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# PORT-A-CATH: A DRUG DELIVERY SYSTEM

When considering the various methods for administering medications to patients one cannot overlook the benefits associated with the Port-a-Catheter (Port-a-Cath) a subcutaneous central venous catheter. The Port-a-Cath or Implantable Venous Port is placed on the right side of the chest allowing medications direct access to the heart. This method of drug delivery is particularly useful for patients receiving chemotherapy.

Made of plastic or a small metal disk the port is connected to a catheter that is inserted into the superior vena cava with entry to the right atrium. The insertion of a Port-a-Cath can be done under general or with local anesthesia.<sup>1</sup>

The port is located under the skin and is accessed using a special needle called a Huber needle. The Huber needle is inserted into the port to administer the IV medications; this completely eliminates the need to locate veins and prevents any bruising at possible injection sites.<sup>2</sup> The Port-a-Cath can also be used to draw blood.

Patients receiving chemotherapy are particularly familiar with the intravenous method. A chief complaint when receiving chemotherapy intravenously is discomfort to the patient. Sitting for hours with a needle inserted into their vein is less than ideal. Traditional open catheters can disrupt patients' daily routines with their meticulous care. Whereas the Port-a-Cath is placed inside the body and blocked from the outside world, patients can enjoy activities such as swimming without having to worry about their port.<sup>1</sup> Patients with poor venous access, renal replacement therapy, hemodynamic monitoring, chemotherapy or vasopressors benefit the most from this device have.

The Port-a-Cath has many other benefits: less needle sticks, limited home care, limited restriction of activities, and easier administration of intravenous medications.

Some of the challenges associated with this drug delivery method include infections at the port site and blockages or clots to the catheter.<sup>3</sup> Patients should



Kelsey-Ann Prior

monitor the area for any bruising, redness, or inflammation. There should be no pain at the port site. If signs of infection occur a doctor must be notified immediately.

It is important to know that the Port-a-Cath does not eliminate all pain. Since the port is located beneath the skin, when the Huber needle is inserted the patient will still feel the stick of a needle. Local anesthetic creams are often used to numb the area. After the needle is inserted a dressing is used to cover and shield it. Medication will then move from the needle into the port, through the catheter, and into the bloodstream.<sup>1</sup>

Intravascular catheters are not a new drug delivery system; they have been used since the 1950's. However with



## [ PORT-A-CATH: A DRUG DELIVERY SYSTEM ... continued ]

advancements in oncology, nephrology, and parenteral nutrition, strides in the improvement of intravascular catheters have come a long way. By 1982 fully implantable ports were being used for chemotherapy replacing the need for central venous catheters. This advancement allowed ports to be surgically implanted subcutaneously.<sup>5</sup>

When it comes to drug delivery options the Port-a-Cath is an innovative system that allows ease as well as freedom to patients. With its many patient benefits it is clear to see that the Port-a-Cath has a large roll in the wellness and therapy of many people.

### Work Cited

1. Central venous catheter. Canadian Cancer Society. <http://www.cancer.ca/en/cancer-information/diagnosis-and-treatment/tests-and-procedures/central-venous-catheter/?region=on>. Accessed March 1, 2018.

2. How Is Chemotherapy Given. Chemocare. <http://chemocare.com/chemotherapy/what-is-chemotherapy/how-chemotherapy-is-given.aspx>. Accessed March 1, 2018.

3. Alan H, David C. Overview of central venous access. UpToDate. [https://www.uptodate-com.proxy.lib.uwaterloo.ca/contents/overview-of-central-venous-access?search=port%20a%20catheterization&source=search\\_result&selectedTitle=1~150&usage\\_type=default&display\\_rank=1#H3103243](https://www.uptodate-com.proxy.lib.uwaterloo.ca/contents/overview-of-central-venous-access?search=port%20a%20catheterization&source=search_result&selectedTitle=1~150&usage_type=default&display_rank=1#H3103243). Updated October 24, 2017. Accessed March 2, 2018.

4. Catheters and Ports in Cancer Treatment. *ASCO Cancer.Net*. <https://www.cancer.net/navigating-cancer-care/how-cancer-treated/chemotherapy/catheters-and-ports-cancer-treatment>. Published November 2016. Accessed March 2, 2018.

