

An award-winning, bimonthly, electronic, student-operated newsletter publication by the St. John's University College of Pharmacy and Health Sciences Rho Chi Beta Delta chapter











THE RHO CHI SOCIETY

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.



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Alex, Gini, Shirley, Anna, Jeffrey, and So Yi (from Left to Right), pictured with Dr. Zito, Dr. Etzel and the 2017 Executive Board (Back Row)

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Want to review a new drug on the market?

Write to us at RhoChiPost@gmail.com or visit our website: http://rhochistj.org/ RhoChiPost/

Remember, Rho Chi Honor Society membership is NOT a requirement for submitting articles to the Rho Chi Post!

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We are always looking for creative and motivated students to join our team! If you are interested in becoming a Rho Chi Post editorial team member, visit:

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11

14

TABLE OF CONTENTS

Food and Drug Administration (FDA) announces additional impurity in valsartan	
(Diovan®) recall	
By: Karen Chen, PharmD Candidate c/o 2019	

Innovation and internet outreach: the Food and Drug Administration's (FDA) latest tactics in combatting the opioid epidemic By: Michael Lim, PharmD Candidate c/o 2020

<u>The importance of medication therapy management (MTM) in pharmacy practice</u> By: Shivani Shah (PharmD Candidate c/o 2021)

	Team	Mem	bers
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Back Cover

QUOTE OF THE MONTH

By: Matthew Kahn, Graphics Editor

"I WANTED TO BE A PHARMACIST. I LIKED THE WAY OUR LOCAL PHARMACIST WAS ALWAYS DRESSED IN A NICE WHITE COAT; HE LOOKED VERY CALM, YOU'D GIVE HIM MONEY, AND HE'D GIVE YOU SOMETHING THAT YOU WANTED TO BUY."

WALTER MATTHAU

Food and Drug Administration (FDA) announces additional impurity in valsartan (Diovan®) recall

By: Karen Chen, PharmD Candidate c/o 2019

On July 13th, 2018, the U.S. Food and Drug Administration (FDA) announced a voluntary recall of several different national drug codes (NDCs) of medications containing the active ingredient valsartan (Diovan®) after the discovery of an impurity called Nnitrosodimethylamine (NDMA). The reason for the recall was because the impurity is classified as a probable human carcinogen based on results from laboratory tests and such results do not meet the FDA's safety standards.¹ Valsartan is an angiotensin II receptor blocker (ARB) indicated for the treatment of high blood pressure and heart failure. Many healthcare providers have since switched their patients to an alternative medication within the drug class in order to avoid discontinuation of therapy.^{1,2}

NDMA was discovered in medications with the active pharmaceutical ingredient valsartan by Prinston Pharmaceuticals Inc., who contacted the FDA's Center for Drug Evaluation and Research (CDER), notifying the agency that their manufacturer, Zhejiang Huahai Pharmaceutical Co. (ZHP), had discontinued manufacturing valsartan after discovering an impurity in its products.³ The levels of NDMA in ZHP's valsartan products were in trace amounts which are considered to be a low risk to patients taking the affected products. Despite this, the impurity was considered unacceptable by the FDA.² Only certain lots of the contaminated valsartan NDCs were removed from the market. Sudden withdrawal of such a large volume of affected valsartan lot numbers from the market combined with a lack of unaffected lots of valsartan available for distribution and dispensing resulted in a drug shortage for uncontaminated generic valsartan. Upon discovery of the impurity, the FDA took swift action to alert the public and healthcare professionals to remove generic valsartan medications containing NDMA from the market and alleviate the drug shortage resulting from this recall.¹ The FDA is hoping to increase production of uncontaminated valsartan from other manufacturers to fulfill the needs of the public. ²

