

RHO_{Rx}CHI post

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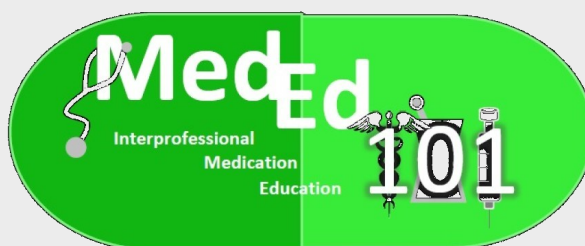
AN AWARD-WINNING, STUDENT-OPERATED NEWSLETTER BY THE
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Meet Dr. Eric Christianson: The Pharmacist of Med Ed 101

By: Tasnima Nabi, Copy Editor [Content-Focused]



Social media is a powerful platform, allowing for the quick and easy exchange of ideas. Although the Internet has facilitated universal access, for many, it can be difficult to find reliable information. By combining the power of the Internet with his dedication to the pharmacy profession, Eric Christianson, PharmD, BCPS, CGP, quickly became one of the most popular pharmacists on the Internet. His blog, Med Ed 101, provides clinical pearls of medication management in an easy-to-read and engaging format to readers all over the world. In addition to posting insight from his personal pharmacy experiences on a regular basis, Dr. Christianson also sends subscribers his "Top 30 Medication Mistakes." His unique contribution to the pharmacy profession through Med Ed 101 offers all students and professionals in the healthcare system an easy way to learn something new every day.

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Single Line Stories

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Recombinant Factor IX(Alprolix™) Brings Hope for Hemophilia B Patients

By: Benedette Cuffari, BS Toxicology Candidate c/o 2015

Hemophilia B is an inherited bleeding disorder that is caused by a substantially reduced or complete lack of blood clotting factor IX. Therefore, people suffering from hemophilia B experience bleeding episodes that cause pain, irreversible joint damage, and life threatening hemorrhages. Approximately 28,000 people are currently diagnosed with hemophilia B worldwide, most of them being male since the disease is inherited in an X-linked dominant way.¹

Hemophilia B is typically treated by periodically replacing the defective clotting factor IX with functional ones. These prophylactic infusions of factor IX are usually given once a week, but can be given up to two or three times a week depending on the severity of the patients' bleeding episodes.¹ Factor IX infusions can also be used to reduce bleeding levels as needed. On March 28, 2014, the FDA approved the release of Alprolix™, or recombinant factor IX, as the first Hemophilia B treatment to greatly reduce the frequency of prophylaxis, as well as reduce the frequency of infusions needed for patients.²

The approval of Alprolix™ has been the first significant advance in hemophilia B treatment in over 17 years. The FDA states that "Alprolix™ is the first hemophilia B treatment designed to require less injections when used to prevent or reduce the frequency of bleeding".² This therapy is indicated for the control and prevention of bleeding episodes perioperative (surgical) management and routine prophylaxis in adults and children with hemophilia B.³

Alprolix™ was approved based on results from the global Phase 3 B-LONG study. The study results showed that adults and adolescents with severe hemophilia B were able to either prevent or substantially reduce their bleeding episodes with prophylactic infusions at least a week apart.³ A total of 123 individuals with severe hemophilia B were used as test subjects during the study, all of which experienced little to no side effects.³ after treatment of

Alprolix™. Some of the adverse reactions that were seen included headache, oral paresthesia (abnormal sensation in the mouth), dizziness, taste alteration, breath odor, fatigue, infusion site pain, palpitations, and hypotension. However, it is important to note that each event listed occurred in two or fewer study participants.

Alprolix™ is also approved in Canada, but is still under review in countries such as Australia and Japan. Researchers are very hopeful for the success of this drug, and the new relief that it will bring to hemophilia B patients around the world.

The approval of Alprolix™ has been the first significant advance in hemophilia B treatment in over 17 years.

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Using Bacteriophage Enzymes to Stay One Step Ahead of MRSA

By: Davidta Brown, Copy Editor [Content-Focused]

It's difficult to have a discussion about antibiotics without mentioning the developing crisis of antibiotic-resistance. Pathogens like MRSA (methicillin-resistant *Staphylococcus aureus*) have become a part of the general public's consciousness – a household name and a community-acquired “superbug.” With the last new class of antibiotics developed in the 1980s, bacterial strains are rapidly out-mutating our ability to contain them.¹ Thankfully, hope in this microscopic arms race is appearing in the form of a new method of bacterial destruction, indicating that perhaps an alternative to antibiotics is only a few years in the making.