5. David L, Yanyun W. Implantable vascular access devices – past, present, and future. *Transfusion*. 2018;58(S1):545-548. <http://onlinelibrary.wiley.com.proxy.lib.uwaterloo.ca/doi/10.1111/trf.14485/full>. Published February 14, 2018. Accessed March 2, 2018.

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# facebook

## CSHP ONTARIO BRANCH IS NOW ON FACEBOOK

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# Best Evidence Exchange Roadshow

## NORTHWESTERN CHAPTER UPDATE

### PROVIDING CME'S IN RURAL NORTHWESTERN ONTARIO

You may think of BEER as a fermented yeast beverage that pairs well with wings, but BEER is also the acronym for a continuing medical education (CME) academic detailing project entitled “Best Evidence Exchange Roadshow”.

Thunder Bay Regional Health Sciences Centre is a 395-bed tertiary acute care facility serving the city of Thunder Bay and much of Northwestern Ontario. Two of our CSHP members, Courtney Penk, and Angela Heintzman (pictured) have been working hard to support the initiative, delivering relevant, evidence-based prescribing information to a wide audience of doctors, nurse practitioners, and medical learners across Thunder Bay and numerous community hospital and primary care sites. The modules focus on key health issues affecting the North, such as diabetes, obesity, and COPD. These free CME-accredited sessions were originally designed by Dr. Mike Allan’s “Evidence Based Medicine Research Group” (now renamed PEER) based out of the University of Alberta.

The pilot program is organized by two family physicians in Marathon, ON, Dr. Eli Orrantia and Dr. Ryan Patchett-Marble. Funding is provided by the Northern

Ontario Academic Medicine Association (NOAMA) Academic Funding Plan (AFP) Innovation Fund. In its first year, the program has been successful, with over twenty presentations delivered to small groups of medical learners and practitioners.

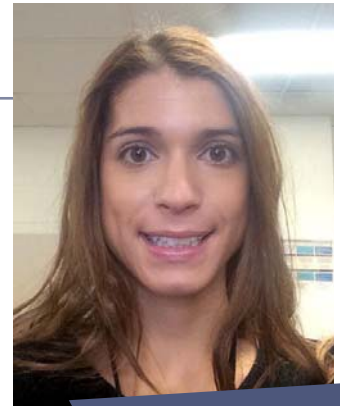
“This educational outreach on evidence based prescribing is especially valuable to and appreciated by those in rural and remote communities of Ontario’s North West”, says Dr. Orrantia. “..In these regions ready access to such continuing medical education is not easily had.”

What do our pharmacists say? “As we leave a site, we are hearing ‘Please come back!’” No alcoholic beverages or industry funding required!

For more information, visit the web page [www.beercme.site](http://www.beercme.site) or contact the Northwestern Chapter Chair at [maria.marchese@mail.utoronto.ca](mailto:maria.marchese@mail.utoronto.ca)

Submitted March 14, 2018

**Maria Marchese,**  
Chapter Chair,  
North Western



Maria Marchese



CSHP members, Courtney Penk, and Angela Heintzman. Thunder Bay Regional Health Sciences Centre, a 395-bed tertiary acute care facility serving the city of Thunder Bay and much of Northwestern Ontario.

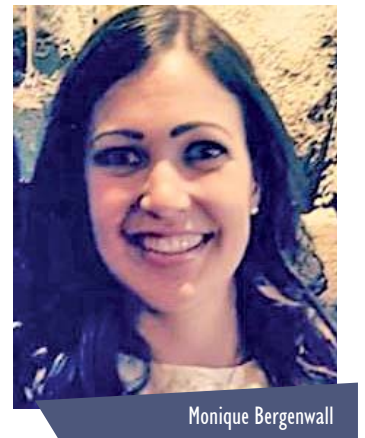


# PRIMARY CARE CORNER

BY CSHP OB PRIMARY CARE CO-CHAIRS  
SAMMU DHALIWALL AND MONIQUE BERGENWALL



Sammu Dhaliwall



Monique Bergenwall

**A**cross Canada, there are a multitude of pharmacists who work in collaborative healthcare settings outside of hospitals, such as Family Health Teams, Community Health Centres, Nurse-Practitioner Led Clinics, Long-Term Care Facilities and more! CSHP Ontario Branch recently identified the need to advocate for this specific pharmacist subset, and in 2017, became the first CSHP Branch to create a Primary Care Council position. This exciting new position is currently co-chaired by Monique Bergenwall and Sammu Dhaliwall.

