

Pharmacy Phile



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Once again, the countdown can begin

The beginning of the end

Well, we have passed the midway point and the end of the term is coming into sight. The last month has definitely been a busy one with many events and updates from SOPhS. The newsletter has also undergone a new addition: a Self Care Guide. Check out the first article on Page 9 for how to manage the common cold.

Social Committee's Halloweek activities were very successful. Pumpkin carving kicked off the week and pharmacy students let their creativity shine. Donations for the Food Bank came in, which demonstrated the generosity of our student body. Friday's costume competition was yet another chance for students to show off their creativity. Congrats to Noah, who was the winner with his Team America marionette costume. The week rounded off with drinks at Zeke's- the perfect way to wind down after a grueling IPFC final.

Rx2011 wrote the Jurisprudence exam last month. This exam is a requirement for the issuance of a certificate of registration as a pharmacist in the province of Ontario. OCP's website states that results of the exam can be expected within 4 to 6 weeks, so hang in there!

Last month, SOPhS held a Student Issues meeting. These meetings are a means for students to

come out and voice any concerns or issues they are having in their experiences in the UW School of Pharmacy. Additionally, students can let SOPhS know what they particularly like about certain courses or the way things are going. SOPhS representatives have met with university administration and discussed the concerns brought forth. To see the results, check out Page 3. If you have any additional feedback, concerns or comments, please write to us at pharmsoc@uwaterloo.ca.

As usual, thank you to all the authors for your contributions this time around. If you are interested in submitting an article please contact me at pharmsoc@uwaterloo.ca.

Good luck to everyone over the next few weeks as Rx2011 finishes off the term and Rx2012 wraps up their co-op placements. Don't forget about Remembrance Day tomorrow and take care until next time.

Jean Cameron
Communications Director

CAPSI Symposium on Remote Drug Dispensing

When: November 18th, 5:00 - 7:00 pm
Where: PHR 1004
All students and faculty are invited to attend.
Please RSVP to waterloocorep2@caps.ca if you are not in Rx 2011.
Stay tuned for more details.

H1N1 Update

The H1N1 pandemic, showcased in the news for months, is upon us. Speculation continues on the severity of the virus and how widespread the illness will become. The blitz of media coverage has ignited a panic that I'm sure those of you on co-op in community pharmacies have witnessed.

Protect Yourself

This virus is a threat. As frontline health care providers it is important to protect yourselves and promote safe practices to others. Vaccination is the only form of prevention. Most co-op students are considered "high risk" and are eligible to get the vaccine ahead of the public. Wash your hands thoroughly, and often, for at least 20 seconds or use an alcohol-based hand sanitizer. If you are working in a pharmacy, encourage safe and effective infection control practices, such as keeping PPE on hand and surface cleaning/disinfection. Also, try to stay generally healthy. Eat well, exercise and take your vitamins, particularly at least 1000 IU of vitamin D (most of us Canadians do not get enough) and vitamin C for immune function.

Know the difference between H1N1, seasonal flu and a cold. H1N1 has similar symptoms to the seasonal flu, including cough, fever, sore throat, runny nose, headache and body aches. H1N1 is a different type of flu virus than those that usually cause the seasonal flu. Colds are less likely to cause fever or body aches, and usually include nasal congestion. If you come down with Influenza Like Illness (ILI), see a physician immediately. If you need antiviral medication, they are only effective within the first 48 hours. Drink fluids and get plenty of rest. Stay home. Take OTC products to manage symptoms (e.g., acetaminophen or ibuprofen for fever or body aches). You may wish to be proactive and keep some basic OTC products at home to avoid trips to the pharmacy if you become ill.

Provincial Supply of Antivirals

Antiviral medications are a tool that can be used to achieve an important objective in Ontario's response to an influenza pandemic: to reduce morbidity and mortality. If used properly, antiviral medications can reduce the length of illness and complications resulting from influenza. As part of its pandemic preparedness program, Ontario maintains an antiviral stockpile in sufficient quantity to treat 25 per cent of Ontario's population.

