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TABLE OF CONTENTS

<u>Daniel Schneider RPh.'s crusade against OxyContin®</u>	5
By: Alisha Kuriakose, PharmD Candidate c/o 2022	
<u>EndeavourRx™ : The Prescription-Only, FDA-Approved Videogame for Children with ADHD</u>	8
By: Aiša Mrkulic, PharmD Candidate c/o 2022	
<u>FDA Approves GlaxoSmithKlein's Combined Formulation of Ibuprofen-Acetaminophen: Is This a Step in the Direction of Increased Patient Adherence in Pain Relief and the Fight Against the Opioid Epidemic?</u>	10
By: Edwin Gruda, PharmD Candidate c/o 2022 and Aiša Mrkulic, PharmD Candidate c/o 2022	
<u>NMOSD Treatment</u>	12
By: Lyana Sayilar, PharmD. Candidate c/o 2022	
<u>Dangers of the High Sodium Diet</u>	14
By: Anjali Rana, PharmD. Candidate c/o 2025	
<u>Use of dexamethasone for the treatment of COVID-19: an update</u>	16
By: Bisma T. Sekhery, PharmD. Candidate c/o 2021	
<u>Flu Shot Season, COVID-19 and How Pharmacies are Bracing for Impact</u>	18
By: Rebecca Samuel, PharmD Candidate c/o 2022 and Pallak Sharma, PharmD Candidate c/o 2022	
Team Members	20
<u>Back Cover</u>	24

QUOTE OF THE MONTH

Quote of the Month

"They may forget your name, but they will never forget how you made them feel."

- Maya Angelou



Daniel Schneider RPh.'s crusade against OxyContin

By: Alisha Kuriakose, PharmD Candidate c/o 2022

"The Pharmacist" is a Netflix documentary that showcases pharmacist Dr. Daniel Schneider's crusade against OxyContin® abuse. It highlights his discovery of a corrupt doctor who exploited her medical license and destroyed communities in Louisiana. It also illustrates his fight to expose Purdue Pharma of falsely reporting the addictive properties of OxyContin® and marketing it under false pretenses. Be aware this article does contain spoilers.

In 2001, Dr. Daniel Schneider began noticing that his pharmacy was receiving a suspicious number of OxyContin® prescriptions for young adults, thus, he speculated opioid abuse. He started questioning patients why they were started on high doses of OxyContin®, about their doctor, what pain they were feeling etc. To his surprise, many patients admitted that they had no pain, no recent surgeries, or accidents. He began counseling his patients in hopes of dissuading them from using OxyContin® with alternative suggestions of Tylenol® or Motrin®. He saw that he was often unsuccessful, and patients were still demanding their prescriptions be filled. Dr. Schneider informed the pharmacy owner of the influx of OxyContin® users in their community and his suspicions of doctors who were abusing their medical license to write scripts for patients who were clearly misdiagnosed or selling the pills for profit. He was told to stop harassing the patients as all the prescriptions were legal and the questioning would hurt business.

Dr. Schneider kept these instructions in mind, but knew he had to take action. He began collecting evidence for his theory by secretly recording conversations and maintaining copies of the prescriptions. The pharmacy kept a "dead list", this tracked patients that were suspected to die soon due to the progression of their illness. Dr. Schneider compared this list to those he had suspected of abusing OxyContin® and local obituaries and found they often overlapped.

As time passed, Dr. Schneider noticed that most of the prescriptions were coming from the same pediatrician, Dr. Jacqueline Cleggett, who had opened a pain management clinic. When questioning mutual patients, one said, Dr. Cleggett, "once tried to pay [me] for [printer repair] services in prescriptions. The bill came to about \$300 or \$400, and Cleggett handed [me] prescriptions. When [I] said [I] needed cash to bring back to [my] employer, a police officer returned

carrying the prescriptions...the officer told [me] it was in [my] best interest to leave with the prescriptions".¹