Bacteriophages, viruses that infect bacteria, release lytic enzymes called endolysins that perforate the bacterial cell wall on their way out of an infected cell and toward a new bacterial host cell.² In the past few years, researchers have been manipulating this technique in the hopes of creating lytic substances that can be administered from the outside, rather than the inside, of pathogenic bacterial cells. One experiment evaluated the efficacy of bacteriophage endolysin SAL-1 as therapy against *S. aureus* infections. The stability of the endolysin was improved by incorporation of calcium ions and Poloxamer 188, creating a compound referred to as SAL200.³ Impressively, SAL200 showed quick and effective antibacterial activity against *S. aureus*, and what's more, 336 MRSA isolates and 1 VISA (Vancomycin-intermediate *S. aureus*) isolate were susceptible to the compound.³

Another study tried to improve the solubility of bactericidal endolysins by combining the desired lytic active site of one strain of endolysin with the soluble portions of endolysins from another species.² The recombinant endolysins contained staphylolytic activity as well as the solubility of the enterococcal endolysins from which they were partially derived. As a

result, they offer an answer to the difficulty of large-scale production, a process that would otherwise be hindered by poor solubility.²

Scientists around the world are pursuing this new avenue of antibacterial processes. If such progress continues, compounds like the LysK enzyme or PlyGRCS may soon be on their way to clinical trials.^{4,5} Without a doubt, the need to develop creative antibiotic alternatives to battle resistant species is becoming more and more pressing. Experimentation with endolysins suggests that bacteriophage viruses may already be employing the innovative methods that are so desperately needed.

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FDA Defends Generic Drug Labeling Plan

By: Nancy Simon, PharmD c/o 2016

Last November, the Food and Drug Administration (FDA) submitted a proposal for a Generic Drug Labeling Plan. This new plan will allow generic drug companies to use the same process as the one used by brand drug companies to update their medication labels to reflect new safety information.¹ The goal is to give the most updated drug information to the patients who are taking generic medications in a more timely manner. However, the Generic Pharmaceutical Association (GPhA) seems to oppose certain aspects of this plan.

Currently, brand drug manufacturers are required by law to immediately warn doctors and consumers by mail or by updating their product labels when there is clear evidence that a prescription drug has caused harm to patients. "Federal law does not allow the makers of generics to change the safety warnings on their labels in response to new information until the maker of the branded equivalent has done so, and the change has received approval from the Food and Drug Administration," states Joe Carlson, a writer at Modern Healthcare magazine.²

Until now, unlike the brand-drug manufacturers, generic drug makers could not update their medication labels until the changes in the brand drug labels were approved by the FDA. Janet Woodcock, Director of the Center for Drug Evaluation and Research at FDA states that "approximately 80 percent of drugs dispensed are generic, and brand drug manufacturers may discontinue marketing after generic drug entry. This involves a process that brand drug manufacturers currently follow," outlining the reason for this proposal.³

The Generic Drug Labeling Plan would ensure faster dissemination of safety information to the public for both brand-name and generic drugs through medication labeling. Although the FDA acknowledges that there might be a time lapse between labeling changes made by the different manufacturers, the FDA believes generic companies should update their own product labeling as soon as new information is acquired through methods such as post-marketing surveillance.³

Currently, brand drug companies submit new medication labeling using a "CBE-0 supplement",

which stands for changes being effected.³ The brand drug company can update the medication labeling immediately, while the FDA reviews this change. After getting approval from the FDA, the generic drug company can follow suit.³ If passed into law without changes, the proposal will allow generic drug companies to make changes to their drug labeling through the same "process that brand drug manufacturers currently follow."³

The provision would let generic drug companies submit a CBE-0 supplement on their own while waiting for the FDA to approve the changes, just like brand drug companies.³ In addition, generic drug companies would also be required to provide information that supports the change, which would be promptly forwarded to the brand drug company unless that brand drug has already been withdrawn from the market.³ This would allow the brand drug manufacturer to be immediately notified when the generic drug company makes labeling changes based on important new safety data that emerges for the drug's generic counterparts.³

The updated safety information can then be sent out to notify prescribers and consumers. The FDA plans on making this information readily available to the public by dedicating a webpage, or modifying an existing FDA webpage, onto which the FDA would post information regarding labeling changes proposed in a CBE-0 supplement.³

This webpage would show pending CBE-0 supplements for safety-related labeling changes, a link to show current labeling for the affected drug product, the approval status of the CBE-0 supplement, and whether the administration has taken action or have determined that the supplement may be irrelevant.³ The CBE-0 supplements would remain available on the webpage until the FDA has fully reviewed them and has issued an action letter.³

If approved, the labeling will also be made available on the proposed webpage.³ This online resource would be a way for brand drug companies to keep track of which generic drug companies are submitting medication labeling updates, and for health care providers and consumers to obtain the

BACK TO COVER

most current information about the safety of prescription medications as well.³

The new proposal allows generic drug companies to submit their own medication labeling changes to alert healthcare providers and patients with new safety information, but there may be some disadvantages to this idea as well, according to the GPhA. If this proposal is finalized without changes, generic drug companies will also be subject to “failure-to-warn” claims, which are currently only applicable to brand drug companies and is more than what generic drug companies may be used to.³ Failure-to-warn simply means that the company failed to inform health care providers or consumers of potential hazardous effects of the drugs.