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On September 13th, 2018, the FDA updated the public about their ongoing investigation surrounding the recall of valsartan containing medication contaminated with NDMA, and announced a second impurity discovered in a batch of medications containing valsartan known as N-Nitrosodiethylamine (NDEA). NDEA is similar to NDMA in that it is a known animal carcinogen, and a probable human carcinogen.³ The batch of medications containing NDEA-contaminated valsartan was found in three lots of Torrent Pharmaceuticals' recalled valsartan drug products. It was determined that the batches containing NDEA impurity came from Zhejiang Huahai Pharmaceuticals (ZHP). The FDA took action to remove these drug products from the market, however, not all products made using ZHP manufacturing contained the NDEA impurity.³ Both the NDMA and NDEA impurities were believed to have formed as a result of errors made in valsartan manufacturing .1,3

Patients are encouraged to double check and examine their bottle of valsartan to ensure that they are not taking valsartan from a recalled lot, and pharmacists should check to ensure that they are not carrying an affected lot in their inventory. Pharmacists also play an important role in reaching out to prescribers to obtain an alternative ARB for patients that have been affected by the recall to avoid abrupt discontinuation of therapy. Pharmacists have the responsibility to ensure the continuation and high quality of care for all patients. Not all valsartan products contain NDMA or NDEA, so pharmacists may reach out to patients and recommend a drug product not affected by the recall. Pharmacists play an important role as the most accessible healthcare provider for most patients and have the responsibility to educate patients about the impact of the recall.

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Has your article been published in an issue of the Rho Chi Post?

If so, congratulations!

Here is a suggested format for citing / referencing your work:

[Author(s)]. [Article Title]. Rho Chi Post. [Year and Month Published]. [Volume]([Issue]):[Pages].

To view some examples visit: Citation Guidelines

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Innovation and internet outreach: the Food and Drug Administration's (FDA) latest tactics in combatting the opioid epidemic

By: Michael Lim, PharmD Candidate c/o 2020

As the nation continues to struggle with the growing opioid epidemic, numerous organizations, researchers, and even the president are taking initiative in resolving the crisis. Of these groups, perhaps one of the most proactive in its efforts is the Food and Drug Administration (FDA). With its promotion of innovation and recent involvement in addressing the illicit sale of opioids online, the FDA's response to widespread opioid misuse and addiction is nothing short of admirable.

Encouraging innovation has been one of the FDA's key tactics in minimizing the opioid epidemic's impact on society. One way in which the FDA has supported innovation is through the release of draft guidances which make the pathway for developing new medications more efficient. For example, by issuing the draft guidance, "Opioid Dependence: Developing Buprenorphine Depot Products for Treatment", the FDA hopes its recommendations will assist industry in streamlining development and foster the exploration of innovations in depot buprenorphine products.¹ With wider access to such products, effective treatment for opioid dependence can be provided and as a passive compliance formulation the depots may result in less abuse and misuse compared to self-administered formulations such as tablets or films.² The FDA has also championed innovation through its approval of new drugs for the treatment and management of opioid use disorder. For instance, the FDA recently approved the first generic forms of sublingual buprenorphine (Buprenex®) and naloxone (Suboxone®) in June 2018.³ In addition, with the FDA's recent approval of lofexidine (Lucemyra[™]) - the first non-opioid treatment used to diminish opioid withdrawal symptoms in adults - in May 2018, there is progress in the realm of managing an opioid use disorder on a longterm basis.⁴ Although treatment with lofexidine cannot exceed fourteen days, by mitigating opioid withdrawal symptoms, it is expected to facilitate abrupt opioid discontinuation.⁵ Regarding medical devices, the FDA also recently made an effort to cultivate innovation by issuing a challenge to companies to produce devices such as diagnostic tests, mobile medical apps, or support software for the detection, treatment, or prevention of addiction and treatment of pain.⁶ Regardless of developmental stage, enhanced interactions and review by the FDA is promised for select applicants based on criteria such as feasibility of the product, potential public health impact, and novelty of the device.⁶

