

Volume 18, Issue 2 2016-2017

MONOGRAPH

The Voice of the Pharmacy Student



UNIVERSITY OF TORONTO
LESLIE DAN FACULTY OF PHARMACY

Hi Pharmacy!

Welcome to Issue 2 of the Monograph! We hope your midterms didn't take too much out of you because finals are just around the corner! Hopefully the articles contained in this issue can help get you through the rest of the semester!

We are very pleased to announce the success of the Sudoku Challenge Contest from the last issue! Thank you for participating!

The winners were:

- Cassandra Zhao
- Jessie Tong

We've decided to do something a little different for this issue. Given all our tests and assignments, we thought to bring you a break from it all with a Colouring Challenge! I'm sure you've seen those adult colouring books at bookstores. Well, we've asked our local PB talent Chelsea Geen of 1T8 to design us a Harry Potter/ Fantastic Beasts and Where to Find Them - inspired drawing for you to colour!

So colour away! Tear out the page and submit your final product to the Monograph Box (polka-dot box) on the Monograph Stand in front of PB150. One submission per student is allowed.

Chelsea herself will select her two favourites and those students will receive a \$5 gift card to Starbucks! Winners will be announced on Facebook.

We hope you enjoy this issue, and have an excellent winter break! See you back in January!

Naomi Lo and Natalie Ternamian

The Monograph could not be brought to you without the hard work of the following individuals:

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1T8 Representative	Brett Hevenor
1T9 Representative	Vaishali Sriprathap
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An army of dedicated Staff Writers

... and you, for reading the Monograph :)

November-December 2016

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Follow the QR link to access the new Monograph webpage!

ADVERTORIAL- Johnson and Johnson |AD A New Option: Combination Nicotine Replacement Therapy for Smoking Cessation

Sponsored by Johnson & Johnson

The Impact of Smoking and Intervention

Despite efforts to reduce smoking in Canada, about 4.2 million Canadians (14.6% of the population) continue to smoke, with most being daily smokers (10.9%).¹ Smokers do however, remain motivated to quit smoking, with about two thirds of smokers reporting that they were seriously considering quitting in the next six months and 30% considering quitting in the next month.¹ Further, one-half of smokers had tried to quit in the past year, with one-third having tried more than once.¹ Typically, without assistance or support from a healthcare provider (HCP), less than 2% of smokers will manage to stop smoking and remain smoke-free over the course of a year.¹ Advice to quit smoking from a HCP can increase the chances of a smoker engaging in a quit attempt and with behavioural support and pharmacotherapy, quit rates at one-year can increase considerably.⁴ Pharmacists offer a convenient location, a high level of trust and a familiarity with drug therapy so are uniquely positioned to make a difference to smokers.

Why Quitting is so Difficult

When individual smokes, plasma nicotine levels will vary according to consumption of nicotine throughout the day, producing a pattern that is reflective of a background nicotine level with additional nicotine levels peaking immediately following consumption.⁶ The poor success with smoking cessation unassisted with pharmacotherapy ("cold turkey") or other forms of support relates to the addictive nature of nicotine. When nicotine levels decrease, symptoms of withdrawal (irritability, difficulty concentrating, feeling anxious and restless, cravings) can occur quite quickly, which are distracting, unpleasant and stressful to experience and reinforce the desire to continue to smoke.⁹ The discomfort created by withdrawal, however, can be rapidly relieved simply by smoking. These withdrawal symptoms are a strong source of motivation to continue smoking, making quitting quite challenging.⁹

Combination Nicotine Replacement Therapy (NRT)

Combination NRT typically refers to the simultaneous use of more than one format of NRT, generally a nicotine patch used in conjunction with an oral NRT product such as a gum, lozenge, inhaler or mouth spray. The goal with NRT is to mirror the smokers' varying nicotine levels (background as well as additional peak levels) which can help to provide additional control when needed in specific situations. No single form of NRT mimics both categories of nicotine delivery to which cigarette smokers become accustomed and may require if they are to avoid symptoms of withdrawal and sustain abstinence from tobacco. In theory, using an oral, fast acting NRT in addition to patch enables smokers to relieve their ongoing and acute cravings as well as manage their tobacco withdrawal symptoms. In early 2016, the Nicorette[®] and Nicoderm[®] product licenses were exclusively amended by Health Canada to support the use of combination therapy, with the removal of contraindications and warnings about using more than one form of NRT concurrently and warnings about concurrent smoking while using NRT, also supporting reducing to quit strategies.¹⁰⁻¹⁴ Compared with placebo, combination NRT can increase the quit rate almost threefold (OR: 2.73; 95% CI: 2.07,3.65) and almost 1.5 times that of NRT patch alone (OR: 1.43; 95% CI: 1.8, 1.91).¹⁵ Further, combination NRT may be as effective as varenicline (OR: 1.06; 95% CI: 0.75, 1.48) and more effective than bupropion (OR: 0.68; 95% CI: 0.5, 0.91).¹⁵ No major safety concerns with combination NRT were identified in a systemic literature review.¹⁵

Place in Therapy of Combination NRT

A suitable candidate for combination NRT may be a smoker who:

- Has used NRT in a previous quit attempt but relapsed while using it
- Feels he/she needs something more than a patch or single form of NRT
- Are heavier smokers or start smoking soon after awakening (<30 minutes)

Thus, there is great opportunity for pharmacists to intervene and help to optimize treatment duration via education and counselling in order to maximize support during quit attempts.

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UPS ADDRESS

Hello Pharmacy!

We all okay? You made it past a tumultuous midterm season! It was definitely a tough couple of weeks, but we made it through and are now approaching the home stretch for the Fall semester!

There have been many amazing highlights these past few months. Despite the heavy rainfall, our Pharmacy soccer team powered their way through to take home the Soccer Cup! University of Toronto faced the University of Waterloo in an incredibly tight match that ended in a shootout with UofT victorious! Phollies hosted incredible performers and a big shoutout to Avey and Krista for planning a well executed night. The audience was blown away by a great variety of performances ranging from parkour acrobatics, musicals, dances and more! We can't wait for next year!

Charity Week was a tremendous success, as we collectively raised \$4847.20 to support the various class charities. Pharmacists Without Borders (2T0), Young Carers (1T9), CAMH (1T8), and Make-a-Wish Foundation (1T7) all benefited from your support. So thank you! Many faculty members were also available for bidding: congratulations to all who won! The Class of 1T8 won the Dr. Kennedy Charity Award, with a total amount raised of \$734.10. We'd like to thank Vivian Tang, Jason Yung, Steven Shao, and Matthew Luu, for all their hard work in planning a successful Charity Week!

As our semester draws to a close, the next events will be the Curling Bonspiel and the Holiday Party. Come out and test your curling skills, as the class with the highest attendance wins! We have plenty planned for you at our Holiday Party. Take a photo with Santa Dr. Utrecht? Check. Compete for the best gingerbread house? Try your luck! Tons of free (and delicious) food? Mhmmm. We have much more planned for you all, so come out and enjoy the day on Thursday December 1st from 12-2:30pm.

We'll be kicking off the new year with Professional Development Week (PDW) from January 4-7th in Winnipeg so for all of you who are going, let's represent UofT and show the other pharmacy students from across Canada what we're all about!

Keep it classy,

Faraz Razzagh and Alex Mok
UPS President and Vice President

Contact: ups@uoftpharmacy.com



CLUBS CORNER- Athletics

Pharmacy athletes have been amazing this season! Congratulations to all the teams that dedicated their energy and time representing Pharmacy on the courts and fields. Our athletes showed great sportsmanship in terms of their commitment, perseverance, and positive competitive attitude. Twelve intramural teams made it to playoffs! Cheer on the following teams as they sweat for the Fall 2016 Intramurals Championship:

Men's Volleyball, Women's Volleyball, Coed Div 1 Volleyball, Men's Soccer, Women's Soccer, Men's Flag Football, Women's Flag Football, Coed Flag Football, Men's Hockey, and Coed Hockey

Good luck to all twelve teams! Looking forward to seeing you all in the intramural champion t-shirts!



-ATHLETES OF THE MONTH- SEPTEMBER

Spencer Martin (1T7): Spencer was captain of the softball team and led them through a well-played tournament. On the same day as the tournament, Spencer played keeper in the Soccer Cup against Waterloo Pharmacy. He was unbeatable and helped the team to their 1-0 win, taking home the Pharmacy Soccer Cup for the very first time. He plays on several other intramural teams including men's soccer, men's hockey, coed hockey, coed basketball, and coed flag football. Despite multiple injuries this season, Spencer is still our fierce hero!

Lyndsay Esson (1T7): Lyndsay has been a prevalent force on many intramural teams throughout her time in pharmacy school. She plays women's basketball, women's soccer, women's flag football, and coed flag football. She also played defense during the Pharmacy Soccer Cup and contributed to the win. Way to go Lyndsay!