Since brand drug companies have the responsibility to update their medication labels right away, they are held accountable if they fail to warn health care providers, consumers, and the FDA of safety issues such as information on contraindications or adverse effects in a timely manner through changes or additions to drug labeling. For example, “in *Pliva v. Mensing*, the Supreme Court decided that Federal law does preempt a state law failure-to-warn claim that a generic drug’s labeling did not contain an adequate warning,” which meant that the drug company, Pliva Inc., was not subject to the failure-to-warn claim as a generic manufacturer because the Federal law takes precedence over the state law.³

Ralph Neas, the president of GPhA, stated that the proposal would lead to an increased number of lawsuits against generic drug companies.¹ “If the CBE-0 supplement process is made available to makers of generic drugs, as proposed by FDA, those manufacturers would no longer be shielded from these liability claims.”¹ Bruce Roberts, a plaintiff attorney, also stated that “once they’ve been given the right to change their label, they get the right to be sued for failing to change their label.”⁴ It is unclear whether this would be “fair” for the generic drug companies; however, if implemented whether with or without changes, it would make the generic companies another participant in further assuring the safety of consumers.

The FDA’s proposal could also impose significant costs on not only the drug industry, but consumers as well.⁵ Now that there is more liability involved, generic drug companies would be responsible for knowing the full effects of their drug products, and

this may cause an increase in generic drug prices or a decrease in the number of generic drug manufacturers, according to some.⁴

Matrix Global Advisors, an economic consulting firm, published a study in February that estimated an annual increase of five percent in generic drug spending.² Neas stated that the proposed regulation is a “draconian,” or excessively harsh, departure from the trend in lawmaking in the past 30 years.⁴ He also expressed that generic drug makers are urging FDA to modify the proposal so that the FDA, instead of the generic manufacturers, would be responsible for making the necessary changes to generic drug labeling.⁴

But this opinion from the president of GPhA—an association of generic manufacturers—should be taken with a grain of salt, because a change to the regulation in this way may also increase the tax-payer’s burden to support the FDA in its venture to improve the patient’s safety in using prescription medications.²

It is true that the prices of brand drugs can be extremely high for patients, and that generic drugs with lower price tags are usually the preferred option by patients. However, this proposal will bring us one step closer to being able to guarantee that the patients who take generic medications are just as shielded from medication safety issues as those who can afford brand name medications.

If this proposal were to pass without changes, generic drug prices may potentially increase. The FDA proposal would require generic drug manufacturers to make updates to their medication labels and quickly notify health care providers and consumers with crucial safety information. With more power comes more responsibility, which then leads to more liability, which will ultimately lead to higher generic drug costs. On the other hand, if the proposal is passed with changes suggested by the GPhA, the burden on tax-payers may increase.

As healthcare professionals, our goal is to keep the patients safe and healthy. If finalized and correctly implemented, this proposal “is intended to improve the communication of important drug safety information about generic drugs to both prescribers and patients,” said Woodcock.³ However, foreseeing the rise in generic drug prices, it would be interesting to see what implications the decision may have down the line.

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Below are some FAQ; please email us for any other concerns!

Who can join the Rho Chi post? Do I have to be a member of Rho Chi?

You do not have to be a member of the Rho Chi Honor Society to contribute to the newsletter. You can be in any year of your Pharmacy education to join the Rho Chi Post. In fact, any member of the College of Pharmacy and Health Sciences can join our team!

What positions can I apply for to become a permanent member of the team?

1. Staff Writer: Commitment per issue: 2 contributions- either pieces that you write or pieces that you get from your friends
2. Staff Designer
 - Web based: Commitment per issue: Redesign and upkeep of the website
 - Graphic based: Commitment per issue: Any graphic designing that goes into creating the issue.
3. Staff Editor: Commitment per issue: 1 contribution, 2 articles edited
 - Note: for this position you need to show past editing experience.

What can I write about?

Feel free to write about any topic that interests you! Please just email us with your topic so there are no duplicates. For suggestions check out our list: <http://rhochistj.org/RhoChiPost/article-signup/>

*Log in username is required

How long will it take to review my application?

After we accept your article for publication, we will respond to you via email within 7 days.

Besides the article requirement, how time consuming is being a member?

We only meet a few times each semester! Most of our communications are done online. Besides the meetings just meet your monthly requirements!

Are there any dues?

No dues are required to become a member!

If you don't want to commit to a permanent position, we welcome any submission at any time.

There is no minimum or maximum to how many articles a person can submit!