Monique and Sammu are available to answer any questions that members may have about their practice, and how CSHP can best support them. They are also involved in advocacy initiatives that are most pertinent to primary care pharmacists, and help to respond to consultations relevant to ambulatory care matters. New for 2018, Monique and Sammu will be actively involved in helping to identify topics for the education program at the annual CSHP-OB AGM.

For this edition, Monique and Sammu have chosen to highlight an impactful initiative conducted by pharmacists at the North York Family Health Team.

One of the pharmacists involved in this program is long-standing CSHP member Christine Truong. The pharmacists, along with the social workers, implemented a 2 phased insomnia program focused on elderly patients. The program intended to decrease the use of addictive sedative agents which have been repeatedly associated with an increased risk of falls and dementia.

In the first phase, the pharmacist conducts an individualized patient assessment and implements a tapering program, with follow-up, to wean the patient off their sedative hypnotic. The second phase involves cognitive behavioral therapy to further support non-pharmaceutical methods of improving sleep. The collaborative efforts by the pharmacists and social workers at this Family Health Team enabled 75% of patients seen to successfully reduce their usage of sedative agents. Furthermore, 20% of patients seen stopped sedative hypnotic use altogether.

The work done by this group of pharmacists and social workers was significant and garnered them the Bright Lights Award in 2017 from the Association of Family Health Teams of Ontario.

Link to Bright Light Awards page:  
[www.afhto.ca/highlights/announcing-the-bright-lights-2017-award-winners/](http://www.afhto.ca/highlights/announcing-the-bright-lights-2017-award-winners/)

[www.afhto.ca/wp-content/uploads/2017-BL-Theme-Winner-Profile-Theme-7.pdf](http://www.afhto.ca/wp-content/uploads/2017-BL-Theme-Winner-Profile-Theme-7.pdf)



## PRIMARY CARE CORNER... continued



Congratulations to these primary care pharmacists from left to right we have: Eric Lui, Christina Truong, and Rita Ha.

## CSHP EXCELLENCE IN HOSPITAL PHARMACY PROGRAM

### 'DECLARATION OF COMMITMENT'

The CSHP Excellence in Hospital Pharmacy program is an initiative to engage and assist members in providing innovation and excellence in patient care. The Excellence committee is requesting members take our 'Declaration of Commitment', which shows support of this initiative and dedication to incorporating the Excellence program into everyday practice of pharmacy team members across Canada. By signing the declaration, members also commit to promoting the role of the pharmacy team in excellent patient care to other health care providers as well as patients and families. Individual certificates will be emailed to members who sign the declaration, which can then be printed and displayed. The declaration is available electronically at: <https://www.cshp.ca/excellence-declaration-form>





# CONTINUING EDUCATION WORKING GROUP

CSHP OB has been looking at opportunities to provide certification programs as a means to support continuing education for members and the public. A working group has been struck to review the suggestions that have been identified through a review of the literature and available programs. In order to create a meaningful continuing education opportunity, we are looking to invest in a program that is currently not available through other organizations.

This working group will report back to Branch Council with a recommendation on the program that would be best to pursue.

To members interested in being a part of this Task Force, please contact Anne Stacey at [astacey@cs hp.ca](mailto:astacey@cs hp.ca)





# [ MENTORS MAKING A DIFFERENCE ]

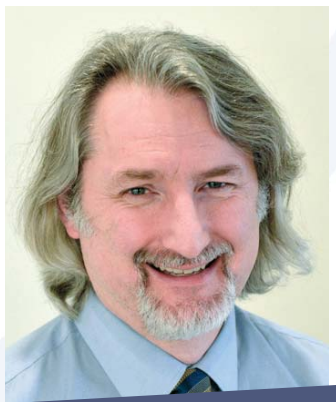
## ALLAN MILLS

**DIRECTOR OF PHARMACY, TRILLIUM HEALTH PARTNERS, MISSISSAUGA, ON  
ASSISTANT PROFESSOR (STATUS), UNIVERSITY OF TORONTO, TORONTO, ON**

Submission By: Christine Peragine

It is my pleasure to recognize Dr. Allan Mills as a Mentor Making a Difference! Allan is a true Pharmacy Leader. He is a clinical leader in the field of geriatric pharmacotherapeutics who is spearheading the development of a novel, advanced-level pharmacy training program in Canada (i.e. an accredited Advanced [Year 2] Pharmacy Residency Program). He is an innovative practice leader who manages a team of over 215 pharmacists and pharmacy technicians and has significantly advanced and expanded the scope of pharmaceutical care at Trillium Health Partners. He is an academic leader who has enhanced the education of hundreds of pharmacy learners by lecturing and precepting with the University of Toronto for over 20 years.