This patient and Schneider began collecting information which they presented to the FBI and DEA. These agencies had known about Dr. Cleggett's corrupt business and had an ongoing investigation, but they could not disclose information to Dr. Schneider. A DEA agent stated that Cleggett had written 182,723 prescriptions distributed among ten pharmacies over the course of one year.² They discovered that Dr. Cleggett did not examine her patients before prescribing them painkillers, and treated as high as 76 patients per day, predominantly overnight. The DEA had sent undercover agents as patients to confirm the legitimacy of the clinic and they observed that the parking lot of her practice was always crowded especially overnight. Investigators reported seeing license plates from Mississippi, Georgia, Alabama, and Tennessee. There were patients who often waited days for an appointment, some even camped out in their cars. Most of the patients received identical prescriptions and paid in cash. Cleggett deposited her profits of \$2 million in one year.² It was evident that Cleggett was not practicing medicine; she was running a pill mill.

During this time, when receiving complaints about the number of Oxycontin® related overdoses, deaths, and addiction, Purdue Pharma, the manufacturers of OxyContin®, were calling the problem "pseudo addiction". Alan Spanos, MD., MA., the Purdue spokesperson reported, "when a patient is looking like a drug addict it is because they were pursuing pain relief", which Purdue claimed was different from an addiction, "because there was no physical addiction".³

Schneider was told that he needed to present solid evidence to the medical board to catch Dr. Cleggett and Purdue Pharma. Schneider got the smoking gun he needed when a girl was prescribed Soma®, Valium®, Roxycodone®, and OxyContin®. The combination which was commonly known as the "holy trinity", was a definite overdose for a child of her weight. To catch Dr. Cleggett in the act, Schneider called her to confirm that she had prescribed the combination, to which she admitted. Schneider talked to the doctor who had discharged the patient from the hospital and deduced that the patient was discharged on Tylenol® and that Dr. Cleggett was in the wrong. When presented with the case, the medical board took action,

Daniel Schneider RPh.'s crusade against OxyContin

By: Alisha Kuriakose, PharmD Candidate c/o 2022

which prompted the DEA to take action. Many boxes of prescriptions that were already signed and awaiting to be dated were found in her clinic and taken as evidence against her malpractice.

Although Cleggett denies her charges, she was convicted under a theory of “willful blindness”. This means that, “the mental state of the offender is equated to “knowing” because the physician intentionally buried her head in the sand to avoid knowing (it is also known as the “ostrich instruction”) ...in other words, it took a knowing act to avoid learning that a prescription would be improper, and that knowing act substitutes for actual knowledge of the criminal endeavor”.³

Having Dr. Cleggett arrested and the termination of her medical license aided Dr. Schneider's fight against Purdue's mis-marketing of OxyContin's® addictive properties. Schneider's small victory in putting away Dr. Cleggett aided in dismantling a pill mill that was destroying communities throughout the southern United States.

It also helped establish a prescription monitoring program (PMP) in Louisiana. This helped monitor drugs being sold by making all records electronic. In 2017, Governor John Bel Edwards mandated the use of the Louisiana's PMP for opioids making it a statewide comprehensive platform for healthcare professionals to review each patients' controlled substance prescription history efficiently and quickly. The PMP is an electronic database run by the Louisiana Board of Pharmacy. It monitors controlled substances by compiling data on controlled substances dispensed in Louisiana and distributes this information to authorized individuals such as prescribers and pharmacists. Act 76 requires prescribers to consult the PMP before prescribing opioids, this effort to combat Louisiana's opioid epidemic helps verify whether the patient has other active opioid prescriptions. This electronic database works to, “minimize any workflow disruption by providing near-instant and seamless access to critical controlled substance prescription history information to both prescribers and pharmacists. This platform utilizes current PMP prescription data and transfers it into electronic health records and pharmacy management systems”.⁴

Using a PMP enables prescribers to verify prescriptions, identify potential substance abuse disorders and provide these

patients with the necessary support, verify the controlled substance prescriptions associated with prescribers' DEA registration numbers to identify potential fraud, correct errors and identify trends, and reduce potential adverse reactions.⁵ Although Louisiana has made many changes to prevent substance abuse, the state still has a long way to go. In 2018, the National Institute on Drug Abuse reported 79.4 opioid prescriptions for every 100 persons were written in Louisiana. This is higher than the national average rate of 51.4 prescriptions. Louisiana was among the top five states in the country for highest rates in 2018. Almost 40% of the reported drug overdose fatalities (1,140) in Louisiana involved opioids in 2018 totaling 444 deaths.⁶