The Difference in Guanfacine Formulations for ADHD

By: Katharine Cimmino, Editor-in-Chief

CLINICAL

Attention-deficit/hyperactivity disorder (ADHD) is the most common pediatric psychiatric disorder, and it affects the education, social interactions, and over-all wellbeing of both children and adolescents.¹ Symptoms of ADHD can persist into adulthood, and those with this disorder are more likely to suffer from other mental health comorbidities.² According to guidelines from the American Academy of Pediatrics, a school-aged child or adolescent diagnosed with ADHD should be prescribed FDA approved medications and/or receive behavioral therapy. Evidence for stimulant medications is stronger than for other classes of drugs such as atomoxetine, extended-release guanfacine (GXR), and extended-release clonidine. However, up to 30% of children may not respond to stimulants or may not tolerate side effects of these medications.³ Furthermore, a significant number of patients are nonresponsive to treatment and require adjunct therapy to stimulants.⁴ Extended release guanfacine (Intuniv®) is one FDA approved non-stimulant for the treatment of ADHD. Currently, the immediate-release formulation of guanfacine (GIR) is not approved by the FDA for the treatment of ADHD, but it has been used off-label for over a decade.⁵

Comparing the pharmacokinetic profiles of GIR and GXR provides a better understanding of the differences between these formulations.

Pharmacokinetic properties of Guanfacine⁶⁻⁹

Property	GIR	GXR
Tmax	2.6 hours (range: 1 to 4 hours)	5 hours
Vd	6.3L/kg	23.7L/kg
T1/2	13-14 hours	17 hours (± 4 hours)
Metabolized	major substrate of CYP3A4	
Excreted	Approximately 50% of the dose is eliminated unchanged in the urine. The metabolites are primarily excreted in the urine	

As evidenced from above, one limitation of the GIR formulation is its pharmacokinetic profile.

Rapid absorption of the drug leads to high peak plasma concentrations that cause the unfavorable side effects of sedation, dry mouth, and hypotension. Despite the relative long half-life (~17hours), pharmacokinetic studies show a rapid decline after a dose. In hopes to avoid these high peaks, smaller doses are given at more frequent intervals. However, this can be problematic because it increases the pill burden on the patient and could decrease compliance.¹⁰

In a meta-analysis of monotherapy and multi-drug regimen trials for stimulant therapy, randomized controls trials studying guanfacine and clonidine were examined. In total, five guanfacine trials were analyzed- one GIR study and four GXR studies. The studies showed that for monotherapy, GXR was significantly superior to placebo for total ADHD symptoms. In addition, GIR was no different from placebo in any category. For hyperactive and inattentive symptoms, GXR (two trials) was found superior compared to placebo and GIR (one study) showed no statistical significance. However, it should be noted that there were more trials conducted on GXR.¹⁰

In another systematic review and meta-analysis, randomized control trials on the safety and efficacy of guanfacine in the pediatric ADHD population were examined. A total of seven studies were examined; six studies evaluating GXR and one study evaluating GIR. All studies were double blind, parallel group studies comparing guanfacine with placebo. The pooled analysis showed that 59% of children benefited from guanfacine compared to the 33.3% in the placebo group. When the study of GIR was excluded from the analysis, the efficacy results were unchanged. The pooled odds ratio was 3.18 (95% CI 2.44–4.13). The number needed to treat was 3.9 (95%CI 3.3–4.8). Between study heterogeneity was 26% (P=0.23). When examining safety, only 6 studies were included (the study with GIR was excluded because the authors did not report the number of participants who experienced at least one adverse effect). Pooling data from the 6 studies, the most common treatment-emergent adverse effects were somnolence (30.1%), headache (19.4%), fa-

tigue (11.5%), and upper abdominal pain (8.6%). Overall, the 948 (82.4%) participants receiving guanfacine experienced at least one treatment-emergent adverse effect compared to the 376 (67.9%) receiving placebo. The pooled odds ratio was 2.62 (95% CI 1.57–4.38). Between study heterogeneity was 74% ($P=0.002$). Compared to placebo, the meta-analysis confirmed a favorable risk benefit profile for guanfacine for the treatment of ADHD.¹¹ Again though, the limitation was that there was only one GIR study to pull data from.

Currently there are no head-to-head randomized controlled clinical trials that examine GIR versus GXR in the treatment of ADHD. A retrospective study comparing treatment patterns, resource utilization, and healthcare costs was conducted by Sikirica *et al* and compared GIR to GXR in children and adolescents with ADHD. During the 6-month study period, GIR users ($n=743$) had significantly higher rates of treatment discontinuation (adjusted hazard ratio [aHR]= 1.79; $P<0.001$), switching (aHR= 2.32; $P<0.001$), and augmentation (aHR=1.55; $P=0.003$) than GXR users ($n=2344$). GIR users had significantly more frequent all-cause inpatient admissions ($P=0.022$) and emergency department visits ($P=0.016$). While GIR users had lower all-cause pharmacy costs ($P<0.001$), they had significantly higher medical costs ($P=0.009$). This resulted in no significant difference in total all-cause healthcare costs between the two groups ($P=0.68$). Overall, after adjusting for baseline differences, the retrospective analysis found that GXR use was associated with lower rates of therapy adjustment and fewer ED visits compared to GIR use in children and adolescents with ADHD.²

When choosing an ADHD medication for children and adolescents, many factors need to be considered. Because GXR is FDA approved for ADHD, there is more evidence for its efficacy. However, the initial pharmacy cost of GIR (approximately \$0.872 for one 1mg pill and \$1.176 for one 2mg pill) may be cheaper than GXR (approximately \$11.65 per pill).¹² In addition, overall medical costs should be considered when evaluating cost effectiveness. Therefore, patients should be managed individually, with care tailored toward their specific needs.