To ensure antiviral medications are available to those who need them this flu season, the Ontario Pharmacists' Association (OPA) has partnered with the Ministry of Health and Long-Term Care (MOHLTC) to develop a strategy to deploy

components of the provincial antiviral stockpile to pharmacies in the province of Ontario.

The antiviral medication oseltamivir (Tamiflu®) has currently been distributed to all pharmacies across the province in both the adult (75mg) and pediatric dosages (45, 30mg). The quantity shipped to each pharmacy was pre-determined by MOHLTC based on an estimate of the population, volume and demand. The antiviral Zanamivir (Relenza®) may be released at a future date. The government supply must be kept separate from the pharmacy's inventory.

Tamiflu® has been distributed at no charge to the pharmacy. Upon dispensing, a \$7 professional fee may be billed to OHIP. Therefore, the patient will receive the drug at no cost. For pediatric patients or those who cannot swallow capsules Tamiflu® may be compounded with Ora-Sweet SF syrup; however, the vehicle is currently backordered by the manufacturer. They are currently working to make enough to meet demand, but at the moment pharmacists may use other vehicles. Contact drug information, e.g., DIRC for subscribers, for more information. For compounded oral liquid a professional fee of \$11 may be charged to OHIP.

The government stock is not indicated for pre-exposure prophylaxis, except in limited cases, e.g., an influenza outbreak in a closed facility. Generally, if a prescription is written for Tamiflu®, it is assumed that the prescriber has made the right decision and the pharmacist is not required to contact the prescriber to verify the prescription indication; however, professional judgement should be exercised. Treatment doses are prescribed BID x 5 days, while prophylaxis doses are prescribed OD for 10-14 days. If an unusual prescription is received, written outside of usual prescribing practices, e.g. large quantities, suspected fraud, or multiple Rx's, the prescriber should be contacted as necessary. Those prescribed Tamiflu® for prophylaxis who do not meet ministry requirements may get it out of the pharmacy's private inventory. They will have to pay for the medication or use a private insurance plan. Note that nurse practitioners can prescribe both Tamiflu® and Relenza®.

More detailed information about H1N1 can be found at <http://opatoday.com/H1N1FluVirus.asp>. Here you can find a link to the Pandemic Preparedness Kit by Ontario Community Pharmacies (OCPH), various links on antiviral dispensing by pharmacists including great FAQs, resources for pandemic planning, and important health notices issued by the MOHLTC. You can also email OPA at info@opatoday.com with further questions.

IMPORTANT DATES:

Fall 2009 & Winter 2010:

- Rx 2011 Lectures End: Saturday, December 5th
- ELPE (in the PAC): December 8th
- Rx2011 Exams Begin: December 9th
- Rx2011 Exams End: December 15th
- Tuition payment deadline: certified cheque/money order/promissory note: December 17th
- Rx2012 Final Evaluation: December 24th
- Rx2012 Patient Safety Learning Log: December 24th
- Tuition payment deadline: bank payment or international wire transfer: December 29th
- Rx2012 Final Reflection: January 5th



SOPhS Update

Student Issues Addressed

Rx2011 is burning the midnight oil studying yet again, Rx2012 is tearing up the workplace and Rx2013 is getting ever-closer to joining our ranks in January, 2010; MacMaster Medical students have moved in next door and the courtyard between the two buildings has been completed; things are really taking shape at Waterloo! Last month students provided great feedback during our Student Issues meeting. This article aims to provide you with the response we have received from SOPhS' latest meeting with administration. We will also be following up on unresolved issues in upcoming issues of *Pharmacy Phile*.

General list of concerns:

The following was communicated to Jake and Ken and will be addressed further in a meeting with Dr. Waite this week:

- Lack of timely feedback;
- Shortened lectures;

- Posting of notes within a reasonable timeframe before classes and in plain format;
- Adjusting office hours to reflect openings in students' schedules;
- The organization of lessons/files on ACE; and,
- The lack of coordination on due dates and exams.