Data collected by New York State suggests that, “more than 500,000 people in the United States have died from drug overdoses since 2000-nearly 91 people a day. An average of one call every 45 minutes was reported to Poison Control Centers for pediatric opioid exposures from 2000-2015”.⁷ Like Louisiana, New York State is also taking similar steps in its crusade against the opioid epidemic. New York State Department of Health is working to identify and share data between various healthcare, government agencies and affected communities, make New York's PMP easier for providers to access and use, provide resources such as overdose treatment (Naloxone) and medication assisted treatments (Buprenorphine etc.), offer overdose prevention classes, provide more medication drop off boxes and develop training for healthcare providers on addiction, pain management and treatment.⁷ Governor Cuomo has initiated the New York State Addiction and Substance Use Disorder Resource flash drive program in which flash drives are distributed to coaches, school administrators and teachers for instruction targeted for school aged children and athletes to make them aware of what to do in the case of an overdose and the dangers of addiction and substance abuse.¹ The Bureau of Narcotic Enforcement, the Office of Alcoholism and Substance Abuse Services, and the Education Department worked to prepare the materials on the flash drive so that they can be distributed at no charge to New York State Schools to address substance abuse in young kids at the community level. New York State also initiated the Naloxone Co-payment Assistance Program (N-CAP) which can cover up to \$40 in prescription copayments to reduce or eliminate out of pocket expenses when purchasing naloxone at a participating pharmacy. This overdose

Daniel Schneider RPh.'s crusade against OxyContin**By: Alisha Kuriakose, PharmD Candidate c/o 2022**

campaign helps people proactively educate themselves and others and allows them to be prepared in case of an overdose.⁷

Dr. Daniel Schneider's story proves that if one person speaks up, a whole system can change.

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EndeavourRx™: The Prescription-Only, FDA-Approved Videogame for Children with ADHD

By: Aiša Mrkulic PharmD Candidate c/o 2022

Attention Deficit Hyperactivity Disorder (ADHD) is one of the most common reasons children require referrals for mental health services.¹ In fact, the American Academy of Pediatrics (AAP) recommends the screening of every child with ADHD for neuropsychiatric comorbidities. With, “one in every 20 children affected,” it exists as one of many contributors to our nation’s mental health crisis, a fitting backdrop for the FDA’s most recent announcements.¹ Biotech company *Akili Interactive* ultimately set out to capitalize on this public health issue. It was not long before the Akilians’ digital therapeutic EndeavourRx™ (AKL-T01) became the first prescription treatment delivered through a videogame to achieve FDA-approval.

Difficulty concentrating remains the archetypal sign with which ADHD is associated; however, it is certainly not the sole target for ADHD therapy. No less than 6 symptoms, observable in at least 2 different settings, meets the Diagnostic and Statistical Manual of Mental Health Disorders, 5th Edition’s (DSM-5) criteria for formal diagnosis.² It is for this reason that diagnostic evaluation consists of, “behavioral observation in the classroom and at home”.¹ ADHD can be further categorized based on the classification of symptoms as one of the following: predominantly inattentive, predominantly hyperactive or combined, that is, involving both inattentiveness as well as hyperactivity.² According to the DSM-5,[†] the nature of the disorder’s presentation, like its symptom, is subject to change.¹

AKL-T01 is currently compatible with Apple products however, devices must meet the minimum requirements outlined for prospective users. *Akili Interactive*’s inclusion of ‘Indications for Use’ and ‘Side Effects’ in its videogame’s instruction manual makes clear that the therapy is not indicated for all ADHD diagnoses, nor is it devoid of adverse effects. Noteworthy are that specifications under which the unconventional treatment improves attention function in qualified patients. Firstly, the proprietary videogame experience is intended for children aged 8-12 years old.³ The clearly defined patient population for which it was developed excludes those diagnosed with the primarily hyperactive variety of ADHD, favoring the inattentive and combined varieties instead. Labeling explicitly states, “AKL-T01 may not display benefits in typical behavioral symptoms, such as hyperactivity”.³ This first-of-its kind ADHD treatment was approved as an add-on therapy. Indeed, as it turns out, digital medicine is not a substitute for standard, guideline-driven,

pharmacotherapy.