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Interview: Med Ed 101: Dr. Eric Christianson

By: Tasnima Nabi, Copy Editor [Content-Focused]

Please tell us about educational experiences. What college/university did you attend? How was your education unique, and how did it contribute to your current career path?

I attended the University of Minnesota (Duluth Campus). I had initially thought that I would be doing community pharmacy when I was going through school. Community pharmacy was what I was comfortable with and really all I had known. I ended up in my fourth year on rotations in a clinical pharmacy (non-dispensing) setting and haven't looked back since. I was born to do clinical pharmacy work and I hope you can sense my passion through the blog posts at meded101.com

Please tell us about your professional experiences.

I've been open to trying new things and because of that, I have had a lot of unique opportunities. I've participated in MTM through various ways, done home visits with patients, participated in a falls prevention programs with healthcare professionals with different skillsets. Primarily, I'm currently a long-term care consultant.

Med Ed 101 is your unique way of giving back to the pharmacy community, as you mention in your "About Me." Why did you choose to blog about your experiences?

There's about a million reasons why I'm doing what I'm doing. Through my long-term care consulting role, I get asked a lot of questions on a daily basis generally from nurses and prescribers. I wanted a way to address some of those issues that I see everyday in my practice. My goal was to help raise the level of awareness about medication related mistakes and

problems. A lot of my posts have revolved around the problem of polypharmacy.

When did you decide to start Med Ed 101 and what steps did you take?

Med Ed 101 actually started on Facebook in about June of 2013. I committed myself to posting at least one clinical pearl for 90 days. My initial posts were seen by 20-50 people or so. In the first week, I posted something about vaccines and reached over 1,000 people with 50+ likes. I immediately knew I was onto something. As the Facebook page grew and I told more people about the project, I didn't want to leave anyone out so that eventually led to me watching YouTube videos and reading articles on how to start a website. Learning how to do the website took a while, and I'm still not an expert by any means. With 90,000+ page views in well over 100+ countries, I made the right decision.

What is your favorite topic to post about? Can anyone submit to Med Ed 101?

I'm not really sure I have a favorite. If I had to pick one, probably the medication list reviews where I highlight a few different things I would look into further based upon potential interactions/high doses etc. I would say most viewers of the website enjoy the polypharmacy cases. I'm also getting some interest in my posts on the BCPS exam as well.

Anyone is welcome to submit a case study or piece of medication education. I focus on scenarios that I see in my everyday practice. I have a list of contributors on the website for those interested in adding something to their CV. I try to limit my posts to no more than 600 words. On average, I'd say mine are

around 300-400 (not very long). You can email me at mededucation101@gmail.com if this interests you.

What would you say is the best and worst aspect about maintaining Med Ed 101?

The best aspect by far is helping people. I've also been incredibly surprised by the outpouring of support and encouragement. That is part of the motivation that keeps me going everyday. I've received emails from pharmacists and people passionate about medication safety from literally across the world. Just a sample of numerous examples:

A gentleman from Greece emailed me passionate about how to grow clinical pharmacy in his country.

"Thanks to you for your positive public relations campaign! I think we all benefit! Your case studies are interesting and always impart the value and importance of knowing and understanding how medications work and fit together. We are lucky to have you as our colleague! Keep up the great work!"

"I find your case studies presented on MedEd to be interesting and educational for all Pharmacists"

I had a pharmacy student message me that she loved the YouTube videos I've put out because it helps her learn English and medications.

"I believe it was about a year ago when I was first introduced to MEDED101 as I was searching for medication-related articles on LinkedIn. The very first topic I came across was dealing with Dilantin toxicity. It talked about the unique pharmacokinetics nature of the drug and how even a modest increase in dose can lead into significant elevation in blood level. It was a short article whose underline message was for clinicians to be extra cautious when managing drugs such as Dilantin that have narrow therapeutic window. Today I admit that I have become addicted to this website where I find it to be a very useful source of information particularly for cases related to drug-

drug interaction, drug toxicity and polypharmacy. Thanks Eric for creating such a platform to keep us educated and informed, the minimal tool required for one to making sound clinical decisions in pharmacotherapy."

I've been mentioned or quoted in publications that I would've thought impossible to be a part of just a few short years ago. American Journal of Nursing, Pharmacy Today, Pharmacy Times, and you could image my feeling as I was blindsided when a reporter from the #1 paper in the country (Wall Street Journal) quoted my thoughts on a medication related topic. Keep in mind that this has happened in only about a year and a half.