The discussion wasn't all bad; we also communicated the positive comments from students regarding some of our classes and what is liked about them.

Library Hours:

Library hours are being revisited. Staff will work to optimize student accessibility while remaining efficient. Not all students utilize the library consistently; however, we will work with staff to find a happy medium between accessibility and efficiency. Furthermore, concerns surrounding articles in the library were raised and are being investigated.

Residency: See article on Page 4.

Continued on Page 4.

2-52 Henry St. Kitchener, ON

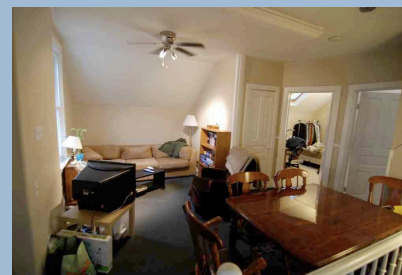
1 Bedroom available in a 2 Bedroom Apartment. 4 month sublet to be shared with myself, a fellow pharmacy student, from Jan – April.

- Only 10min WALK from the Pharmacy building
- Upstairs of a two story house
- Kitchen, living room, 1 bathroom
- New oven, fridge, newly renovated kitchen
- Quiet neighbourhood

Rent \$450 all inclusive (except internet and cable)

Email me if you want more information or more pictures.

Contact: Ryan Petryschuk – ryanpetryschuk@gmail.com





Continued from Page 8.

Evaluation of courses and lecturers:

As a result of the student feedback received, a representative will sit in on our lectures and provide an evaluation of courses and lecturers. Additionally, concerns regarding the validity of using the Science Undergraduate course evaluations were raised and, in response, administration has committed to developing an alternative evaluation process better suited to the School of Pharmacy. Details are TBD.

Co-op Concerns:

The co-op process can be a source of stress and anxiety for students, especially those involved in the 2nd round of co-op placement. This stress was compounded by the recent departure of our lead pharmacy co-op coordinator. The discussion of this topic led to an update on the current state of affairs regarding co-op. The school has hired a highly qualified individual to fill the co-op coordinator position.

Additionally, this position will become full time, thereby increasing accessibility and service to students. First impressions of this individual are that he is dynamic and comes to us with an impressive background. Our next goal is to meet with the individual to relay what hasn't worked in the past and reevaluate the co-op process following the next rounds in January and May of 2010.

HPRAC/Pharm D Townhall:

Dr. Thiessen and Dr. Waite will be head-lining a town hall meeting later this month to address concerns regarding HPRAC's recommendations, incoming legislation, the current entry level PharmD situation and to discuss any plans regarding potential bridging between Bsc Pharm and PharmD. Your attendance is highly encouraged. Details regarding when/where the meeting will take place are forthcoming. A similar meeting will take place in the new year for 2nd and 1st year students.

Random updates:

- A toaster and additional microwave have been purchased for the student lounge. Keep an eye out for these this week.
- The goal is to purchase a ping pong table for the lounge by the end of this week.
- TV Satellite: Work order sign, sealed, & delivered – We just need it to be installed!
- The key for the DVD player in the student lounge is available to students at the reception desk with your Watcard.
- Senior students (3rd and 4th year) will be offered the opportunity to nominate and select one of their peers to become voting members of several School of Pharmacy Committees including: Admissions, Petitions and Curriculum. This is an excellent opportunity that will open up in May/10; details to follow.

Hospital Residency Program

A residency in Pharmacy Practice is a 12 month postgraduate program completed in an accredited hospital in Canada. There are currently more than 25 accredited residency programs in hospital pharmacy practice in Canada providing over 100 positions per year. The goal of the program is to provide students structured rotations in pharmacy practice, education, research, and administration. Completion of a residency program will prepare individuals to be highly skilled hospital pharmacists.