Nonetheless, those who wish to be among the first to experience “the future of medicine” are encouraged to join a waitlist.⁴ In other words, FDA - approved AKL - T01 is not yet on the market. *Akili Interactive* invites the parents of inattentive gamers to gift their children the chance to play their medicine soon. While adults may be inclined to assume digital therapy is side - effect free, frustration (6.1%), headache (1.3%) , and dizziness (0.6%) were a few of the most common, transient, adverse effects observed.³ Cited findings were announced across , “five clinical studies, including a prospective, randomized control trial,” by the name of STARS - ADHD , which included a total of 600 participants.⁵ In this study, the intervention demonstrated, “a statistically significant improvement [as] compared to an educational style videogame on a change in the Attention Performance Index (API) of the Test of Variables of Attention (TOVA®), a computerized test cleared by FDA to evaluate the effects of interventions in ADHD”.⁵ Suddenly, entertainment and efficacy prove strong drivers of adherence despite the presence of a side effect profile.

AK-T01 has made history as the first-ever digital therapy to bear the FDA’s stamp of approval. It cleared via the federal agency’s de-novo pathway, receiving its present classification as a novel medical device.⁶ In as little as 4 weeks of treatment with the, “medicine that feels like entertainment”, nearly 50% of child-subjects exhibited a meaningful improvement in day-to-day functioning.⁶ Accompanying a second month of treatment was an 18% increase in prevalence of the desired outcome.⁶ For up to one month, improvements in symptomatology were maintained after just one month of use.⁷ So how exactly does this digital therapy work? What is it about THIS video game that helps children manage their ADHD? At this time, there are no long-term studies which show that the benefits of AK-T01 use are not in fact transient.

Scott Kellog, Vice President of Medical Devices at *Akili Interactive* had this to say to skeptics, “The clearance of EndeavourRx™ marks the culmination of nearly a decade of research and development”.⁶ It is through a “videogame interface” that AK-T01 successfully activates the brain’s prefrontal cortex (PFC), responsible for attentiveness among other things.⁸ “Sensory stimuli” are carefully integrated along-

EndeavourRx™: The Prescription-Only, FDA-Approved Videogame for Children with ADHD

By: Aisa Mrkulic PharmD Candidate c/o 2022

side “motor challenges”, with the ultimate goal of improved focus “through progressive obstacles”.⁸ “As a child progresses in gameplay, the technology is continuously measuring their performance and using adaptive algorithms to adjust the difficulty and personalize the treatment experience for each individual,” a spokesperson for *Akili Interactive* tells Observer.⁸

Tom Huddleston Jr, BS, MS, of CNBC best described the first-of-its-kind, digital therapy, “In the game, players steer a flying craft through obstacle courses where they have to avoid hazards, like fire pits or underwater mines, while collecting targets...children should, aim to complete five missions in the allotted time...once complete, the game will not allow them to play any further missions until the following day”.⁹

Dr. Natalie Weder, MD, child and adolescent psychiatrist at the Child Mind Institute, explains that video games are especially appealing to children with an ADHD diagnosis.¹⁰ Perhaps *Akili Interactive* pursued the development of a worthwhile therapy after all. At the same time, it is theorized that those with ADHD turn to gaming for self-medication. The million-dollar question is as follows; Just how well do bursts of pleasure-promoting dopamine translate to real-world scenarios?

In its announcement of the milestone, the FDA introduces AK-T01, the unprecedented digital therapeutic, as the very first to be, “granted marketing authorization by the FDA for any type of condition”.⁸ FDA-approval is a guarantee of safety and efficacy, unless, of course, post-marketing surveillance reveals otherwise. Ultimately, it is AK-T01’s performance under real-world conditions that will determine its place in therapy.

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FDA Approves GlaxoSmithKlein's Combined Formulation of Ibuprofen-Acetaminophen: Is This a Step in the Direction of Increased Patient Adherence in Pain Relief and the Fight Against the Opioid Epidemic?