The downside is whenever you do something you make mistakes, and I'm no different from anyone else. There is a small subsection of people on the Internet that like to (disrespectfully) point those mistakes out. Another downside is that maintaining and growing Med Ed 101 takes a lot of time. My wife and family have been extremely supportive in helping me find that time throughout the day.

What advice would you provide future pharmacists as they begin to look into their various career options?

Continuously put others first. Work very hard. Identify projects or tasks that you enjoyed doing. Find a job (or create your own) that allows you to do those things. Think differently and try new things. Take personal responsibility for your actions and where you are in life.

The Rho Chi Post thanks Dr. Eric Christianson for sharing his experience on his unique contribution to the pharmacy profession!



By: Sherine Jaison
PharmD Candidate
Class of 2015

Many drugs
LOOK – ALIKE
OR
SOUND– ALIKE

causing them to be
easily mixed up in
practice.

Can **YOU** match these
facts with the correct
medication?

Answers

Matching Column: Look-Alike Sound-Alikes

- | | |
|--|----------------|
| 1. This anti-migraine medication should not be used in patients with severe hepatic impairment | A. Zomig |
| 2. Used in combination with statins to treat hyperlipidemia | B. Zariflukast |
| 3. An antihypertensive that can cause hyperkalemia | C. Zaditor |
| 4. Concomitant use with CYP1A2 inhibitors is contraindicated | D. Zanaflex |
| 5. Used in the treatment of allergic conjunctivitis | E. Zestril |
| 6. Used in patients 5 years and above for the treatment of asthma | F. Zetia |
| 7. Indicated in the prevention of maternal-fetal HIV transmission | G. Zetonna |
| 8. 5mg is the recommended dose to treat insomnia in geriatrics | H. Zolpidem |
| 9. Use of this medication in the manic phase of bipolar disorder is an off label indication | I. Zidovudine |
| 10. A corticosteroid nasal spray used in the treatment of allergic rhinitis | J. Zonisamide |

How Did You Do???

Answers to Crossword & Look Alike and Sound Alike

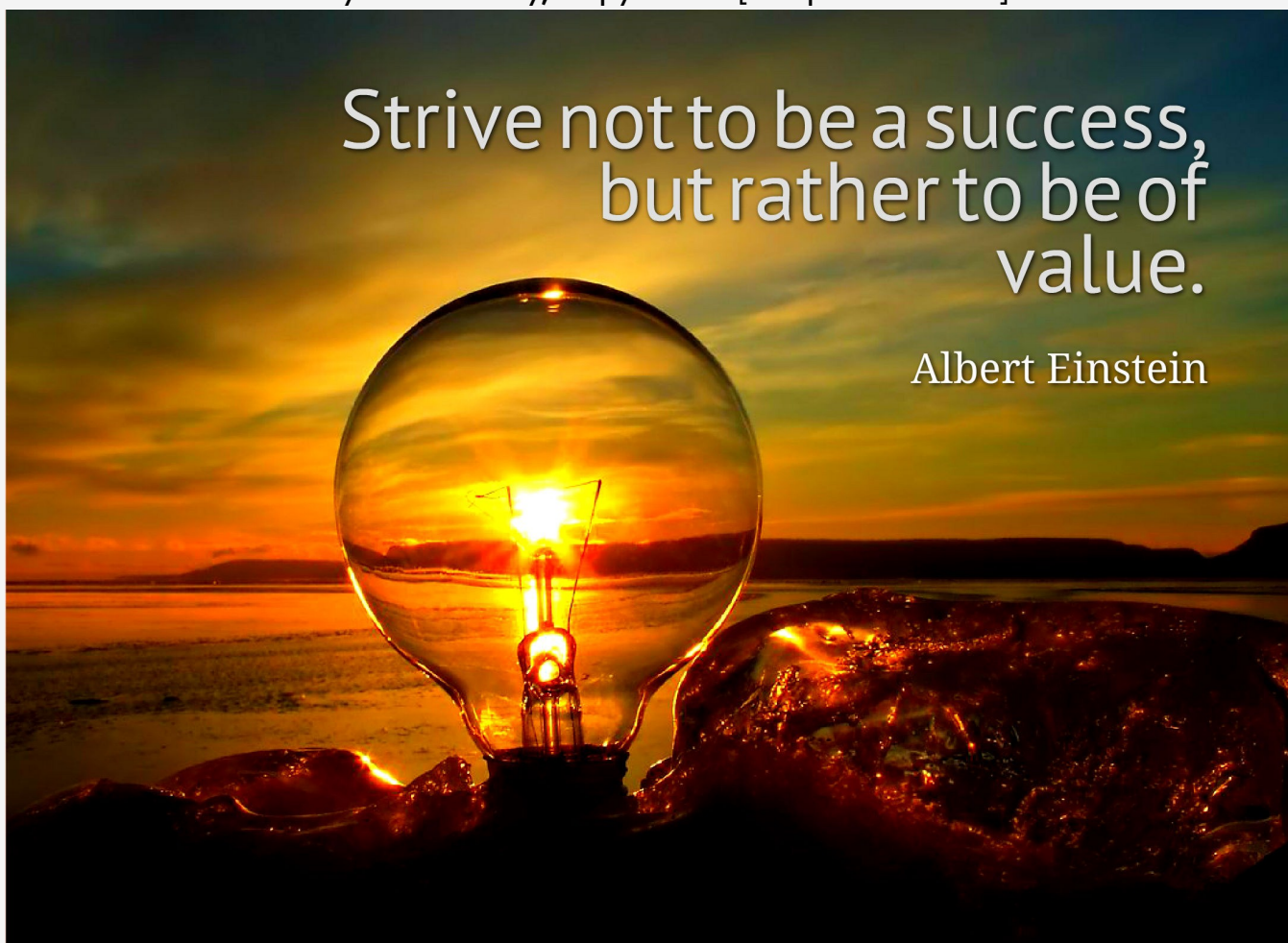
1. A 2. F 3. E 4. D 5. C 6. B 7. I 8. H 9. J 10. G