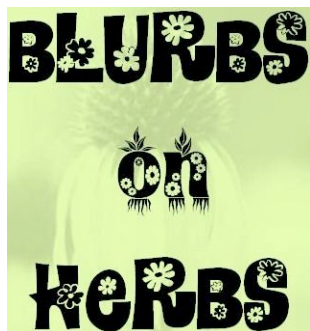
Currently, all residency programs have a June/July start date across Canada. University of Waterloo pharmacy

students will not be able to begin residency programs at those times since graduation will not occur until August. This issue will be addressed and discussed at the next OB-CSHP council meeting by Mike Collins and Pawel Przeracki on November 12-13th, 2009. Further information will be available about what CSHP intends to do about this issue after the council meetings.

If you would like further information about Hospital Residency programs or about the application process please refer to the CSHP website: www.cshp.ca/programs/residencytraining

- Pawel Przeracki

(Reference: Your Road to Success – Residency in Pharmacy Practice. CSHP)



“The origin of the ‘witch’ in witch hazel has been attributed to an Old English term for pliant branches... Y-shaped forked branches that were used as the source of divining rods, and the name became transferred by colonists... Those who dowsed for water were called ‘water witches.’”—
Canadian Medicinal Crops, NRC Press (1999).

Issue 9 – Witch Hazel (*Hamamelis virginiana*)

(aka: winterbloom; café du diable; snapping tobacco wood)

Witch hazel is one of the most popular medicinal plants and has been in high demand for centuries as a poultice or infusion used externally to treat wounds and bleeding. This knowledge was first acquired by North American Indians, followed by colonists then Europeans. Witch hazel was recently re-listed in the US Pharmacopeia (1995) after an 85 year absence. It has still remained a popular herbal remedy in health food stores and pharmacies.

Description and Habitat: Witch hazel is a small deciduous tree that grows to 5 m high in secondary and old growth forests throughout the eastern and central US (south of the Great Lakes) extending northeastwardly into Nova Scotia. It consists of several crooked, grey-barked branching trunks, and bears elliptic, coarsely



toothed leaves with prominent veins. The leaves drop off in early fall and give way to a nut containing two black seeds that are ejected in the summer when the nut ripens. Yellow flowers appear in October or November.

Medicinal Constituents: Witch hazel's medicinal value is primarily due to its astringency, owing to the high tannin content of the plant (leaves: 8 - 10%; bark ~12%). Internal consumption of the plant (as a bitter tea) should be done with caution as the plant is hepatotoxic in high oral doses due to the presence of eugenol, acetaldehyde, and safrole, a carcinogen. Other active constituents (in the bark and leaves) include gallic acid, myricetin, quercetin, kaempferol, and catechols. Witch hazel also possesses styptic and anti-inflammatory properties, and has indirect antibacterial properties related to its astringency.

Medicinal Use: Witch hazel is seldom used orally, but has been used traditionally to treat diarrhea, mucus colitis, tuberculosis, colds, fevers, and dysentery. Topically, witch hazel is used for mucous membrane, skin, and eye inflammation (traditionally applied to eye tumours), itching, abrasions, varicose veins, hemorrhoids, bruises, insect bites, minor burns, etc. In the middle of the 19th century, witch hazel water, a product prepared by steam distillation of the dormant twigs to which alcohol was added, was developed and popularized and is still marketed today. It is indicated for various skin conditions. Witch hazel is common in toilet water,

aftershaves, mouthwashes, cosmetics, and ointments.

Typical Dosages: Orally: 2 g of dried leaves tid as a tea is typical (steeped in 250 mL of boiling water for 5 - 10 minutes). Topically: (1) compresses: 5 - 10 g of leaf/bark simmered in 250 mL of water; (2) poultice: witch hazel water undiluted or diluted 1:3 with water; (3) lotion: 1 - 2 drachms/oz. water applied to bruises; (4) ointment: applied liberally to piles; (5) mouthwash: 2 - 4 mL of extract (1:1) diluted into water; and (6) suppository: 0.1 - 1 g of leaf/bark (equivalent dried weight) per suppository inserted 1 - 3 times daily.