OCTOBER

John Ngo (1T8): John played on the U of T soccer team during their game against Waterloo. He also plays on the men's intramural soccer team. He is captain of the men's and coed flag football teams. He has led both teams to playoffs while being a key asset for all teams. Good job John!

Meiko Peng (1T8): Meiko is an exceptional athlete and has demonstrated her abilities by playing women's soccer, women's volleyball, and coed volleyball. Meiko's soccer talents were unleashed during the game UofT vs. Waterloo pharmacy. She is captain of both women's soccer and volleyball teams. Meiko has led the team to playoffs and will continue to show her leadership throughout the next semester. Keep up the great sporting!

Congrats to all of our athletes! We hope to see you all back on the fields/courts in January! Keep an eye out for our winter only sports in January: Lacrosse and Inner Tube Water Polo

Drugs on three,
Élise De Francesco and Sylvia Kong
Sr. and Jr. Athletics Directors
Contact: athletics@uoftpharmacy.com

CLUBS CORNER- CAPSI



This past couple of weeks CAPSI has held a number of competitions that allowed students to showcase their skills! We saw a great deal of talent and were quite impressed with everyone that competed!

The winners of our 4 major CAPSI Competitions are listed below:

Patient Interview Competition (PIC): Tiana Tilli - 1T7

Over-the-Counter (OTC): Tiana Tilli - 1T7

Student Literary Challenge (SLC): Vivian Tsoi - 1T7

Compounding Competition: Halina Lam, Arpit Shah, Faraz Razzagh, and Arpit Chhabra - 1T8

We would also like to announce that Erin Cicinelli of 1T7 is the winner of the CAPSI-Pfizer Consumer Health-care Guy Genest Passion for Pharmacy Award!

Future events include the CAPSI Pharmafacts Pre-Bowl and Professional Development Week (PDW)! The annual CAPSI Pharmafacts Pre-Bowl will take place on November 24 and we encourage all of you to attend! It is a pharmacy knowledge based competition with questions covering the 9 NAPRA competencies (Patient Care, Ethics, Jurisprudence, Practice Setting, Health Promotion, etc.) Cheer on your classmates, as the winners go on to represent our school nationally at Professional Development Week (PDW).

Speaking of PDW 2017, it is quickly approaching and will be in the beautiful city of Winnipeg, Manitoba. Over the course of four days, delegates will enjoy many exciting activities planned such as the opening gala, talks, and motivational speakers. CAPSI National Executive Council Elections also take place in PDW, but you do not need to be attending to apply! If you are interested, please contact Maria (torontosr@capsi.ca) or Nisha (torontojr@capsi.ca).

- Maria Moreno and Nisha Gajaria
Sr. and Jr. CAPSI Representatives

CLUBS CORNER- CAPSI Student Literacy Challenge (SLC) First-Place Submission

A Promising Solution to Opioid Overdose: Ontario's Naloxone Program

Vivian Tsoi, 1T7

Widespread alcohol and substance use is notably present in Toronto's downtown core, where more vulnerable and marginalized populations tend to reside. In response to rising rates of overdose, the Toronto Drug Strategy recommended a comprehensive and coordinated platform to "expand overdose prevention strategies for all substances" in 2005.¹ Despite this call for action, overdose death caused by medical and non-medical drug-use became the third leading cause of accidental death in Ontario in 2013, with a substantial proportion of these cases attributed to the use of opioids.² Coroner's data from 2014 also revealed that approximately one opioid-related death occurs every 13 hours.³

Over the last few years, the Ontario government has attempted to suppress high rates of non-medical prescription opioid use. Such methods included i) removing the highly misused narcotic OxyContin from the provincial drug formulary, and ii) reintroducing OxyContin as an "abuse-deterrent" formulation (i.e. OxyNeo). Although OxyContin use declined, users easily shifted to other opioids such as heroin, fentanyl and other less expensive illicit substitutes.²

As part of a series of services offered by The Works, Toronto Public Health's Harm Reduction Program, the Prevent Overdose in Toronto (POINT) initiative was implemented in August 2011. POINT is a community-based initiative that aims to prevent overdose through naloxone distribution, injection training, and overdose education for at risk opioid users.⁴ Naloxone (brand name Narcan) is an opioid antagonist with low-abuse potential. It acts by reversing the effects of opiates through displacement of bound opioid from mu opioid receptor sites. When an individual overdoses on an opioid, the central nervous system is unable to regulate basic bodily functions; hence, breathing is slowed, body temperature falls, and a loss of consciousness occurs. Overdosed persons can also become cyanotic, myoclonic and may potentially seize. If hypoxic conditions continue, death may be imminent, however can be delayed for several hours. Naloxone is an intramuscular administration (IM) that acts within 3 to 5 minutes, and provides a 30 to 90 minute window for a patient's agent to seek medical attention.²

A great deal of effort has been invested in making naloxone readily available and cost effective for emergency use in opioid overdose. As of June 24, 2016, the National Association of Pharmacy Regulatory Authorities (NAPRA) designated injectable naloxone hydrochloride as a Schedule II drug. Consequently, any eligible patient or agent may obtain a naloxone emergency kit directly from any community pharmacy, without a prescription and at no cost. Each kit contains two doses of naloxone, supplies for administration, and a naloxone identifier card. Eligible persons include those who are currently using opioids; a past opioid user at risk of re-use; or a family member, friend or other person able to assist a person at risk of opioid overdose.⁵

...A Promising Solution to Opioid Overdose: Ontario's Naloxone Program continues on the next page....

CLUBS CORNER- CAPSI Student Literacy Challenge (SLC) First-Place Submission

...A Promising Solution to Opioid Overdose: Ontario's Naloxone Program continued...

Based on the Ontario Naloxone Program for Pharmacies (ONPP) policy, pharmacies can submit claims for providing this service through the Health Network System (HNS). Pharmacies are reimbursed \$70 for the initial kit (i.e. kit \$35, professional fee \$10, professional training \$25), and \$45 for each subsequent replacement kit.⁵ As per the Ontario Pharmacists Association (OPA), it is the pharmacist's professional responsibility to ensure that he or she is competent to provide naloxone training and education to patients.⁶ OPA members can access an online module that educates pharmacists on the use of naloxone in overdose and tools for patient and agent education.

In early October 2016, naloxone nasal spray was approved by Health Canada.⁷ A partnership between Ontario Correctional Services and the Ministry of Health and Long Term Care has enabled naloxone nasal spray to be given to at-risk inmates upon release. Compared to the IM injection, the nasal spray is easier to administer in a crisis situation. However, it is roughly \$70 more expensive than the IM formulation and requires increased dosing to be effective.⁸ In light of the above, naloxone (in any dosage form) has demonstrated utility in the fight against opioid addiction, overdose and death.

Overall, Ontario's Naloxone Program provides a unique solution to Toronto's rising rates of opioid-related overdose and death. In addition, this program draws on the knowledge and skills of community pharmacists, one of the most accessible, front-line health providers, in improving the accessibility to and safety of naloxone for at-risk opioid users. Moreover, this initiative has enabled pharmacists to fully embrace their roles as clinicians and educators, to enhance their professional skill set and to increase career satisfaction. Ultimately, the support and involvement of pharmacists and pharmacy-related organizations has enabled this life-saving program to successfully gain and preserve momentum.

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CLUBS CORNER- PSASS

Interprofessional Panel Recap

Hello from PSASS!

As we finish off the fall semester, PSASS (Pharmacy Students for Antimicrobial Stewardship Society) would like to remind everyone of the important role that pharmacists play in managing the responsible use of antibiotics. You've likely have heard that many times by now, and are starting to wonder what exactly it means? Luckily, we can give you some answers since this was the focus of a recent panel event held in collaboration with the Students for Antimicrobial Stewardship (SASS) and the Dentistry Students for Antimicrobial Stewardship Chapter (DSASS). Students from all three faculties were fortunate enough to hear from an interdisciplinary panel of experts discussed what they believed was the role of their profession in regards to antimicrobial stewardship and the biggest challenges they had faced.

Dr. Linda Dresser, an assistant professor here at the faculty and a pharmacotherapy specialist in antimicrobial stewardship at the UHN, emphasized the role of a pharmacist whether in a hospital or community care setting to optimize antimicrobial use in the healthcare system. We have the responsibility to educate patients and our peers, as well as monitor antibiotic use in our practice. A big challenge faced by pharmacists is the need to have the confidence and competence to challenge physicians about their antimicrobial use and develop trusting relationships between all the members of the healthcare team. She also stressed how an expanded scope of practice, (e.g. vaccines, having access to laboratory values, and the ability to treat minor ailments) will only augment the role of pharmacists in antimicrobial stewardship in the future.