Most importantly, however, Allan is a personal mentor and a leading role model for the pharmacist I aspire to be. He is a true champion for patients, pharmacy practitioners, and the profession. He has provided support and encouragement throughout my pharmacy career, and I am delighted to have this opportunity to publicly thank him during Pharmacy Awareness Month for all the time, assistance, and inspiration he has provided! Thank you, Allan!



Allan Mills





# MENTORS MAKING A DIFFERENCE... continued

## LAURA MARIE TSANG

CLINICAL PHARMACIST  
SUNNYBROOK HEALTH SCIENCES CENTRE

Submission By: Cheyenne Matinnia

Laura is a clinical pharmacist at Sunnybrook Health Sciences Centre. She is the primary pharmacist on the cardiovascular intensive care unit (CVIVU). She is one of the 2015 APPE Preceptor of the Year Award Winners at the Leslie Dan Faculty of Pharmacy and also has published an article on teaching models for pharmacy students (2013).

Laura was my preceptor for the summer of 2017 at Sunnybrook Health Sciences Centre. From the moment I met Laura, I felt close to her. If you walk into CVICU on any given day and see Laura, you can see the connection she is able to make with people. Laura has an excitement and enthusiasm for learning that is contagious to anyone around her. She made me excited about learning. They say that it is not what people say that you remember, but how they make you feel, and Laura always made me feel at home and welcomed. She helped encourage me in my work, whether it was working up complicated patients or starting to do solo BPMHs for the first time. As my preceptor, Laura was very aware of my needs, even if I hadn't voiced them! She was aware of what questions I may have, what my level of knowledge was,

and she also knew my areas of interest. She went above and beyond to make my placement special and unique by giving me opportunities to challenge myself and participate as a member of the inter-professional health care team. Laura never made me feel like a student; she made me feel confident and, most importantly, she made me feel like I belong. She is someone that I continue to look up to today, and I hope that if I am a preceptor in the future I can give another student that same memorable experience. Laura gave me confidence in my own abilities and made me feel like I can tackle any task that I put my mind to, and I can never thank her enough for that.



Laura Marie Tsang

## MENTORS MAKING A DIFFERENCE... continued

### LAWRENCE JACKSON

PHARMACY CLINICAL COORDINATOR, VETERANS CENTRE  
SUNNYBROOK HEALTH SCIENCES CENTRE, TORONTO

Submission By: Olivia Ng

As the Pharmacy Clinical Coordinator of the Veterans Centre at Sunnybrook Health Sciences Centre, Lawrence (Larry) Jackson provides clinical pharmacy services to complex continuing care and palliative care. He is responsible for pharmacy education and practice based research activities in the Veterans Centre on behalf of the Pharmacy Department and offers an elective rotation for pharmacy residents. He is the Chair of the Veterans Centre Interprofessional Rounds Planning Committee, which plans continuing education lecture series on a regular basis. He is also involved in several other committees, including the Student Experience Committee and IPE Structured Placement Committee.

Larry is also an Adjunct Professor at the Leslie Dan Faculty of Pharmacy, University of Toronto. He provides numerous lectures and seminars, including asthma/COPD and geriatric assessment. He is a role model and mentor for pharmacy students on clinical rotations and is actively involved with the International Pharmacy Graduate (IPG) Program. Outside the Faculty of Pharmacy, Larry provides mentorship to students of other University of Toronto Faculties including the Faculty of Physiotherapy, Faculty of

Medicine and with the Interfaculty Pain Curriculum.