Evidence: Traditional evidence supports the use of witch hazel for hemorrhoids (it is moderately effective at temporarily relieving itching, discomfort, irritation, and burning), as a styptic (it reduces minor bleeding) and for relieving mild skin irritations (although it is less effective than hydrocortisone). A recent trial involving children with chronic eczema found witch hazel to be ineffective. Another recent study showed that witch hazel extracts were highly effective against a variety of anaerobic periodontal bacteria. Witch hazel use in dentistry is commonplace.

Witch Hazel in Pharmacy Practice: When used topically and appropriately, most witch hazel products are generally safe, although some patients may develop contact dermatitis. Products containing witch hazel can be found in most pharmacies, including witch hazel (or hamemalis) water.

Jason Budzinski (Pharm 2011)



Undergraduate Student Affairs

Can Students Gain Admission to UW's Pharmacy Program from High School?

Of course not. In order to adequately prepare students for the professional practice of Pharmacy, there is a huge amount of learning that must take place. This is achieved, as you know, by entering the four year BScPhm degree after having attained a solid understanding of some basic subject matter in the sciences and mathematics.

We have, however, launched a new program called the Conditional Admission to Pharmacy (CAP) program for outstanding high school students! This exciting program allows a select group to be conditionally pre-admitted to the UW Pharmacy program. Perhaps you have a younger sibling, other relative, or friend of the family who is interested in the profession. If so – read on. If not – please read on anyway.

In order to qualify for the CAP program, students must satisfy the following requirements:

- ◆ $\geq 90\%$ high school admission average (grade 12 final grades), as calculated for the Faculty of Science
- ◆ Eligible for admission to the Faculty of Science
- ◆ Demonstrated leadership, community involvement, and work experience
- ◆ Interest in the profession of Pharmacy – students will need to write about this interest in a short personal letter that is part of the CAP application process
- ◆ Two letters of reference: one academic (teacher, principal, guidance counselor); one from employer or volunteer agency
- ◆ Screening interview with representative(s) of the School of Pharmacy

Students who successfully achieve “CAP Status” then have a number of conditions which they must meet in order to retain it. These include coming to UW for their first two years of undergraduate science and completion of the Pharmacy academic requirements. They will need to achieve a cumulative average of 75%, maintain their

involvement in extracurricular activities, and complete a minimum of 200 hours of Pharmacy-related experience by the middle of second year.

This program was implemented in order to attract outstanding high school students to the University, and ultimately to the School of Pharmacy. It provides assurance that, provided they meet their conditions, they will have a place held for them in the Pharmacy program. Other advantages to the students include the opportunity to connect with the School's current students, faculty and staff so that the transition to Pharmacy is smooth. We hope that SOPhS will take the opportunity to mentor these promising students and make them feel welcome even though they will not initially be full members of the School.

We have reserved 20% of the class size (24 seats) for the CAP students in this initial launch. The first group will commence their undergraduate studies in Sept 2010, and be ready to join the Pharmacy class that begins in Jan 2013.

So – if you know of anyone who is very interested in Pharmacy and may satisfy the above criteria, please refer them to the CAP section of our website (<http://www.pharmacy.uwaterloo.ca/prospective/cap.html>), as well as the CAP tab under the Frequently Asked Questions (<http://www.pharmacy.uwaterloo.ca/prospective/faqs.html>).

If you have any questions on this matter, or if you would like to suggest other topics for this regular Pharmacy Phile column, please send an email to kpotvin@uwaterloo.ca.



Pharmacy Library now offering extended opening hours

Monday-Thursday: 8:30 - 20:00

Friday: 8:30 - 16:30

Saturday & Sunday: Closed



Cheese Cappelletti
Pumpkin's Cooking Corner

Alright, so I've given you a few good recipes. Nevermind all that. The next recipe is phenomenal. In fact, there aren't enough superlatives to describe it. It may infringe on one of the central canons of my column ("inexpensivity"), but you have to treat yourself once in a while, right?