Dr. Susan Sutherland, an associate professor in the Faculty of Dentistry and Dentist-in-Chief at Sunnybrook commented that the field of dentistry is currently well behind in terms of data or guidelines around the proper use of antibiotics in their profession, especially since they prescribe approximately 10% of the antibiotics used in humans. She stressed the importance of looking to pharmacy and medicine to help develop these guidelines.

Finally, Dr. Andrew Morris, an expert on Infectious Diseases and Director of the Sinai Health Systems-UHN Antimicrobial Stewardship Program, stressed the need to "make antibiotics great again". He summarized the physicians' role as prescribing antibiotics properly, educating patients and peers on the proper use of these drugs, and staying up to date on the latest guidelines.

With lack of funding, political support, and education, there is a gap and need to generate the research and awareness here in Canada and worldwide. As Dr. Dresser pointed out, why is there no "Run from C. Diff" campaigns to promote awareness and raise money for research into this significant health threat? In order to help tackle this problem, we encourage you to attend future events to learn how to support evidence-based practice and the responsible use of antimicrobials, as well as promote interprofessional collaboration. All health professionals will need to work together in order to recognize and prevent the looming threat of antibiotic resistance. Thank you to all those who attended and look for us in February when we will present to you Antimicrobial Stewardship Awareness Week with lots more fun and informative events!

CLUBS CORNER- PSFCA AND IMHAP

Hi Pharmacy!

These first three months back to school have been exceedingly encouraging and rewarding, and we are grateful for the passion and support you have shown! We want to take a quick moment to share the few things Pharmacy Students for Cancer Awareness (PSFCA) have been involved in and update you on the few activities to come.

To kickstart the year, we gave guys and girls alike a makeover with our 'ManiCure' event! By painting your nails and donating \$2, we made our mark against Breast Cancer. Together with PSWH and specific individuals who fundraised for the CIBC Run for the Cure, we raised \$753.36 for the cause! We then ran our hearts out on October 2nd, and along with your passion, showed many women around the world that we are fighting alongside them.

As November kicks around, we are shifting gears to support the numerous men who battle prostate and testicular cancer through 'Movember'. You can show your support by growing out your 'staches' and sharing it on our Facebook event (PSFCA Presents Movember 2016), and gaining a UPS point. Moreover, many of you pitched in and supported us during our Pharmacy Wide Bake-Off on November 15 where our baked good proceeds will contribute to The Movember Foundation! We will update you on the bake sale in the next monograph!

Those are our updates! Thanks for your passion for cancer awareness, and #TogetherWeWill

-Pharmacy Students For Cancer Awareness (PSFCA)

Right Photo: PSFCA and PSWH participants in the CIBC Run for the Cure, Sunday October 2nd 2016. These girls raised money and ran against Breast Cancer along with thousands of others. Pictured here from left to right: Anastasia Pimenova, Jasmyn Gill, Abas Ibekwe, and Stela Danaj



WHAT'S NEW IN THE WORLD OF MENTAL HEALTH INITIATIVES?

Mental Health Awareness week took place from October 2nd to 8th. Many initiatives around Canada, and globally, shed light on to the importance of speaking up about mental health. Some events around the Toronto area include CAMH's awareness training for shelters who house LGBTQ2S and youth mental health clinics.

October 10th marked Mental Health Day. This year's theme was psychological and mental health first aid. The goal of the day was to learn about psychological first aid to support those who are very distressed, and importantly, to know what to say (and not say!). Take a look at what CAMH's Senior Medical Advisor, Dr. David Goldbloom has to say about helping others through mental health emergencies: <https://www.youtube.com/watch?v=-I2WAmtrmj4>

Be sure to follow IMHAP's Facebook page, where we share stories and events of mental health initiatives.

COMING UP FOR IMHAP:

There's lots to look forward to from IMHAP! In November, IMHAP will be hosting a Mental Health and Chill event, where we will feature a movie that addresses mental health concerns, followed by a discussion. This event is scheduled for November 24th, and will be located in PB 850. Also in November you can find IMHAP in the main atrium providing snacks and informational brochures to de-stress after MTM. Next semester, IMHAP will feature a panel where experts in the mental health field go into depth on what their career in mental health is like, and answer audience questions. Stay tuned for more information on these activities, and more!

Once a month we will be providing de-stress snacks along with a hand out and brochure with more resources and information about mental health in Canada!

CLUBS CORNER- PSWH

Link Identified between Birth Control Pills and Depression

By Ersilia D'Andrea (2T0),
on behalf of Pharmacy Students for Women's Health (PSWH)

A recent study published in JAMA Psychiatry has established a link between the use of birth control pills and depression. Mood changes in women have long been associated with hormonal contraception, especially in women who have a history of depression. Until now, however, this connection was not validated or quantified by sufficient research.

The cohort study was conducted by researchers in Denmark and monitored over 1 million women and adolescents between the ages of 15 and 34 for thirteen years (from 2000 to 2013). The women involved in the study had never experienced depression or any other psychiatric disorder prior to the study, and had never taken antidepressants. Results of the study showed that women who used hormonal contraception had a 40% increased chance of being diagnosed with depression after six months, in comparison to those who were not using this form of birth control. In women and adolescents, the risk of developing depression and taking antidepressants was higher for those taking progestin-only pills than it was for those taking combined birth control pills (containing estrogen and progestin, the synthetic version of progesterone). Women who used a patch, ring, or intrauterine system to deliver hormones had the highest rates of depression and antidepressant use. This was hypothesized that it was due to a higher dose of hormone rather than the different route of administration. Adolescents were found to be twice as likely to develop depression and be prescribed antidepressants compared to adults, and the risk of developing depression showed an overall decrease with age.

Although more research is needed to better understand the relationship between hormonal birth control and depression, these findings are significant because they strengthen the theory that progesterone plays a major role in depression, as this is the hormone that dominated in the combined and progestin-only pills. The study is especially important because millions of women all over the world use birth control pills not only as a form of contraception, but for various other medical uses such as the treatment and control of polycystic ovary syndrome, acne, and the regulation of menstrual cycles. Coupled with the fact that adolescents and women are twice as likely as adults and men to experience depression, these results (and those of related studies sure to follow) can impact the way that physicians consider factors such as age and mental health history when prescribing birth control pills. It is also likely to influence how physicians and pharmacists educate and counsel patients about birth control options, as well as how they prescribe and monitor patients while they take hormonal birth control.

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Like our Facebook page to receive updates about PSWH events and current issues in women's health!
www.facebook.com/PSWHToronto

LEARNING ON THE GO- Drug Developments

An Amphetamine for the Munchies

Sandra Wood, 1T7



I recall a lecture in PHM386 that outlined the evolution of the Diagnostic and Statistical Manual of Mental Disorders (aka the DSM aka the bible of psychiatry). During the discussion of the most recent edition (i.e. DSM-5), it was highlighted that “binge eating” is now recognized as a clinical disorder. Upon contemplation, I rationalized as to why this could be. Similar to how substances like alcohol, nicotine and cocaine can be addictive, and subsequent misuse can be categorized as “substance use disorders”, it’s not farfetched for “food” to also be considered an “addictive” substance. By clinical definition, “binge eating disorder” is characterized as recurrent episodes of excessive eating in a short period of time due to a lack of control.¹ As a result, individuals may feel distressed, guilty, and often feel isolated because of embarrassment.¹ Perhaps the deleterious effects do not parallel to those of the aforementioned substances, but physiological harm is still present along with attributes of low self-control despite acknowledgement of the notable harms. These features actually align with the criteria that guides a diagnosis of a “substance use disorder” as outlined in the DSM-5.

Consequently, this prompts the need for treatment. Obviously, dietary and lifestyle changes are a given. However, considering the fact that binge eating is classified as an “addiction”, suggesting to the patient to simply “stop eating so much” will not be effective. Thus, an understanding of the underlying pathophysiology of the condition, and tailoring a mode of therapy based on that understanding, could be of benefit. “Binge eating” has been attributed to a dysfunction in the release of dopamine and norepinephrine in the brain.² Knowing this, perhaps it’s not surprising that a medication used to treat ADHD has a recently approved indication to treat binge eating disorder. The medication Vyvanse (lisdexamfetamine) inhibits the reuptake of dopamine and norepinephrine from the synaptic cleft and simultaneously releases dopamine, norepinephrine and serotonin.¹ Essentially, Vyvanse helps to regulate the neurotransmitters that are involved in triggering overeating.¹ The recent approval from Health Canada was based on clinical evidence which support its use. A meta-analysis from three randomized controlled trials found that patients taking Vyvanse experienced a reduced number of binge eating days per week, along with improvements in subjects’ weights¹

The effective dose of Vyvanse has been noted at a recommended target of 50-70mg/day.¹ However, patients are started on 30mg/day and titrated to target by weekly 20mg increments. (Fun fact: Shire Pharmaceuticals, the manufacturer of Vyvanse, will be introducing a new 70mg capsule strength in early 2017 specifically for this indication).¹

I personally found this new role for Vyvanse to be quite interesting – and I hope all you Pharmies did too!