As a pharmacy student, I first learned about asthma/COPD through Larry's lecture at the Leslie Dan Faculty of Pharmacy, University of Toronto. His lecture was stimulating and is one of the lectures that sticks with me to this very day, several years into practice as a pharmacist. The future of my pharmacy career was changed the moment I was matched to Larry for my fourth-year hospital rotation. Prior to, during and after this rotation, Larry was always a strong mentor who was instrumental in providing the guidance a pharmacy student needed to transition successfully into a hospital pharmacist position. During my rotation, my interest for respirology grew under his guidance, and as we kept in touch after our rotation, Larry introduced me to the Ontario Lung Association (OLA), which he continues to be an active volunteer for. He encouraged me to network and take on leadership roles, both within OLA and in other capacities, including at CSHP. Shortly after graduating from pharmacy school, I transitioned into a clinical hospital pharmacist role, specializing in respirology. I attest this success largely to Larry's mentorship.



Lawrence Jackson

Larry has won countless mentorship and teaching awards, including the Allan Knight Lifetime Achievement in Teaching Award at Sunnybrook Health Sciences Centre in 2017. Despite Larry's busy roles as Pharmacy Clinical Coordinator and Adjunct Professor, Larry stands out with the time and energy he places in his students and mentees, creating an engaging and open environment for communication. I am very grateful for having met Larry early in my pharmacy career, and look forward to continuing to learn from him as one of my biggest role models.



# MENTORS MAKING A DIFFERENCE... continued

## SANDY WALKER

CLINICIAN SCIENTIST AND ANTIMICROBIAL STEWARDSHIP/  
INFECTIOUS DISEASES LEAD, SUNNYBROOK HEALTH SCIENCES CENTRE

## SCOTT WALKER

DIRECTOR OF PHARMACY, SUNNYBROOK HEALTH SCIENCES CENTRE

Submission By: Miranda So

Sandy is the driving force behind the antimicrobial and infectious diseases pharmacy practice at Sunnybrook (SB). As clinician scientist, she creates, supervises and supports countless pharmacy practice research projects that made an impact on patient care. As the Antimicrobial Stewardship/ Infectious Disease Lead, Sandy provides excellent guidance to her team, learners, and other clinicians, who in turn, strive to provide the best possible antimicrobial management for patients!

As the Director of Pharmacy, Scott's leadership benefits pharmacy practitioners both within and beyond the four walls of Sunnybrook. Scott contributes to the evaluation of medication use locally, provincially, and nationally by sharing his expertise with several healthcare policy authorities and organizations, including the Ontario Ministry of Health, and Health Canada. In Scott's previous role as the Coordinator of Quality Control and Research, his numerous publications on the stability and compatibility of medications have practical implications

– research that pharmacists can apply in caring for their patients!

As a team, Sandy and Scott mentored countless learners and advanced practitioners. They showcase the highest level of intra- and inter-professional collaboration, supporting trainees and producing impactful research. As an Undergraduate Pharmacy student at the Leslie Dan Faculty of Pharmacy (University of Toronto), I have been taught by both Scott and Sandy, and can fondly recall their diligent efforts to help students learn. However, I came to truly appreciate their excellence when I was a Doctor of Pharmacy student during my respective rotations with Sandy (Infectious Diseases), and then Scott (Research). Their fund of knowledge, inquiring minds, humility, limitless patience and encouragement make me want to be like them “when I grow up”! Sandy encouraged me to pursue my interests in infectious diseases, and Scott made me realize that my “research” was of value, and should be shared with other pharmacy practitioners (e.g. at CSHP PPC). To me, that is the hallmark of



Sandy Walker



Scott Walker

strong mentors, and their successes and attributes are what I strive to accomplish in my practice every day. Scott and Sandy just announced that they will be retiring this year – all the more reason for me to offer my token of appreciation for their pioneering work and mentorship, and to celebrate their illustrious careers in hospital pharmacy.



# CSHP-ONTARIO BRANCH HOSPITAL PHARMACY MANAGEMENT SEMINAR (OHPMS)

THIS ANNUAL EDUCATIONAL EVENT IS TARGETED TO PHARMACISTS AND PHARMACY TECHNICIANS IN CURRENT OR EMERGING LEADERSHIP ROLES.

Pharmacy Directors, Pharmacy Managers, and Pharmacy Technicians in Management roles gather each Spring to network and participate in our educational programming.

The 2018 Seminar will be held at Deerhurst Resort in Huntsville from

Sunday, June 3 to  
Monday, June 4, 2018.