Ingredients:

<ul style="list-style-type: none"> • Butter • Onion • Garlic • Oregano • Basil • 2 lbs Tortellini noodles (cheese-filled) 	<ul style="list-style-type: none"> • 28 oz can diced tomatoes • Tomato paste • White sugar • 250 mL whipping cream • Parmesan, cheddar and mozzarella cheese
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Combine:

- 2 tbsp butter
- 1 chopped onion
- 2 cloves garlic
- 1/2 tsp oregano
- 1 tsp basil
- Sauté for 5 min on medium heat

Add:

- 28 oz can diced tomatoes
- 2 tbsp tomato paste
- 1 tsp sugar
- Cook for 5 min

Add:

- 250 mL whipping cream
- 1/4 cup Parmesan cheese
- Bring to boil then cook on medium heat for 15 min



In a separate pot, boil 2 lbs cappelletti (tortellini noodles) for 8-10 min.

Drain.

Put tortellini in 9" X 13" pan

Pour sauce over

Sprinkle with 1/2 cup Parmesan cheese and 3 cups of shredded cheese (suggestion: mix of cheddar and mozzarella cheeses)

Cover with foil

Bake for 15 min @ 350 °F

Let sit 5 min before serving

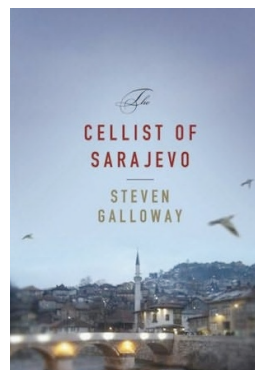
Enjoy!



Your source for great books
Required Reading

Canadian author, Steven Galloway's *The Cellist of Sarajevo* is a national bestseller and a Globe and Mail Best Book winner. Sarajevo is under attack; snipers spend their days sitting on the hills surrounding the city killing and bombing what is left of the city and its population. One afternoon as a cellist sits out on his balcony playing, a bomb kills 22 pedestrians on the street below his apartment. Having witnessed such a horrific sight, the cellist vows to sit out in the street at 4:00 each afternoon for the next 22 days and play his cello to pay respect to the

dead. Unbeknownst to the cellist, a counter-sniper is chosen to protect him from the men on the hills; Arrow carefully poises herself, ready to strike, if and when the time comes. Can she keep the Cellist safe, and at what cost? Though I'm only halfway through the book I highly recommend it. The book is uniquely written, and above all else is a story about persistence of the human spirit in a time of fear and suffering.





Your source for sports

From the Bench

At the time this newsletter is released, intramural regular seasons will be finished and playoffs will be starting next week. Here's the rundown on how each team did:

Advanced Flag Football: The "Deep Ins" finished the regular season in first place with a 5-1 record, and boasts the league's top defense. Blitzing master Matt DiGiovanni pesters opposing QBs all game while offensive threats of Noah Bates and Anthony Amadio carry the bulk of the offense. The highlight of the regular season was an unbelievable performance in week 6, where the Deep Ins scored 7 touchdowns in the first half against "The Dutch Rudders." The beating was so severe that the referee had to call the game at halftime.

Advanced Basketball: "The Technical Fouls" sit at a record of 2-2, with their last few games happening

next week. Their two losses came at the hands of questionable calls from referees. Hopefully the boys, and their lone female, can outplay the remaining foes (and the refs too). Pharmacy athletics still have no basketball intramural championships, but The Technical Fouls hope to change that this offseason.

Intermediate Soccer: "Materazzi's Mob" finished the regular season at 2-2-2. Due to the decreasing temperatures, this league is already deep into the playoffs. Fortunately this squad won their quarterfinal playoff game and has advanced to the semifinal. Stay tuned to next month to see if Pharm soccer managed to win back-to-back intramural titles. When asked if their team stands any chance, team captain Mat "Duzzo" DeMarco replied "Hunnnndrrrrred." Well said Mat.