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IN THE NEWS- Pharmacy Perspectives



Everything You Need to Know About Flu Season

Narthaanan Srimurugathan, 2T0

As the temperature falls, the warm and bright summer transitions into a cold and bare winter. Along with the new season comes the influenza. Each year, the Public Health Agency of Canada prepares an intramuscular vaccine formulation for protection against the predicted viruses of that year. Due to the expanded scope of pharmacists implemented a few years ago, pharmacists not only have a responsibility to be knowledgeable about the influenza, but must also directly administer the vaccine and promote it among the public.

The influenza is a respiratory disease resulting from an infection by influenza A and B viruses. It is transmitted by droplets which spreads through coughing or sneezing. The infection may be mild but can also result in more severe complications such as pneumonia, especially in high risk populations such as children and seniors. Every year WHO recommends three or four viruses to be included in the vaccine based on flu surveillance patterns. This year, the three component vaccine will contain A/California/7/2009 (H1N1)pdm09-like virus, A/Hong Kong/4801/2014 (H3N2)-like virus and B/Brisbane/60/2009-like virus. The four component vaccine will contain B/Phuket/3073/2013-like virus in addition to the ones mentioned above.

In Canada, the vaccine is available with the inactivated influenza (the three-component TIV or the four component QIV) or the live attenuated influenza (LAIV). LAIV is an intranasal spray for use in children over two years of age. There is evidence that LAIV protects against the flu better than TIV in children under the age of six. There is less evidence in older children, consequently LAIV is not administered in individuals over the age of 18. It is noteworthy that the USA is not offering the intranasal spray this year due to concerns about its effectiveness. This is likely due to the reduced stability of the A/California H1N1 strain when the temperature fluctuates. Canada continues to offer LAIV while closely monitoring its efficacy.

Each year, up to seven million Canadians are infected with the flu. Over 12 000 Canadians are admitted to the hospital due to their condition and as a result, 3500 individuals die. Despite its role in preventing the influenza, a recent study has shown that individuals who were vaccinated in consecutive years had a higher risk of being infected in the subsequent year. After the H1N1 epidemic in 2009, it was found that Canadians who were administered a flu vaccine in 2008 were twice as likely to get an H1N1 infection that required medical attention compared to individuals who did not get the vaccine. Another report suggests that individuals who have not been vaccinated in the previous year were more likely to benefit from the flu vaccine than those who received shots in consecutive years. The Public Health Agency is looking into how to optimize the vaccination program in response to these recent findings.

Pharmacists have an important role in educating patients, promoting health, and being a source of drug information for other healthcare professionals. As the flu season approaches and more vaccinations are administered, pharmacists must stay knowledgeable to protect the public from health hazards.

PHOTO: Courtesy of www.organiclifestylemagazine.com

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IN THE NEWS- Headlines in Healthcare

Pharmacists Involvement in Hypertension Management: How Can We Pay For It?

Sasha Farina, 1T9

As of late, there have been demonstrable benefits in including pharmacists in the management of hypertension [1]. As pharmacists' scope of practice continues to expand, hypertension management remains a prime avenue for pharmacists to apply their knowledge and contribute more to patient care. One study of note came from Alberta by Tsuyuki et al. where they compared enhanced care from pharmacists which included prescribing blood pressure medications, to usual care with more casual education on hypertension management in patients with high blood pressure [1]. They found that when pharmacists prescribed medications for patients with hypertension, it resulted in a clinically important and significant reduction in blood pressure: (Mean \pm Standard Error) 6.6 \pm 1.9 mm Hg Systolic Blood Pressure / 3.2 \pm 1.3 mm Hg Diastolic Blood Pressure.

Another point of interest is that the characteristics and demographics of patients attending pharmacies for help in managing their hypertension may in fact be very much like those seeing other primary healthcare professionals for such services. This was suggested through a study in the UK showed that the characteristics of patients attending pharmacies for 24-hour ambulatory blood pressure was similar to those attending primary care [2]. These conclusions help support the rationale for introducing hypertension management practices from the clinic to a similar population in the pharmacy.

While there may be data to support expanded hypertension management roles in pharmacies, a big question arises: "What sort of reasonable model can be implemented that could remunerate pharmacists for such practices"? There are different schools of thought in healthcare on how healthcare professionals should be paid in their practice. Systems in which healthcare professionals are paid depending on their performance have been tested amongst physician's practices and the data has shown that it has yielded little benefit in changing practice and in improving outcomes for patients [3]. However, no such model has been tested in the pharmacy.

This issue was addressed in a new paper from Alberta by Houle et al. [4]. This was a substudy of the trial by Tsuyuki et al. mentioned previously in this article [1]. In this aspect of the study, patients who were randomized to the Pharmacists Prescribing group were further randomized into either a group where the pharmacists were paid through a pay-for-performance model or a group where they were just paid a small fee-for-service. In the pay-for-performance model, pharmacists received the usual fee-for-service payments plus additional incentives of \$125 and \$250 for each patient reaching 50% and 100% of their target blood pressure. In the fee-for-service group, pharmacists received \$150 at the initial visit and \$75 for follow-up visits.

The study was looking at whether there was a difference in the change in systolic blood pressure between the different payment groups. The results of the study suggested that no difference was observed when the pharmacists were paid by the pay-for-performance model vs. fee-for-service model. They even further stratified the pay-for-performance group into whether the pharmacists would directly or personally benefit from the fees (such as owners) compared to those such as salaried pharmacists, where the income may not translate directly to the individual pharmacist. Even in this instance, when accounting for whether the pharmacist had potential personal gains, the pay-for-performance system did not show improved outcomes of blood pressure reduction. Therefore, outcomes-based remuneration may have little impact on pharmacists' efforts to improve patient care and in their ability to improve patient outcomes.

As pharmacists' scope of practice continues to expand, appropriate models of remuneration and compensation are needed to adapt and meet the shifting paradigm. While greater involvement in hypertension management by pharmacists seems to provide additional benefits, it remains to be seen what model for remuneration would be the most effective and reasonable to implement in order to make these practices a mainstream reality. In this study, a pay-for-performance model did not provide additional benefits over a conventional flat fee-for-service. Future studies are needed to explore different models of compensation, in order to devise an optimal system that encourages pharmacists to try and achieve the best outcomes for their patients.

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IN THE NEWS- Headlines in Healthcare

Repairing Knee Joints with Your Nose?

Josephine Ho, 1T9

For any Grey's Anatomy fans reading, this new technique to repair knee injuries is shockingly reminiscent of the eureka moment when Dr Calliope Torres finds that the cartilage she has been growing all day in the lab is no longer liquid (that was so Season 6, when Grey's was less emotionally traumatic). Last month, scientists in Switzerland published a paper in *The Lancet* demonstrating the successful repair of knee cartilage injuries using cartilage cells from the patient's own nose.

Knee injuries, specifically articular cartilage injuries, are very difficult to recover from because it does not have its own blood supply. Without this cartilage, there is no padding between the knee bones, leading to progressive joint damage. Current conventional treatment and even advanced therapies are limited in their ability to restore this cartilage. However, nasal chondrocytes have the ability to reproduce and generate hyaline-like cartilage. More importantly, they can adapt in environments such as an injured joint, making it an ideal source for 'growing' new cartilage!

This study, based at University Hospital Basel in Switzerland, was a first-in-human trial in 10 patients with symptomatic, post-traumatic, full-thickness cartilage lesions of the knee. First, scientists extracted a 6mm biopsy specimen from the nasal septum of the patient. They cultured the cells on collagen membranes to make a cartilage graft of approximately 30X40X2mm in dimension. These grafts were implanted into the injured femoral areas using a technique called mini-arthrotomy. The damaged cartilage was removed using a sharp spoon, then the graft was trimmed to size and glued onto the bone using fibrin glue. These patients were assessed for up to 24 months post surgery. The outcomes of interest were feasibility and safety of the procedure and quality of the repaired tissue.

From these 10 patients, it was found that the process of obtaining and culturing nasal chondrocytes was feasible. Handling and inserting the cultured grafts into the patient's knee joint was also not a problem. In terms of the quality, no adverse reactions were reported and the self-assessed scores for pain, knee function, and quality of life were improved significantly after surgery. From this preliminary (and limited) sample, it seems that nasal chondrocytes are a promising source of repair for articular cartilage injuries in the knee.

So how big of an impact does this study have anyways? Approximately 2 million patients are diagnosed with articular cartilage defects in Europe and the US each year. This technique has the potential to relieve pain, improve quality of life, delay the need for joint replacement, and reduce complications. Some of the current treatments include arthroscopic debridement, microfracture, and autologous osteochondral grafting, but they all have major setbacks like long rehabilitation times and donor site morbidity. The reason nasal chondrocytes seem to be superior is because they are obtained from the same individual, show superior and reproducible chondrogenic capacity, and they maintain their chondrogenic properties even after extensive culturing. Effectively, this means that only a small sample is required to expand to a clinically useful cartilage graft!