The FDA is also targeting the illegal online opioid market. Illegal opioids sold online are unapproved, potentially adulterated, expired, and/or misbranded, thereby serving as another challenge which exacerbates the current crisis. Of particular concern are opioids such as tramadol (Ultram®) and oxycodone (OxyContin®) which already bear great risks as indicated in their boxed warnings.⁷ In response, the FDA has issued warning letters to nine online networks hosting 53 websites involved in the illegal sale of opioids.⁷ With the threat of product seizure or injunction upon failure to implement corrective measures, these online networks are only the first of a comprehensive campaign to suppress the illegal sale of unapproved opioids.⁷ To continue the campaign, the FDA organized an Online Opioid Summit inviting internet stakeholders, government entities, academic researchers, tech companies, and advocacy groups to address research and other strategies to target the illicit online opioid market.⁸ While some discussion points were safeguarded to conceal future tactics, the FDA revealed that some approaches discussed at the summit included promoting educational and public health content such as treatment programs in top search results and social media posts, making it more difficult to connect users with digital drug dealers and illegal online pharmacies, and finding ways to use big data and machine learning to identify illegal activity.⁸ The FDA also mentioned its plans for devoting additional resources to its criminal enforcement network.⁸

Through innovation and online outreach, the FDA has confronted the burgeoning opioid crisis in a proactive manner. From expanding treatment options to attacking illicit opioid markets, opioid abuse, misuse, and addiction remain targeted on a variety of fronts. While the war to control the epidemic is far from over, the FDA's inventive and collaborative approach will undoubtedly play a crucial role in finding a resolution.

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https://www.fda.gov/NewsEvents/Newsroom/

The importance of medication therapy management (MTM) in pharmacy practice

By: Shivani Shah, PharmD Candidate c/o 2021

Medication therapy management (MTM) is a service provided by pharmacists to eligible patients who participate in a Medicare drug plan, namely part D. The geriatric population, which is included among the aforementioned eligible patients, is prone to taking numerous medications as they tend to have multiple disease states which lead to a plethora of medication-related problems. The goal of MTM is to optimize the therapeutic outcomes of an individual patient as well as detect and prevent costly medication related adverse events.¹ Through a comprehensive review of all medications including their potential side effects, financial barriers, and how well a specific medication is working, pharmacists can help their patients come up with action plans to ensure they are getting the most out of their prescriptions. Pharmacists also often collaborate with their patients' healthcare providers to optimize medication use for improved health outcomes.

Medication-related adverse events are a major public health issue in the United States. The inappropriate use of drugs contributes to more than 1.5 million preventable, medication-related adverse events each year and accounts for an excess of one hundred and seventy seven billion dollars in morbidity and mortality.² MTM services help contribute to medication error prevention and enable patients to actively self-manage their therapy plans while simultaneously giving them the opportunity to be more knowledgeable about their health and medication use. Hence, pharmacists not only help patients reach their health outcome goals by optimizing therapy, they also empower them to be more responsible for their health.

The MTM core elements service model consists of five components which pharmacists use to deliver medication management services.² The first core element is medication therapy review, in which pharmacists collect patientspecific information and assess patient therapy to identify any discrepancies. The purpose of this step is to make a prioritized list of medication-related adverse events and create a plan to resolve them. The next two core elements - personal medication record and medicationrelated action plan - enable the pharmacist to create a list of all the patient's medications including supplements, over the counter products, and herbal products for the purpose of creating a list of actions the patient can personally take to track their progress. If there is a serious discrepancy or the pharmacist feels their patient needs consulting services, core element four, intervention and/or referral, can be acted upon. The last and most important core element is documentation and follow up. A summary of the MTM service is communicated effectively to the patient and prescriber, and a follow-up MTM visit may be scheduled.²

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Patients and health-care systems alike greatly benefit from MTM services due to the overall reduction in health care costs. The risk of patients misusing or abusing their medications is greatly reduced as a result of pharmacists being able to catch discrepancies via the five core elements provided through MTM. Pharmacists play a significant role in making sure effective therapy is delivered to patients so that they can progress towards successfully being able to manage their disease states.

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Bluml BM. Definition of medication therapy management: Development of profession wide consensus. J Am Pharm Assoc. 2005; 45:566–72.