Advanced Hockey: Pharmacy's most famous intramural team "The

FRIDAY NOVEMBER 13th WOMENS BASKETBALL: Come watch pharm sisters Angela Puim and Gina Hummel play in the home opener against the York Lions this upcoming November 13th. The action tips off at 6:00pm, and admission is free with your Watcard. Come and show your support for our pharmacy varsity athletes!

Remedy" started the season off winless through the first two games. They have come back strong, winning three games in a row to sit at 3-2. One more regular season game awaits, but this team lives for the playoffs. Superstars Ben Austin, Anthony Amadio, Mat DeMarco, Claude Charbonneau, and fan favorite Dan Chenier look to repeat as intramural champions in 2009.

Stay tuned for future updates.

Keep swinging for the fences,
-Greg and Ange

Congratulations Heather Foley (again) Athlete of the Month

For those who pay attention to this section...and I hope there are at least a few...you may have noticed that Heather has already been named athlete of the month back in November 2008. You would think that some other student has managed to impress us enough to get published in this section, but that is not the case. We felt it was appropriate to salute Heather once more before 2009 comes to an end.

While solidly performing in Pharmacy hockey ("The Remedy"), Heather is evidently bored with intramural athletics and has joined the ranks of the Waterloo Warriors varsity Nordic Ski team. It sounds easy...so why not? Dryland training, weekend skate sessions, and various

workouts prior to snowfall should convince you otherwise.

Heather and the rest of the snow lovers start their season in January with races in North Bay, Ottawa, and Waterloo. Heather will be doing her co-op near Windsor next semester, so she will be living her weekend life on the road for various races.

SOPhS Athletics once again salutes Heather Foley as the November 2009 athlete of the month.

Know somebody you think should be an athlete of the month? Let us know at athletics@sophs.uwaterloo.ca





Background:

The common cold is a viral upper respiratory tract infection that affects individuals of all ages. It requires frequent use of over-the-counter, prescription, and alternative medications. There is no cure for the common cold, but symptoms can be managed. Despite the short duration of the illness, the common cold is a huge economic burden in terms of healthcare visits, treatments, and absences from work, school or day care. Rhinovirus is the leading cause with more than 100 serotypes causing the common cold; however, other viruses such as corona, influenza, respiratory syncytial, parainfluenza, adenovirus, and enterovirus are also responsible for the infection.

Epidemiology:

Colds occur throughout the year, but have a lower incidence during the summer months. The frequency of respiratory infections starts to increase during fall, reaches plateau in winter, and diminishes in spring. On average, young children have 6-8 colds per year and adults have 2-4.

Three major mechanisms of virus transmission that cause the common cold:

1. Hand contact with secretions that contain the virus, either directly from an infected person or indirectly from environmental surfaces;
2. Aerosol particles with the virus lingering in the air for extended period of time; or,

3. Direct hit by large-particle aerosols from an infected person.

Pathogenesis:

It is important to note that pathogenic mechanisms vary from virus to virus. The mechanism of rhinovirus infection is the most common and most often studied. The virus is deposited into the nasal cavity and starts replicating in the nasopharynx area. In the adenoid area, the virus enters into the epithelial cells by binding to intercellular adhesion molecule-1 (ICAM-1) receptor. The viral replication begins rapidly and progeny viruses can be detected within 8-10 hours. The shedding of rhinoviruses peaks on the second day after intranasal inoculation and decreases rapidly thereafter, but small amount can still be detected up to 3 weeks.