Despite these positive results, more data is needed to tell us more about the safety and efficacy of this technique. This study has been expanded to 25 patients and is currently ongoing. For more details (and pictures), see the full article: [http://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(16\)31658-0/fulltext](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(16)31658-0/fulltext)

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IN THE NEWS EXTENDED- Restaurant Reviews

Exam Season: Bean there, done that

Shakira Hakim, 1T8



Students go through phases during exam seasons. They go from walking, talking, smiling human beings, to students searching for DTPs in their om-ettes. However the perfect way to get through it all is by having a study buddy to motivate you, nourishment in the form of a pizza, and coffee to keep you alert. While I can't help find you friends, I can definitely recommend a few special cafés that may be a nice change from the Gerstein caf.

DARK HORSE ESPRESSO BAR on Queen & Spadina is where I go if I have mindless tasks to complete. If you're someone who can lose themselves in a loud, busy environment, then this is the place for you. There's music blasting at times, so plug in your own tunes if you're not a fan. Head on upstairs if you can't find a seat. Their coffee is excellent, and many people agree! They have treats as well, so be sure to have a brownie for me!

If you like some order in your life, head over to QUANTUM on King & Spadina. They have separate spaces for chit-chat and a laptop-friendly environment. Don't let their tidiness fool you, their drinks are anything but boring! When I went in October, the Quantum special was Coffee and Cola, which was not palatable at all. That being said, their mocha was the best I've ever had! Their scones look phenomenal and they have tons of other treats to nibble on while you're sipping.



If you're looking for some cultural experience, head over to HAILED COFFEE on Gerrard & Carlaw. The word 'hail' means cardamom in Arabic, and while I'm only Arab by association, cardamom is a spice my Afghan roots glorify. My mom uses it in her tea, rice, and even herbal remedies. So it's only natural that I tried their cardamom latte and it was delicious! Lightly sweetened yet with a strong cardamom flavour, it was truly comforting. They also serve kanafeh, a sweet cheese pastry, on the weekends, so be sure to take a friend (or me)!

My favourite place of all is BOX CAR SOCIAL right by Harbourfront Centre. The London Fog is soothing on a rainy day, but their drinks are average. The atmosphere is dark and strung with fairy lights and interesting pieces of art. Be prepared to reach high for outlets, and depending on the hours of the day it can be really loud. It can get really noisy as they rent out their space quite often. How can this be my favourite if the drinks are drab and the space is crowded? The answer is simple - the view. The skating rink is right out front and the lake behind it. I find that if I plug in my headphones and take in the view from time to time, it's the calmest I've ever felt.



I'm not a coffee connoisseur and those who know me cringe at the amount of sugar and cream I add, but I do appreciate coffee nonetheless. I can be a Basic Britney and go for Starbucks, but it's nice to change it up once in awhile. So I challenge you to explore a little and enjoy a drink or two.

IN THE NEWS EXTENDED- Recipes

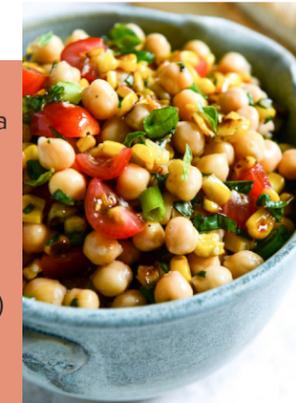
A Quick, Healthy Meal for Exam Season: Mediterranean Chickpea Salad

Farhat Hossain, 2T0

As the semester is winding down and exams are just around the corner, you may feel as though you don't have enough time to prepare your meals. You may be tempted to eat out everyday, especially given the location of the pharmacy building. However if you're worried about gaining a bit of excess holiday weight before the holidays even start, here's a healthy meal idea for you!

Ingredients for Mediterranean Chickpea Salad:

- 1 can of chickpeas (drained)
- 1 teaspoon of salt
- 1 teaspoon of black pepper
- 2 teaspoons of garlic salt (optional)
- 2 teaspoons of ground cumin
- 1-2 tablespoons of olive oil
- 1 whole lemon squeezed
- 1 cup of cucumbers (diced)
- 1 cup of red peppers (diced)
- 1 cup of green peppers (diced)
- ½ cup of feta cheese (optional, but highly recommended)
- ½ cup of black olives (sliced)
- ½ cup of red onions (diced)
- A large mixing bowl (similar to the size you would use to make a cake)



Instructions to make the Mediterranean Chickpea Salad:

1. Drain chickpeas and wash them thoroughly.
2. Dice cucumbers, red pepper, green pepper, and red onions.
3. Slice black olives.
4. Combine chickpeas, red pepper, green peppers, cucumbers, black olives and red onions into the mixing bowl.
5. In a separate, small bowl, combine 1 whole, freshly squeezed lemon, salt, black pepper, garlic salt, ground cumin, and olive oil.
6. Mix well and add the dressing to chickpea salad.
7. Stir until all ingredients have been coated with dressing.
8. Garnish with crumbled feta cheese.

There are many variations of this type of chickpea salad that you can experiment with but I really enjoy this particular combination. Even though there's quite a bit of chopping required, it's definitely worth the effort. One preparation of this meal usually lasts me 5 days, but during exams it's more like 3 days. I hope you find that this recipe is tasty and useful to you during your final exams.

Good luck!

IN THE NEWS EXTENDED- Recipes

Cooking Without Scales: A Pseudo-Okonomiyaki Recipe

Rong Shan Liu, 1T9

Okonomiyaki is a Japanese street food which originated from Osaka in the Kansai region. It is essentially a savoury pancake. You can see a picture of what they look like on the right.

There are a number of okonomiyaki variations: some have a noodle layer, some don't; some are big, some are small. But some things don't change: delicious cabbage, okonomiyaki sauce, and Japanese mayonnaise.

This recipe is magical. It is incredibly quick and easy to make, and with a bit of Japanese mayonnaise sauce, it tastes divine. Okonomiyaki are made with specific layers, usually with protein at the bottom, a vegetable-starch mixture in the middle, an optional noodles layer, and okonomiyaki sauce smeared at the top. For this recipe, we are just going to mix every ingredient together. Needless to say, this is my midterm season staple.



For the magical base mix, you will need:

1 cup of flour
1 egg
2/3 cup of water

THAT'S IT! WOW!

Feel free to size this base up or down, just make sure to maintain these proportions.

To this base, you can add whatever spices or sauces you want! My personal favourites include pepper, cumin, oyster sauce (serves the same purpose as okonomiyaki sauce), and sriracha. Add them to taste.

With this magical base mix, it will taste good already! To it, add your protein and vegetables. I like adding carrots, mushrooms, bell peppers, and celery. However to give it the typical okonomiyaki flavour, I highly recommend adding cabbage and green onions.

Cut the cabbage into thin slices. I usually use a quarter of a cabbage for the above portion, but it really doesn't matter. Add as much or as little you like. Now here comes the second magical ingredient: sesame oil. You only need a teaspoon of it, and it gives the whole pancake an amazing fragrance! It also saves you from having to add oil in the subsequent steps of the cooking process. If you are allergic to it, vegetable oil works equally well.

After you mix the batch together, you are ready to cook it. Add some cooking oil into your pan, and heat it up. Make sure that your pan is very hot, because it can prevent sticking. If you heat it high enough, you will only need to add oil for the frying the first pancake.

Add a scoop of batter to your pan, and flatten it out for even cooking. It should be around the size of a CD disk, otherwise it may be too big to flip. Cook it on high heat until it can slide around like an omelette when you move the pan. Turn the heat down to medium, and cover it with a lid. When you see droplets of water condensing on the lid, it's time to flip it. Turn the heat back up to high after flipping, and repeat the process, waiting for drops of water to condense on the lid.

Repeat the same process for each pancake. And now it's ready to serve! If the pan does not appear smooth, some more oil may be needed. It takes roughly 4 minutes to cook each pancake. Top it off with some mayonnaise sauce, and enjoy!

ENTERTAINMENT- Netflix Exclusives

Luke Cage Review

Joseph Correia, 2T0

Luke Cage is another Netflix original show expanding upon its Marvel series following two excellent seasons of Daredevil and a season of Jessica Jones. Marvel has the incredible ability to take B-list and even C-list superheroes and make them just as compelling as some A-list characters they have to offer. It's difficult to make the superhero genre work on the small screen because part of what makes this genre so exciting are the big-budget special effects. This has been the problem with many superhero shows such as The Flash or Supergirl. These characters must rely on special effects to make them work, yet the networks that air them don't have the budget or resources to be able to pull them off. This makes these come across as cheesy. The genius of these Netflix shows is using characters that don't require CGI and instead relying heavily on character development and story to make the shows compelling. This is what Luke Cage does successfully and this is why the show works so well.