By: Edwin Gruda, PharmD Candidate c/o 2022; Aiša Mrkulic, PharmD. Candidate c/o 2022

Over-the-Counter (OTC) medications are typically used for mild pain relief. Many patients rely on their OTC medications to treat headaches, fevers, muscle pain, tooth aches and mild arthritis. In March of 2020, the Food and Drug Administration (FDA) approved a new OTC medication by GlaxoSmithKlein (GSK) called Advil® Dual Action, which is a combination of ibuprofen 250 mg and acetaminophen 125 mg.¹

Prior to discussing the mechanism of action of ibuprofen/acetaminophen, it is important to understand the transduction of inflammatory intermediates. In other words, what causes pain? Phospholipids of the cell membrane are degraded by an enzyme called Phospholipase A2 to produce arachidonic acid.² Subsequently, arachidonic acid is metabolized by cyclooxygenase-1(COX-1) and cyclooxygenase-2 (COX-2) isoenzymes to yield eicosanoids.² Eicosanoids consist of inflammatory intermediates such as prostaglandins, which induce inflammation, pain, and fever.¹ Cyclooxygenase-3 or COX-3 isoenzymes are particularly expressed in the brain, and its activation induces pain and fever, but not inflammation, unlike those expressed by the activation of COX-1 and COX-2 isoenzymes.³

Ibuprofen is a nonselective COX inhibitor, in that it inhibits the two isoforms of cyclooxygenase, COX-1 and COX-2, preventing the formation of prostaglandins.⁴ Specifically, ibuprofen is a non-steroidal anti-inflammatory drug (NSAID), which helps stop processes that promote inflammation and pain. Although the mechanism of action of acetaminophen is not entirely understood, it is believed to inhibit the COX-3 pathway in the central nervous system, but not peripheral tissues.³ Thus, acetaminophen is generally used for its analgesic effect, as it lacks anti-inflammatory action.

Prior to the approval of GSK's ibuprofen/acetaminophen combination, many patients have been using ibuprofen and acetaminophen separately to treat their headaches, muscle aches, backaches, arthritis and other joint pain. In essence, GSK's new combined formulation offers a greater convenience for patients. Many now have the ability to take one combined formulation tablet, rather than two separate tablets. In any case, the desired therapeutic effect can be achieved.

It is not unheard of that a dentist will prescribe narcotic analgesics to patients post-operatively. In fact, it is considered common practice to treat pain which originates from dental procedures with narcotic-containing combination products. Among these heavily-regulated, prescription-only treatments are hydrocodone and acetaminophen (Vicodin®) as well as oxycodone and acetaminophen (Percocet®). According to the American Dental Association (ADA), for dental procedures associated with acute dental pain, NSAIDs remain the first-line therapy for acute pain management.⁵ Moreover, it has been demonstrated that these agents possess an efficacy superior to that of opioid analgesics, which begs the question: Why the apparent reliance on opioid pain relievers coupled with neglect of non-opioid analgesics in dentistry.

The co-administration of an NSAID with non-opioid analgesic, acetaminophen, makes for a that-much-more highly efficacious reduction in mild-to-moderate pain.⁵ It is by way of this combination that a dual-block of the nociceptive pathway is achieved, where the former acts peripherally and the latter, centrally. It is well documented that, "severe tooth decay, extraction of teeth, and root canals" inspire the dispensing of dentist-prescribed opioids by pharmacists.⁶ Ultimately, the question remains: Does GSK's ibuprofen/acetaminophen suffice as a stand-in for in doctrinated treatment?

For mild to severe pain, evidence-based recommendations put forth by the ADA do not, under any circumstances, welcome the use of opioid pain relievers. Instead, escalating doses of ibuprofen in combination with acetaminophen prevail. Even in the case of pain categorized as 'severe,' an opioid-free option exists-namely, 400mg-600mg of ibuprofen with a 500mg acetaminophen add-on.⁶ Both are to be taken every 6 hours for the management of postoperative pain. It should be noted that dentists are permitted to utilize their state's prescription drug monitoring program (PDMP) to inform their determination of an acute pain management strategy for patients.⁵ In their 2016 statement on the use of opioids in the treatment of dental pain, the ADA House of Delegates encouraged the practice amongst dentists following registration.