Quote of the Month

By: Melissa Roy, Copy Editor [Graphics-Focused]

Strive not to be a success,
but rather to be of
value.

Albert Einstein



Do you enjoy our puzzle?

Send us a suggestion for a brainteaser at

RhoChiPost@gmail.com

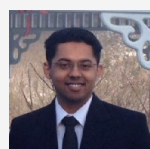
We will feature your work in our next issue!

RHO CHI POST: TEAM MEMBERS



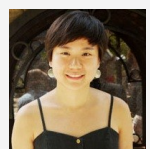
@ Katharine Cimmino (6th Year, STJ; Editor-in-Chief)

I have always been an avid reader and writer. As a member of the Rho Chi Post I am able to merge my passions with the professionalism that comes with aspiring to be a healthcare provider. I am eager to be a part of a publication that promotes my interests and vocation.



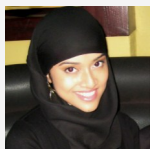
@ Bharat Kirthivasan (PhD, Copy Editor [Content-Focused])

I am a doctoral candidate in Industrial Pharmacy researching nanoparticles for delivery to the brain. The only thing I enjoy more than reading a well-written piece of work is writing it. I am glad to work for the Rho Chi Post, and I encourage others to do the same.



@ Hayeon Na (6th Year, STJ; Copy Editor [Content-Focused])

Hello! My name is Hayeon Na. I am a 2015 PharmD Candidate and one of the Copy Editors for the Rho Chi Post. I hope the information I present will be helpful, or at least interesting. If you have any comments regarding my contribution, feel free to contact me at any time!



@ Tasnima Nabi (5th Year, STJ; Copy Editor [Content-Focused])

Writing has always been my greatest outlet for experience and knowledge, through which I hope to keep you engaged and informed. It is imperative to keep up with our changing profession and community, and I look forward to bringing pertinent information to the newsletter.



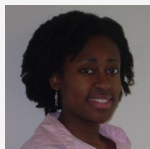
@ Erica Dimitropoulos (6th Year, STJ; Copy Editor [Content-Focused])

As busy student pharmacists, we often fail to keep current with healthcare developments. My aim is to sort through the news and provide quick updates that are important to our profession. Feel free to contact me if there are any topics you would like to see covered in the next issue!



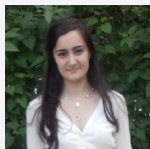
@ Melissa Roy (6th Year, STJ; Copy Editor [Graphics-Focused])

We as future healthcare professionals owe it to our patients and ourselves to be aware and current on the events affecting our profession. The Rho Chi Post is our way to learn new things and stay in touch with the pharmacy world, on- and off-campus. Feel free to reach out to me with suggestions and comments.



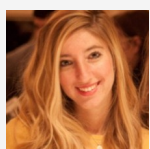
@ Davidta Brown (4th Year, STJ; Copy Editor [Content-Focused])

My two great loves are innovative science and quality writing, and the Rho Chi Post is an insightful combination of both. As an editor, I look forward to bringing relevant information and fresh perspectives to the student and faculty of St. John's University, as well as to making the Rho Chi Post a newsletter that offers something new to every reader.



@ Tamara Yunusova (4th Year, STJ; Section Editor: Clinical)

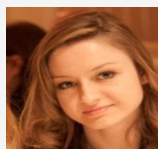
My name is Tamara Yunusova, and I am a 3rd year Pharm D candidate at St. John's University. I enjoy articulating information in a captivating and insightful way. I hope to make this publication more informative, student-friendly, and innovative.