The story of Luke Cage is sort of your typical origin story. A man with powers is reluctant to use them until he must so that he can stop the bad guys from implementing their evil plans. However, within this seemingly simple story there are intricacies that add a certain depth to it. For example, the depiction of Harlem in this series separates it from other environments we have previously seen heroes engage in. It is plagued by violence and corruption, yet the show highlights how rich in culture Harlem is with the use of the nightclub as a showcase for the musical and artistic talent that the neighborhood has to offer. Also, the story of how Luke Cage develops is well told and he is excellently played by Mike Colter with a certain degree of subtlety that makes him likeable, and even kind of funny. The fight scenes he is involved in are pretty cool as well (although nothing has yet compared to Punisher's jail scene in Season 2 of Daredevil... holy smokes that was awesome).

Unfortunately the show does lose steam towards the later episodes once Diamondback (Erik LaRay Harvey) is introduced. One of the most important characteristics of any superhero series is a worthy villain. Cottonmouth (Mahershala Ali) is easily the best villain in the show, however the show shifts focus towards Diamondback in the later episodes. Diamondback is everything wrong with superhero villains. He is introduced for the sole purpose of having Luke Cage having a worthy physical opponent to face-off against in the finale. His backstory is convoluted, and his motives are unclear. With Cottonmouth on the other hand, you get glimpses of a real human being who shows remorse, guilt, and you can even relate to the rationale he uses for some of his actions, no matter how foul they may be. Overall, I recommend watching Luke Cage. It may not be as good as Jessica Jones or Daredevil, but given the caliber of those shows, it is still worth a watch.

Verdict – 3/5

Photo: Courtesy of screenrant.com



ENTERTAINMENT- Movie Reviews**Storks Review**

Edward Ho, 2T0

In this hilarious and heart-warming animated movie, *Storks* invites audiences of all ages to wonder, "Where did you come from?" Just take a moment and think about it! *Storks*, the fluffy, white-feathered birds, have been manufacturing and delivering babies for centuries to loving families. Parents would select characteristics on an order form, and a baby would be produced via machine – now that is rapid mitosis! However, the one rule that these storks must abide by is to never look directly at a baby. A baby's charm someone and even make them do dramatic things, even kidnapping!

Fast forward a few decades to an attempted stork-related kidnapping, as a baby is left astray with the storks and their only mailing directions, a homing beacon, is destroyed. All hope of finding a loving family is lost! *Storks* have since transitioned from delivering babies to delivering mobile devices. That is, until this orphaned baby turns eighteen.

Eighteen years later, we follow the unlikely relationship between Junior (Andy Samberg), son of the stork company CEO, and Tulip (Katie Crown), the orphan left behind. Following mishaps including a series of explosions, fireworks, and occasional pyrotechnics, the fate of Tulip and the storks is to be decided – whether she is allowed to stay, or whether she should go and live a life on her own. But, when a new baby request comes in unexpectedly after 18 years, a baby is accidentally produced and the adventure of chaos and laughter ensues.

This movie will please the inner child in you. It has everything from a power-hungry, carrier pigeon with an 80's hairdo, to a pack of ridiculously acrobatic wolves capable of forming the shape of motorized vehicles (including functional submarines like the *Wonder Twins*). The only thing missing is a penguin fork-tossing battle, *Hunger Games* style – oh wait, no it has that too. Spoiler alert!

Overall Rating: 4/5 Stars

Other Recommended Titles: *Inside Out*, *Ice Age*, *Up*, *Shrek*



Campus Drama: Clothes Make the Man- An Interview with Adriana Bogaard

Lyudmyla Pashkivska, 1T9



A few weeks ago, I had the pleasure of meeting Adriana Bogaard, the set and costume designer working on the latest production at the Hart House Theatre. Adriana finished her undergraduate drama education at the University of British Columbia and also completed the Set and Costume Design Program at the National Theatre School of Canada. Her latest project is a Hart House production of William Shakespeare's *Much Ado About Nothing*. Although the script for this play was written hundreds of years ago, those attending the play will not see historical dresses and furniture, as this production has a modern style. Here are Adriana Bogaard's reflections about her work and the production design.

Q: How did you decide to become a set and costume designer?

A: It is difficult to point to a moment when I made this decision. I was always interested in aesthetics and visuals, art, sculpture, painting, and when I was a teenager I became very interested in the theatre. For me being a designer is the marriage of two things. It is a combination of live performance, something living and something artistic. When you are painting something, it is just that, like this painting here, it will always be just that. The nice thing is to have a piece of artwork, whether it is a set or a costume, and have a performer actually interacting with it, changing what it means and how people see it. That is fascinating and is what drew me into it.

...Campus Drama continues on the next page...

ENTERTAINMENT- Campus Drama

Clothes Make the Man- An Interview with Adriana Bogaard Cont'd...

Q: In the future, what is your dream work project?

A: My favorite projects in general are new works that are being created. It is an honor to work on a classic play like this, but I generally prefer to work on things that are being created by the performers and the team as they go. So my hope is to be working on newer pieces, new plays, and devised work that the artists are creating together. I like to be involved in the creation of something right from the ground level and talk about what the world is and how it looks right from the beginning. It is great to work on a script that is established, but it comes with an established idea of what it should look like and where it takes place. So hopefully more creation work with groups in the future.

Q: What do you like most about costume making?

A: What I like most about it is working with the actors. When an actor comes in and they get in costume for the first time, you do the fitting and you see how they react to the costume. For example, yesterday we were trying some uniforms on some of the actors and the way they straightened up their bodies and held themselves just because of the costume, it informs them about how they physically work and how they physically interact. That's my favorite part, the way that the costume will inform an actor's creative process.

Q: What is the style of the costumes in this Shakespearian production?

A: Carly Chamberlain, the director, decided this show will take place just after World War II, so everything is in mid 1940s style as far as the costumes are concerned. The idea is that all of the men have just come back from the war and the women have been doing a lot of the jobs at home. This decision was made because it works into the themes of the play, like the battle of the sexes and tension between who is in charge, who gets to make the choices. The 1940's clothing is very different from what we wear now. It is interesting to see the actors get into these costumes and they ask, "Does this fit properly? Because it doesn't feel like it does." This is because we are not used to it. For example, yesterday we were fitting suits on men. All the trousers are super high-waisted and very loose in the leg, and that feels very wrong to men who are used to wearing skinny jeans right now. So that's an interesting aspect.

Q: Tell us about the set.

A: The set consists of three sets of flats that have different levels of opacity. They have a pattern stenciled onto them that is reminiscent of wrought iron gates from Victorian gardens. When they are lit in different ways, we can see through them. We wanted to get a sense of a large-scale country garden where people of a wealthy class would be spending their leisure time in the country. The other thing we wanted to play with was the depth of the stage and the perspective. The doorways get smaller as we get farther upstage, so when actors are walking away, the perspective is forced to make it seem deeper than it is. We wanted to do that because there are a lot of places in this play where people are spying on other people, creeping around, or eavesdropping. We wanted to have a lot of different areas that people could be around, and I think we succeeded at doing that.

The Hart House Production of *Much Ado About Nothing* ran from November 4 to 19. I was lucky enough to see it live and I thoroughly enjoyed the performance. Having done this interview prior, I spent more time than usual admiring the different outfits and observing the set move around and morph between the various scenes. The military uniforms, the 40's style dresses, and the wrought iron inspired gates provided a refreshing look to the Great Bard's timeless masterpiece. The next performance on stage will be *Carrie: the musical*, which will be running January 20 to February 4. There will be blood.



OPINIONS- Interests and Perspectives

Interprofessional Collaboration in the Hospital Pharmacy Setting

Sara Temkit, 1T7

While I attended interprofessional rounds with a pharmacist in the mental health department at Kingston General Hospital, I listened to physicians, pharmacists, nurses, dieticians, and social workers, as they made suggestions to improve patient care. I realized that an interdisciplinary approach produces better therapeutic outcomes than the care that can be provided by an individual professional alone.

I learned that social workers play a huge role in addressing the patients' emotional and psychosocial needs. In accordance with the social workers that I have spoken to, each individual patient underwent a psychosocial assessment during the drug treatment initiation phase. These assessments determined the patients' risk factors, eligibility for services, and coping capabilities. The assessments also enabled the pharmacists to identify potential indications for treatment as well as the possible barriers and facilitators to patient medication adherence. There were several instances where the pharmacists relied on the information provided by the social workers to prevent unsafe medication practices.