Furthermore, the organization advocates for the pursuit of, "continuing education [CE] in addictive diseases and pain management" as they pertain to opioid prescribing by aspiring

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dental professionals and dentists alike.⁷ On the matter of PDMP, pharmacists may be the key to routine use of the tool by dentists. Dentists have admitted to only consulting the database when having perceived patients to be at a high-risk for misuse, as evidenced by a 2018 survey of over 700 dentists nationwide.⁸ Slightly less than half of all survey-takers reported habitual use of PDMP.⁸ It would be wise of the dental professionals to be vigilant and consider the words of one of their very own, Michael Ellis, DDS. The clinical associate professor in oral and maxillofacial surgery at Texas A&M University's College of Dentistry warned dental students of the delicateness that comes with opioid prescribing, "you don't want to give them a problem they don't have."⁸

Evidently, the ADA is no stranger to the abuse potential associated with medication-combinations of oral analgesics. Our nation's ongoing opioid epidemic has remained a long-standing concern of healthcare providers belonging to every health field, including dentistry. It is with those in possession of prescribing power, regardless of how limited their scope, that share the responsibility to curb opioid access. Through exercising their professional judgment, dentists will prove valuable in the fight against opioid diversion and misuses; however, it is not without invoking patient education efforts of their own that an observable betterment of our nation's public health will ensue.

When accompanied by a working relationship between pharmacists and local dentists, patients stand a chance against the evils of misusing opioid pain relievers. Pharmacists, the community's most accessible healthcare providers, are ranked time and time again among some of the most trusted professions.⁹ Nearly 9-in-10 Americans are fortunate enough to live within 5 miles of a community pharmacy or pharmacist.¹⁰ Consequently, it is understandable that these healthcare professionals, once wrongfully pigeon-holed to their dispensing roles, now honorably bare the greater responsibility of fulfilling medication education needs. It is essential that their fellow healthcare heroes acknowledge them for their value and their drug expertise during these trying times. Now more than ever, interprofessional collaboration represents a necessary good. If our public health is to be safeguarded, promising FDA approvals alone will not suffice. Responsibility rests on the shoulders of practitioners to shape common practice in favor of patients.

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NMOSD Treatment

By: Lyana Sayilar PharmD. Candidate c/o 2022

Neuromyelitis optica spectrum disorder (NMOSD) is a rare disorder affecting 4,000 to 8,000 Americans. Adults with this disorder are often found to have anti-aquaporin-4 (AQP4) antibodies that primarily attack healthy cells and proteins in the optic nerves and spinal cord. The majority of patients have relapses within three years of the initial attack.^{1,2} In NMOSD, patients usually have occurrences of optic neuritis and experience eye pain and vision loss, of which approximately half of the patients have permanent visual impairment.¹ Transverse myelitis can also occur in a section of the spinal cord where myelin of neurons are damaged and lead to bladder dysfunction, loss of senses, and limb weakness. In addition, AQP4 antibodies can bind to aquaporin proteins of astrocytes along the blood brain barrier, causing disruption of the BBB and the release of cytokines and chemokines that recruit granulocytes, macrophages, and eosinophils. Further damage to oligodendrocytes, glial cells that produce myelin, lead to CNS damage. Additional symptoms of NMOSD include narcolepsy, hypotension, bradycardia, obesity, encephalopathy, and hypothermia.²

The initial treatment of NMOSD is 1 gram IV methylprednisolone administered daily for three to five consecutive days. If patients experience severe symptoms or are unresponsive to methylprednisolone, then therapeutic plasma exchanges may be administered as second-line therapy every other day for a total of seven sessions. After treating the attacks, patients would require preventative therapy lifelong. The Food and Drug Administration-approved preventative therapy to treat NMOSD includes Soliris® (eculizumab), Uplizna® (inebilizumab-cdon), or Enspryng® (satralizumab-mwge). Additionally, immunosuppressants, including mycophenolate mofetil, azathioprine, and rituximab are off-label medications prescribed for preventative treatment for NMOSD.³ IV eculizumab is a humanized monoclonal antibody that when bound to complement component C5 inhibits C5-mediated membrane attack complex. It is available under a restricted program, Risk Evaluation and Mitigation Strategies (REMS). The first four doses are administered at 900 mg weekly, followed by 1200 mg every two weeks thereafter. Patients should receive meningococcal vaccines and antibiotic prophylactic therapy if necessary, as eculizumab has the potential to increase the risk for meningitis.² It is also worthy to