@ Beatrisa Popovitz (6th Year, STJ; Section Editor: Clinical)

I am eager to relay current information on interesting topics making waves in the world of healthcare pertinent to the advancement of our profession. As student pharmacists, we are molding the future of our profession, and the Rho Chi Post facilitates the cultivation of a relationship (between students, faculty, and other members of the healthcare community) to share ideas and spread awareness of various issues.

RHO CHI POST: TEAM MEMBERS



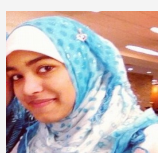
@ Ada Seldin (6th Year, STJ; Staff Editor [Content-Focused])

I am thrilled to have become a new member of the Rho Chi Post team. I hope to further strengthen the goals of this newsletter and make a lasting contribution. It is important, as future pharmacists, to collaborate with our peers, as well as accomplished professionals in the field. Rho Chi Post provides a vehicle to voice our opinions and share relevant news.



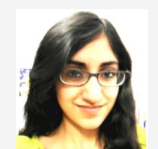
@ Sang Hyo Kim (3rd Year, STJ; Section Editor: Puzzles)

Advancements of technology and developments of new medicines, prolonging the lifespan and improving the quality of life, have increased the geriatric population. In years to come, pharmaceutical industries and healthcare systems will persistently work to find solutions to changing demands and new problems of the society. Through the Rho Chi Post, I wish to learn, educate, and prepare myself and others for the future.



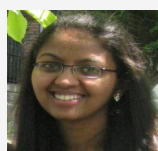
@ Fatema Elias (5th Year, STJ; Copy Editor [Content-Focused])

I am honored to be a part of the Rho Chi Post team. In this age of technology and the continuously changing healthcare profession, I hope to engage like-minded students and professionals. Writing is something that I hold dear to my heart and I hope with this newsletter we can all stay well informed, interested, and educated.



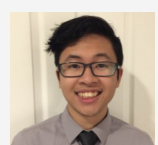
@ Azia Tariq (4th Year, STJ; Section Editor: News)

The Rho Chi Post is a prominent and highly esteemed resource for pharmacy students and professionals. I am privileged to be a part of the team and hope to contribute informative and engaging pieces to the newsletter.



@ Sherine Jaison (6th Year, STJ; Staff Writer)

I find the Rho Chi Post extremely informative and am eager to join the team. I hope my articles will enlighten you about the recent developments in the field of pharmacy and will help you to be a well-informed healthcare provider.



@ Andrew Leong (5th Year, STJ; Staff Writer)

Students have to do more than what is required of us in classes to truly learn about our profession. That's why I joined the Rho Chi Post. This publication represents a channel by which our team members, faculty, and readership can share information - something I believe is important in this ever-changing pharmacy world.



@ You!

We are always looking for creative and motivated students to join our team! If you are interested in becoming an editor for the Rho Chi Post, please visit:
<http://rhochistj.org/RhoChiPost/EditorApplication>

RHO CHI

The Rho Chi Society encourages and recognizes excellence in intellectual achievement and advocates critical inquiry in all aspects of Pharmacy.

The Society further encourages high standards of conduct and character and fosters fellowship among its members.

The Society seeks universal recognition of its members as lifelong intellectual leaders in Pharmacy, and as a community of scholars, to instill the desire to pursue intellectual excellence and critical inquiry to advance the profession.

THE RHO CHI POST

MISSION

The Rho Chi Post is an award-winning, monthly, electronic, student-operated, faculty-approved publication that aims to promote the pharmacy profession through creativity and effective communication. Our publication is a profound platform for integrating ideas, opinions, and innovations from students, faculty, and administrators.

VISION

The Rho Chi Post aims to become the most exciting and creative student-operated newsletter within St. John's University College of Pharmacy and Health Sciences. Our newsletter continues to be known for its relatable and useful content. Our editorial team continues to be known for its excellence and professionalism. The Rho Chi Post essentially sets the stage for the future of student-operated publications in pharmacy.

VALUES

Opportunity, Teamwork, Respect, Excellence

GOALS

1. To provide the highest quality student-operated newsletter with accurate information
2. To maintain a healthy, respectful, challenging, and rewarding environment for student editors
3. To cultivate sound relationships with other organizations and individuals who are like-minded and involved in like pursuits
4. To have a strong, positive impact on fellow students, faculty, and administrators
5. To contribute ideas and innovations to the Pharmacy profession

CURRENT EXECUTIVE BOARD



Anthony, Tyler, Sara, Tasnima, Joshua, Fawad at the 2014 Induction Ceremony

President: **Tyler Valente**

Vice President: **Fawad Piracha**

Secretary: **Tasnima Nabi**

Treasurer: **Anthony Nania**

Historian: **Sara James**

Media Relations Coordinator **Joshua Bliss**

Faculty Advisor: **S. William Zito, PhD**

UPCOMING EVENTS

Feb 8: APhA Immunization Certificate Training
Brooklyn, NY

Feb 27– 28: Pharmacy Ownership Workshop
Memphis, TN

Mar 27-30: APhA Annual Meeting
San Diego, CA