In one remarkable patient scenario, one of the social workers identified a patient's high risk for suicide and shared this information during patient rounds. This allowed the pharmacist to make a more appropriate recommendation regarding the patient's antidepressant treatment, as there was a major drug therapy problem (DTP). The patient was on a tricyclic antidepressant (TCA), and this class of medications carries a high risk of arrhythmia and death when used in excess for the purpose of suicide.

Due to the information that was provided by the social worker, the pharmacist was able to make the appropriate judgement call to stop the patient's tricyclic antidepressant (TCA) and start a serotonin-reuptake inhibitor (SSRI) instead. The latter medication class carries a much lower risk of harm in overdose conditions. In addition to ensuring patient safety, the social workers regularly communicated with the pharmacists to ensure that patients were able to access affordable care. The social workers were well-informed with regards to the patients' income, employment status, and access to social support. This insight was helpful to pharmacists, who aimed to customize patient treatments. During patient discharge, the social workers reinforced the pharmacists' counselling by encouraging medication adherence, addressing barriers to lifestyle changes, and expediting patient referrals to supportive government and community agencies. The role overlap between social workers and pharmacists ensured that patients were able to transition more smoothly from the hospital back into the community.

Collaboration between pharmacists and nurses was also indispensable to patient care at Kingston General Hospital. The nurses were in charge of preparing and maintaining patient records, producing risk assessments, as well as administering medications. They were very helpful in facilitating the pharmacists' communication with challenging patients, as they were trained in the use of de-escalation techniques. The partnership assured that pharmacists were able to conduct more effective patient interviews and medication reconciliations. Ultimately, the nurses and pharmacists collaborated to ensure that all of the patients' home medications were correctly ordered.

The nurses also provided detailed insight into the patients' symptoms, vital signs, and behaviors. This allowed the pharmacists to objectively track responses to newly instituted medications. Furthermore, the nurses revealed the practical challenges of administering certain medications, and this allowed the pharmacists to recommend more feasible alternatives. Certain medications (i.e. injectable antipsychotics) were not effective or safe, if they were not administered in the correct body site or at the right time. The nurses and the pharmacists worked together to rectify any deviations from standard operating procedures, in order to ensure medication safety and efficacy.

...Interprofessional Collaboration in the Hospital Pharmacy Setting continues on next page...

OPINIONS- Interests and Perspectives

Interprofessional Collaboration in the Hospital Pharmacy Setting Cont'd...



The benefits of interprofessional collaboration also became apparent to me as I observed the communication between the pharmacists, physicians, and medical residents. The side-effects of certain drugs mimicked particular disease states, and the pharmacists worked alongside the medical residents to facilitate the identification of drug-related causes of harm. For example, the pharmacy team often worked with the residents to differentiate stimulant-induced psychosis from schizophrenia. The partnership enabled the patients, who had experienced stimulant-induced psychosis, to avoid unnecessary treatment.

Had the resident treated these patients with antipsychotics, they could have potentially undergone irreversible harm, including movement disorders such as tardive dyskinesia. When the antipsychotic was appropriately prescribed by the physician, members of the pharmacy team helped the resident differentiate dose-related versus idiosyncratic (unpredictable) side-effects. Each type of side-effect is managed differently. For example, dose-related side-effects were easily managed via dose reduction, whereas idiosyncratic side-effects were better managed via drug discontinuation. The alliance with pharmacists saved the residents a lot of time, as they would have otherwise had to use an empiric trial-and-error approach while treating patient side-effects. Thus, discussions between pharmacists, residents and physicians lead to better side-effect management, patient satisfaction, and patient adherence.

It is very clear to me that interprofessional collaboration is imperative in the hospital setting. While working at Kingston General Hospital, I learned to appreciate the contribution of different members of the team, including social workers, nurses, and residents, among many others. Each professional had an overlapping role, creating a safety net and facilitating optimal patient recovery.

Sources for Images Used:

The Canadian Interprofessional Health Leadership Collaborative (CIHL). Retrieved from, <http://cihlc.ca/>



OPINIONS- Interests and Perspectives

Released Prisoners Receiving Psychotropic Medications are Less Likely to Commit a Violent Crime

Seiwon Park, 1T7

One third of released prisoners in the US and UK commit violent crimes. Pharmacological medications can reduce the risk of reoffending. This cohort study looked at all released prisoners (22, 275) in Sweden from July 1, 2005, to December 31, 2010. Rates of violent reoffending during medicated periods were compared with rates during non-medicated periods. There were 9915 people who received psychotropic medications. The rate of violent crimes was reduced in those received antipsychotics, psychostimulants, and medications used in addictive disorders: there was a reduction in 21.7 violent crimes per 1000 person years for those taking antipsychotics, 33.9 violent crimes per 1000 person years for those taking psychostimulants, and 27.5 violent crimes per 1000 person years for those taking medications for addictive disorders. There was no reduction in those who received antidepressants or anti-epileptics. This evidence can be used to create policies for prisoners to reduce the rate of reoffending, although further research is required to examine this association.

Reference: Chang Z, Lichtenstein P, Långström N, Larsson H, Fazel S. Association Between Prescription of Major Psychotropic Medications and Violent Reoffending After Prison Release. *JAMA*. 2016;316(17):1798-1807. doi:10.1001/jama.2016.15380

Tips For APPE Success!

Leyla Warsame, 1T7

Over the past couple months of rotations, I've spoken to several 1T7s and graduate students about their experiences during APPEs. I asked about things students did to ensure that not only did they have a great evaluation, but they also took away meaningful lessons from their experiences. So without further ado, here are some tips that helped those students succeed:



Take advantage of the numerous resources available to us through our University of Toronto subscription. Having Lexi-Comp on my phone saved me tons of time whenever a patient or nurse would ask me questions about a drug with which I was unfamiliar. The most useful apps I found were: SpectrumMD (for antibiotics), MD Calc (tons of calculations like CrCl, Meld scores etc.) and DynaMed.



Whether in community or institution, the worst thing a student can do is make up an answer to a question when put on the spot. There is no shame in deferring to your preceptor when you feel out of your depth. In fact, many preceptors would feel much more comfortable when students recognize their limitations and don't risk putting the patient at risk.



This is especially important during non-direct patient care rotations, whether it's research or a project. You may feel like there is a ton of time to work on your project, but make sure to have weekly goals set for yourself, or else you run the risk of cramming all your work into the last week of the rotation.



Your preceptor may be your mentor, but the team can make or break your learning experience on rotations. Make an effort to get to know your team as people! This means creating meaningful relationships with your team members and other health care providers. It may be challenging, since APPE students are in and out of sites, but you never know who you may work with down the line in your career! Pharmacy really is a small world.

OPINIONS- Interests and Perspectives

Become a CSHP Supporter Today!

Erin Cicinelli, 1T7

With so many professional organizations available to join, it can be challenging to decide where to invest one's time and money. Personally, I did not join the Canadian Society of Hospital Pharmacists (CSHP) until my 3rd year of pharmacy school, but I wish I had much earlier in my pharmacy education. If you have any interest in hospital pharmacy practice or residency, consider becoming a CSHP Student Supporter now and take full advantage of everything your membership has to offer! Here are just a few of the many things a CSHP membership can offer you:



1. CSHP Professional Practice Conference (PPC)

The annual PPC is an opportunity to learn about what's new in pharmacotherapy from pharmacists who are leaders in their fields. Topics for the upcoming PPC in February 2017 include Medical Assistance in Dying, Opioid Agonist Therapy, and Indigenous Health and Cultural Safety, just to name a few. The PPC also offers opportunities to learn about residency programs at the Residency Networking Reception* and present your research at the Facilitated Poster Session (abstracts due in early October). CSHP Student Supporters are eligible for a reduced conference registration rate.

2. Subscriptions to the Canadian Journal of Hospital Pharmacy (CJHP), e-Newsbrief, and eBulletin

Our profession is constantly evolving, and the CSHP makes it easy to keep up with all of the exciting changes with these free subscriptions. The CSHP e-Newsbrief is emailed to you weekly and features the latest hospital pharmacy practice news. The e-Bulletin advertises job openings for students and pharmacists from across Canada, and will be especially useful for upper year students as they begin career planning. Finally, with the CJHP, you can stay up-to-date on the latest in research and innovation.



3. Student Summer Internship Opportunity

CSHP Interns have the opportunity to collaborate with CSHP Board and staff in Ottawa on projects to provide support to members and advocate for the pharmacy profession. In addition, past interns have attended meetings and educational sessions and received mentorship from senior CSHP leadership. Applications are typically due in late November, and this paid position is only open to members.

4. Join a Pharmacy Specialty Network (PSN)

If you have a passion for a particular area of pharmacy, consider joining a PSN. Some of the established PSNs include Global Health, Primary Care, and Infectious Diseases. As a student, PSNs offer a chance to network with pharmacists who share your interests, and may open up opportunities to collaborate on research and educational projects. To join a PSN, you must first become a CSHP member and then complete an online application or contact PSN administrators directly.

