pleased to host a special networking session as part of the CSHP OB conference. We encourage pharmacists working in primary care teams or those interested in more about primary team based care to participate in the networking session. **Be sure to indicate your intention to attend when you register for the Conference.**

For more information, please contact Michael Pe at: [pharmacist@carolinefht.ca](mailto:pharmacist@carolinefht.ca).



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