RHO CHI POST: TEAM MEMBERS



@ Anna Diyamandoglu 5th Year, STJ; Editor-in-Chief

Throughout my time in the PharmD program, my understanding of pharmacy as a profession has evolved and deepened as much as my desire to create awareness, particularly to non-science students, about the diverse role pharmacy plays in various healthcare and non-healthcare settings. I have always had an affinity for writing and look forward to combining my interests in literary composition, editing and pharmacy to produce relevant issues which both pharmacy students and nonpharmacy students alike will find relatable and take an interest in.



@ Karen Lin

Graduate Copy Editor [Content-Focused] The Rho Chi Post allows me to have an appreciation for interactive pharmacy learning as well as the art of writing. With each newsletter, my goal is to provide current information to readers who come across the Post. As an editor, I hope to make the newsletter one-of-a -kind and motivate and influence writers to explore science with their creative talents.

@ Matthew Kahn

6th Year, STJ; Graphics Editor

I've always loved graphic design, so I was thrilled at the opportunity to be a part of the Rho Chi Post team and contribute to future publications. I'm excited to explore new ways to make the Post even better, and also to be continuously exposed to new ideas in the pharmaceutical field.



@ Nicollette Pacheco, PharmD Graduate Editor [Graphics-Focused]

As a member of the Rho Chi Post team, I have a vast appreciation of what it means to be a pharmacist in the rapidly evolving world of healthcare. As a graduate editor, I will continue to bring my passion for science and creativity to the Rho Chi Post.



@ Mei Fung

Graduate Copy Editor [Content-Focused] It's always interesting to see how the healthcare field evolves and all the advancements in pharmacy come to fruition. I joined the Rho Chi Post because it brings together a variety of these topics with distinguishing perspectives from our peers in pharmacy practice. I am ecstatic to join the team in continuing Rho Chi Post's endeavors in promoting the profession.



@ Davidta Brown, PharmD

Graduate Copy Editor [Content-Focused]

My two great loves are innovative science and quality writing; 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.

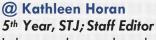
RHO CHI POST: TEAM MEMBERS



@ Jonathan Mercado

6th Year, STJ; Finance and Outreach Manager, Staff Writer

The Rho Chi Post breaks barriers for students that want a glimpse of their future and acts as an inspiration to work harder to achieve their goals. It is an embodiment of the motivation and intelligence that drives pharmacy students to be the most informed and capable professionals they can be. I am glad to a part of that mission and to channel my passion and interests through this newsletter.



I have always loved writing, and I hope to couple my passion for writing with my interest in clinical pharmacy by becoming a writer and staff editor for the Rho Chi Post. As a writer and staff editor for the Rho Chi Post, I hope to write and edit informative and interesting articles that relate to the world of healthcare and pharmacy. I am so excited to join this team of student pharmacists and writers.



@ Gabrielle Flavoni Graduate Staff Editor

Writing has always been an enormous passion of mine, and I'm blessed to join such an amazing team that encourages me to explore it. As a new Staff Writer for the Post, my goal is to aid others in staying up-to-date about the pharmacy world, while also utilizing a creative outlet to make an impact on those around me.



@ Yao Jiang 6th Year, STJ; Staff Editor

Writing for the Rho Chi Post allows me to bridge the gap between class and the real world. It gives me a reason to focus on topics that are relevant to me

as a practicing student pharmacist and explore new medications, laws, and ventures in our evolving profession. This process of researching, teaching oneself, and finally, teaching others is what we will ultimately do as future pharmacists. I am honored for this opportunity to be further exposed to what pharmacy has to offer all while giving back to the community that has taught me so much.



@ Katharine Russo 4th Year, STJ; Staff Editor

In my first two years as a pharmacy student, I was exposed to numerous opportunities to write medical based articles for classes and clubs. This is what first sparked my interest in health care literature and I look forward to being a Staff Writer for the Rho Chi Post in hopes of being able to share my passion and enthusiasm in writing health-care related publications.