Symptoms:

Sore throat would be the first symptom to appear when the rhinovirus infection manifests, however, nasal stuffiness and discharge, cough, and sneezing soon will follow. The soreness of the throat would disappear quickly, whereas the clear watery runny nose (rhinorrhoea) will turn thicker, yellow, and purulent. Fever may not be present in many

adults; however, it is fairly common in children with infections of any cause. Other mild and rare symptoms such as headache, hoarseness, malaise, lethargy, and myalgia might be present. Influenza symptoms such as sudden fever (38-40°C), unproductive cough, headache, myalgia, fatigue, weakness, and chills are often confused with overlapping symptoms of the common cold (Bold – symptoms that can help you differentiate between influenza and cold). Overall, the severity of the cold symptoms increases rapidly within 2-3 days after infection, and decreases thereafter. The cold will last from 7-10 days, but some symptoms can be present as long as 3 weeks.

Non-Pharmacological Options:

- Use nasal saline solution to soothe irritated nasal tissue
- Apply petrolatum/Vaseline to a raw nose to increase comfort
- Avoid touching your eyes, nose, or mouth. Cough and sneeze into your arm, not your hand
- Wash hands regularly with soap or use hand-sanitizers
- Get a flu shot to prevent influenza

Pharmacological Options:

For OTC pharmacological options please see the table on page 10.

When to refer to a physician	
If an adult patient has..	If a child has...
Difficulty breathing, wheezing, or chest pain when breathing	Croup or ear infection (Otitis Media)
History of respiratory disease	Excessive lethargy or irritability
Fever (>38.5°C) for more than 1 hour	Skin rash
Severe throat pain, headache, neck pain	Cough associated with vomiting
Prolonged nasal congestion with purulent discharge	Age < 6
Significant reduction in food and fluid intake	

Continued from Page 8.

Symptom(s)	Product(s) with API	Comments
Nasal Congestion	Oral or Topical Decongestants: <ul style="list-style-type: none"> •Phenylephrine (O/T) •Pseudoephedrine (O) •Xylometazoline (T) •Oxymetazoline (T) •Naphazoline(T) 	Single-dose decongestants have moderate short-term benefits for adults and adolescents, but not for children under 12. Avoid prolong use (more than 3 days) to prevent rebound effect with topical decongestants
Cough Productive (Wet)	•Guaifenesin	Has shown modest effects in adults
Cough Non-Productive (Dry)	•Dextromethorphan Hydrobromide •Codeine Phosphate	DM has moderate effects, but CP does not have beneficial effects. These products cause drowsiness so better to take them at night.
Sneezing/Runny Nose	First generation antihistamines: <ul style="list-style-type: none"> •Diphenhydramine, •Chlorpheniramine, •Doxylamine •Many more 	Use cautiously in adults; not recommended for children
Sore Throat	Local anesthetics and antibacterial: <ul style="list-style-type: none"> •Benzocaine •Dyclonine •Hexylresorcinol •Dichlorobenzyl alcohol •Phenol 	Avoid “caine” products if the patient is allergic
Fever, Headache, Myalgia	•ASA, •Ibuprofen •Acetaminophen	These medications may interact with other medications; check for contraindications; avoid ASA and Ibuprofen in children (Reye’s Syndrome); pregnant women have their own criteria you may need to assess before making a recommendation

Vitamin C, Echinacea, and Zinc are not effective in curing the symptoms, but there is mixed evidence that supports them as prophylaxis treatment. Always assess risks vs. benefits before suggesting these products.

Note: Refer to Patient Self Care for details regarding dose, adverse effects, interactions, and general comments. In addition, my literature search revealed that none of the above products are more efficacious than placebo in infants and children (some even have serious side effects at higher doses). Avoid any products with combinations of APIs (costly, unnecessary, and different ratio of APIs).

Selected References:

(Additional references available upon request):

- Pediatrics, Vol 114., No. 1, July 2004
- Seminars in Pediatrics Infectious Diseases, Vol 6, No. 2, April 1995
- The Lancet, Vol 361, January 4, 2003,
www.thelancet.com

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Email me at s46patel@uwaterloo.ca for OTC topics you would like to see in the newsletter.