5. Hospital Pharmacy Student Award

Each year, one CSHP Student Supporter is recognized with this award. The winner exhibits eagerness, dedication, and a positive attitude toward hospital pharmacy through his or her extracurricular activities, research, or experiential training. Applications are due in September, and the recipient is presented with a framed certificate and cash award of \$500 during CAPSI's Professional Development Week (PDW) with travel costs provided by CSHP.

I hope that I have convinced you to join CSHP as a Student Supporter. If so, you can register at the following website: http://www.cshp.ca/membership/StudentSupporter_e.asp. The total cost is \$72.32 for a yearly membership beginning on January 1st. CSHP offers a half-price membership for 4th-year students which expires on June 30th, 2017, at which point you can join as a new member for the 2017-2018 membership year.

PHARMACY SHOUT-OUTS!

Linda Chung, you rock :)

Shout-out to the King of Jitz, you know who you are!

To all the VPs of each year: **AMAZING CHARITY WEEK!** Way to bring everyone together through good food and fantastic activities! All to help benefit amazing charities :D

IT9's congrats on finishing the midterms! We are almost done first semester. Hold on tight!

Josh C (1T9), you are amazing for always being so prepared and sharing your work/notes to help us out! Thanks!

To Brenda of 1T8, sorry I kept talking that day on third floor- I was really caught up with the conversation haha :)

Get HYPED! Pharmacy Athletics are crushing the competition! Come out and support your athletes as they make their playoff runs! Talk to your Athletics Directors Elise and Sylvia to find out which games are playing when. Go Pharmacy Go! Drugs on 3! 1, 2, 3 - DRUGS!

To NATALIE, thank you being a ray of sunshine every single day! :)

ELSA you are an amazing person and I'm so lucky to have a friend like you!!!

Much love (insert heart emoji) to the Events Director Avey and Krista for hosting an amazing Phollies performance!

Shout out to the class of 1T9 for being so supportive and helpful to each other :D

Phillip Kim, thank you for encouraging me to try something new! I wouldn't have tried it without your encouragement :)

Shout-out to Eun Hye Lee for being an awesome last-minute piano teacher. You a legend.

KAT CHAN! What what! Amazing career fair! Fantastic job gathering all the different vendors! P.S. I love pizza :P

Shout out to Ran for always saving the day when there is Tech problems in class!

Samantha Li, u da real mvp

Encouragement

Cheer on Your Buds

fourteen Shout-Outs

DEAR DRUGGIST- Questions from Students

Edmond Chiu of 1T8 asks:
 "In the current pharmacy landscape, how have you been able to leverage your pharmacy training into your entrepreneur activities?"

Ida: Thanks for the question, Edmond! As pharmacists, we are trained to be medication management experts, to serve our patients, and to advocate for them at all times. We do this by prioritizing their safety and working to meet their medication-related needs. Our training also centres around identifying drug therapy problems and applying our knowledge and skills to address them.

Thus, the principles of advocacy, service to others, and finding solutions to problems are the foundation of my entrepreneurial activities. Currently, I am in "for-purpose" entrepreneurship, a term I use to refer to the nonprofit arena. I identified a need in the community (unequal access to mentorship) and decided to do something about it. My nonprofit activities aim to serve youths in the community by advocating for mentorship and promoting their educational advancement. Even if you are interested in "for profit" entrepreneurship, the same principles apply. You provide service to others and create something of value that would help address an existing problem.

Hope this helps!
 Ida

STUDY BREAK

Sudoku Time!

Zarah Khan, 1T9

PS: 1T9 Seizure ALERT ;)

6				2	1		5
		2				4	7
			5	8			2
9	3						
			8		6		
						2	3
2				4	3		
1		4				3	
	5		1	7			8

9 out of 10 adults don't use their inhaler properly!



For **dose assurance** recommend **AeroChamber Plus[®] Flow-Vu[®]** Anti-Static Valved Holding Chamber for all of your MDI patients.

The **only** chamber with a dedicated Inhalation Indicator providing feedback of correct use.

Do not substitute.



* Place it gently in CESCA Group. Medical personnel and patient safety. Review of evidence-based literature. A multi-center study. Registration: 1000000-100-100.

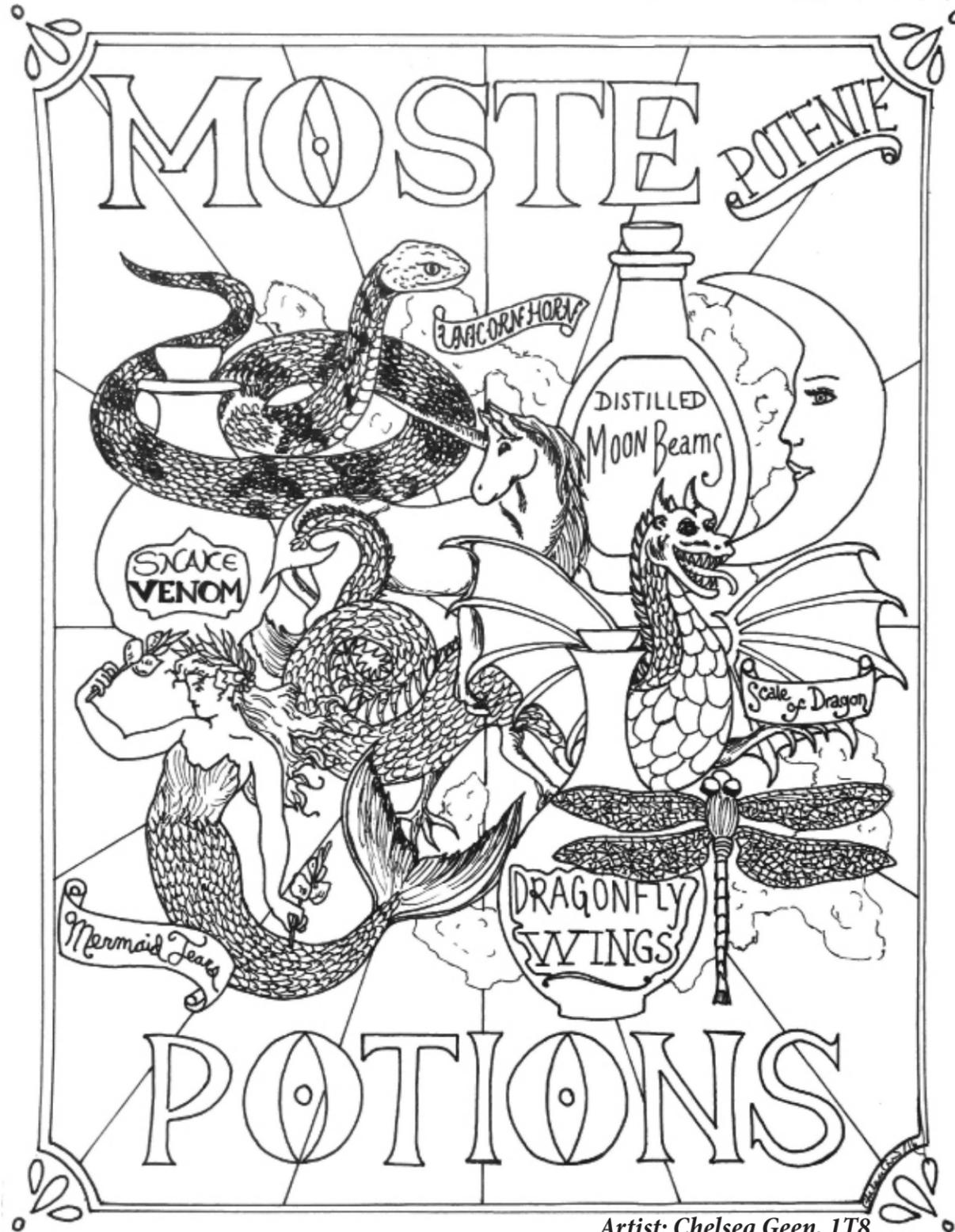


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STUDY BREAK- Colouring Contest*

Name: _____ Year: 2T0 1T9 1T8 1T7

Email: _____ *Colour it in and submit it to the Monograph Box!



Artist: Chelsea Geen, 1T8

STUDY BREAK- Behind the Lens



#StGeorgeStreet
Bailey Hogben, 2T0



#angryisthenewcalm
Arpit Shah, 1T8



#thebeautyofnature
Crystal Ng, 1T8



#thebeautyofnature
Crystal Ng, 1T8



#Lakeview
Tammy Nguyen, 2T0



#NighttheLight
Tammy Nguyen, 2T0

STUDY BREAK- Behind the Lens



#ATHENIA
Hanae Mohamed, 1T8



#BARCA
Hanae Mohamed, 1T8



#THEVATICAN
Hanae Mohamed, 1T8



#WHENINROME
Hanae Mohamed, 1T8