@ Anna Chen 5th Year, STJ; Staff Writer

The Rho Chi Post is a fantastic opportunity for future health professionals to keep up with the vastly changing healthcare world. As the pharmaceutical landscape keeps changing, it is crucial that we join the conversation in voicing our opinions and clinical input into current healthcare debates. Healthcare is limitless in possibilities to better patient centered care and I aim to deliver content that is both invigorating and inspiring to both students and practicing professionals.



RHO CHI POST: TEAM MEMBERS



@ Karen Chen

6th Year, STJ; Staff Writer

I am honored to be writing for the Rho Chi Post. The Rho Chi Post allows me to creatively express my opinions on various topics in pharmacy as well as communicate and share new information about our ever evolving profession. This platform connects students, allows us to educate each other and helps us all stay up to date. I have always loved writing and hope that by being a part of the Rho Chi Post team, I can continue to research and write articles that are relevant and inspiring.



6th Year, STJ; Staff Writer

In the world of pharmacy, knowledge becomes outdated within hours of when you learned it. The miracle drug that used to be considered the standard of therapy is replaced by the latest and greatest. My role as a Staff Writer for the Rho Chi Post is to bring these changes to the forefront in order to empower future pharmacists and to improve the quality of patient care.



@ Thanesha Graham 6th Year, STJ; Staff Writer

As a writer for the Rho Chi Post, I have the unique opportunity to convey my knowledge, discoveries and interests to the general public. I will be able to enlighten individuals about issues that will not only impact them, but also their families, and communities. I look forward to supplying this newsletter with valuable and relevant information about the evolving field of pharmacy.



@ Shivani Shah

4th Year, STJ; Staff Writer

As students in an dynamic healthcare profession, it is important to keep up to date with literature and publications regarding the pharmacy profession. Rho Chi Post serves as a great outlet for students to catch up on pharmaceutical innovations and progress going on in the career. Being a staff writer motivates me to constantly research and share new, exciting advancements with fellow students. I look forward to reading articles in the Post and hope to spark others curiosity and interest!







6th Year, STJ; Staff Writer With a constantly evolving healthcare

@ Alex Chu

field, it is imperative that we keep ourselves up to date with the latest news. This is what led me to join the Rho Chi Post, which constantly comes out with interesting and informative topics. It is an honor to write for the Rho Chi Post, and I wish to contribute innovative and intriguing articles to this newsletter.

@ Shireen Farzadeh 6th Year, STJ; Staff Writer

I am excited to join Rho Chi Post and contribute to the award-winning newsletter for students to share ideas, opinions, and pertinent topics! Writing for the Rho Chi Post is an opportunity to express our appreciation for pharmacy and educate ourselves and our peers. I hope to inspire students to discover their passion for writing and to stay up to date on our evolving profession!

@ Michael Lim

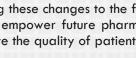
5th Year, STJ; Staff Writer

In the spirit of advancing the pharmacy profession, the Rho Chi Post never ceases to produce valuable content showcasing the innovation and diversity of the career. As a Staff Writer for the Post, I am honored to have the opportunity to use writing to both educate and push readers to strive for excellence in their professional pursuits. I hope that my contributions to the newsletter are able to foster growth in an informative and accessible manner.

@ Yeonah Suk 5th Year, STJ; Staff Writer

As a student interested in various branches of healthcare, the Rho Chi Post has provided me the opportunity to be part of an organization that discusses this field in a broad scope. As modern society continues to amalgamate and globalize multiple disciplines, it is important that we harmonize these elements and keep ourselves updated on their interactions. I joined the Rho Chi Post to both learn and contribute to a team that has immense diversity and my goal is to continue exploring innovative ideas through writing.





Page 13 VOLUME 8, ISSUE 1

BACK TO COVER

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

To provide the highest quality student-operated newsletter with accurate information

To maintain a healthy, respectful, challenging, and rewarding environment for student editors

To cultivate sound relationships with other organizations and individuals who are like-minded and involved in like pursuits

To have a strong, positive impact on fellow students, faculty, and administrators

To contribute ideas and innovations to the Pharmacy profession

St. JOHN'S UNIVERSITY College of Pharmacy and Health Sciences

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