2018 Program, see graphic >>>.

## Registration and Information

[Click here for printable pdf registration form](#)

[Click here for on-line registration](#)

[Download the FK Travel grant information and expense claim form](#)



Canadian Society of  
Hospital Pharmacists



Société canadienne des  
pharmaciens d'hôpitaux

**CSHP Ontario Branch  
Ontario Hospital Management Seminar (OHPMS)**  
Sunday, June 3 - Monday June 4, 2018 Deerhurst Resort, Huntsville ON

      	<p><b>Sunday, June 3, 2018</b></p> <p>1200 - 1300 <b>Registration &amp; Lunch</b> <i>Peninsula Room</i></p> <p>1300 - 1430 <b>Leadership &amp; Understanding the DNA of Generation Y</b> <i>Dr. Karyn Gordon, Leading Relationship Expert &amp; Media Personality</i> <i>Waterhouse Ballroom 1-3</i></p> <p>1430 - 1500 <b>Break</b></p> <p>1500 - 1600 <b>Opioid Stewardship: Dissecting Diversion</b> <i>Patricia Mosnio, Regional Director of Pharmacy, William Osler Health System, CWLHIN Home and Community Care, Headwaters Health Care Centre</i> <i>Waterhouse Ballroom 1-3</i></p> <p>1600 - 1630 <b>Break</b></p> <p>1630 - 1730 <b>Hospital Pharmacy in Canada 2016/2017 Report</b> <i>Allan Mills PharmD, FCSHP, Director Pharmacy Services, Trillium Health Partners</i> <i>Waterhouse Ballroom 1-3</i></p> <p>1730 - 1900 <b>Free Time</b></p> <p>1900 - 2000 <b>Dinner</b> <i>Eclipse Dining Room</i></p> <p>2000 - 2400 <b>Reception and Networking (CASH BAR)</b> <i>Ratunda</i></p> <p><b>Monday, June 4, 2018</b></p> <p>0700 - 0830 <b>Breakfast</b> <i>Eclipse Dining Room</i></p> <p>0830 - 1000 <b>Sterile Compounding Facilities Panel: Site Specific Best Practices</b> <i>Facilitator: Edith M. Rolko, BScPhm, Director of Pharmacy, NYGH</i> <i>Deborah Emery, B.Sc.Pharm, RPh, Pharmacist, Thunder Bay Regional HSC</i> <i>Deo Bahadur, Manager, Humber River Hospital</i> <i>TBC</i> <i>Waterhouse Ballroom 1-3</i></p> <p>1000 - 1030 <b>Break &amp; Check Out</b></p> <p>1030 - 1200 <b>Beyond Use Dating: Wading through the Weeds</b> <i>Scott Walker, Director of Pharmacy, Sunnybrook Health Sciences Centre</i> <i>TBC</i> <i>Waterhouse Ballroom 1-3</i></p> <p>1200 - 1215 <b>Closing Remarks</b> <i>Waterhouse Ballroom 1-3</i></p> <p>1215 - 1315 <b>Lunch</b> <i>Eclipse Dining Room</i></p> <p>1315 - 1500 <b>Open Mic Session</b> <b>Facilitators:</b> <i>Debra Merrill BScPhm, PharmD, Director, Pharmacy Program, Royal Victoria</i> <i>Regional Health Centre</i> <i>Edith M. Rolko, BScPhm, Director of Pharmacy, NYGH</i> <i>Waterhouse Ballroom 1-3</i></p>
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On behalf of the  
CSHP Ontario Branch Education Committee

[ **SAVE THE DATE!** ]

## FOR THE CSHP ONTARIO BRANCH ANNUAL GENERAL MEETING AND EDUCATION CONFERENCE

**NOVEMBER 17, 2018**

The 70th Annual CSHP Ontario Branch Annual General Meeting and Education Conference will take place this fall on **Saturday, November 17**, followed by our Awards Night.

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

Once again the Education Committee members are striving to bring you exciting educational sessions and valuable workshops. Please save the date and be on the lookout for our brochure which will be coming out soon.

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Vivian Law and Suzy Badr  
Co-Chairs, Education Committee  
Ontario Branch CSHP



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## HOSPITAL PHARMACY IN ONTARIO

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