note that eculizumab is contraindicated in patients with unresolved *N. meningitidis* infection. It can also cause upper respiratory tract infections, nausea, headache, and nasopharyngitis.⁴ Inebilizumab-cdon is a humanized antibody that suppresses the formation of lymphocytes from B cells upon binding to the CD19 antigen on B cells. Initially, 300 mg IV inebilizumab-cdon is given, followed by another 300 mg dose two weeks later. Patients receive 300 mg every six months thereafter; the first maintenance dose is given 6 months after the first 300 mg administration. Before every infusion, patients should receive pre-medications, consisting of a glucocorticoid, an antihistamine, and an antipyretic. Prior to receiving inebilizumab-cdon, patients should be screened for contraindications, such as hepatitis B and tuberculosis.²

Satralizumab-mwge was the most recently approved humanized antibody for NMOSD that prevents IL-6-induced inflammation once bound to IL-6 receptors. In two Phase III, randomized, double-blind, placebo-controlled clinical trials, satralizumab-mwge was more effective than placebo in lowering NMOSD attacks. In the first clinical study, SAKuraStar, 95 adult patients participated, of which 64 patients had AQP4 antibodies. Satralizumab-mwge was found to be only effective in patients with AQP4 antibodies although patients who do not have AQP4 antibodies could still have the disorder. There was a statistically significant relapse risk reduction of 74% in those treated with satralizumab-mwge (95% CI [0.11, 0.63]; $p=0.0014$).⁵ At the end of week 48, 83% of AQP4 positive patients were relapse-free and at the end of week 96, 77% of AQP4 positive patients were relapse-free. Furthermore, in the second clinical trial, SAKuraSky, 76 adult patients participated; 52 of them were AQP4 antibody positive. In this trial, satralizumab-mwge and placebo were given alongside an immunosuppressant, such as azathioprine, mycophenolate mofetil, or oral corticosteroids. There was a statistically significant relapse risk reduction of 78% in those treated with satralizumab-mwge (95% CI [0.06, 0.82]; $p=0.0143$). At the end of weeks 48 and 96, 91% of the AQP4 positive patients were relapse-free.⁵

Satralizumab-mwge is administered subcutaneously with a loading dose of 120 mg at weeks 0, 2, and 4, followed by 120 mg every four weeks.² Adverse effects of satralizumab-mwge include an increase in the risk of infections, such as reactivating hepatitis B and tuberculosis. During treatment with

NMOSD Treatment

By: Lyana Sayilar PharmD. Candidate c/o 2022

satralizumab-mwge, patients should be monitored for changes in liver enzymes and neutrophil counts. Common side effects include inflammation of stomach lining, common cold, upper respiratory tract infection, headache, joint and extremity pain, rash, fatigue, and nausea. Similar adverse effects are common with eculizumab and inebilizumab. Live-attenuated and live vaccines should not be administered while taking satralizumab-mwge, but can be given at least four weeks before treatment.¹

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Dangers of the High-Sodium Diet

By: Anjali Rana PharmD. Candidate c/o 2025

While too much of any food or substance is not good, sodium-rich diets are especially harmful to the body causing increases in blood pressure and fluid retention. Sodium is found in majority of the foods consumed. People should be cautious of processed goods and restaurant meals which tend to contain a lot of salt. Even dishes cooked at home may have a high sodium content. Consistently eating meals with a high salt content produces respiratory risks that effect functions of the heart, kidney, and brain.³ This continuous cycle prevents patients from attaining optimal health. By making the body work harder through changes in the potassium sodium channels, heavy salt intake leads to a mass consumption of calories, increased blood pressure, and the potential for stroke, heart attack, and premature death.⁵ Pharmacists can play a vital role in educating patients of the harmful effects high sodium diets can have on their health and encourage positive lifestyle modifications by actively discussing patients' nutrition and exercise regimen.

The body functions as an energy pathway continuously keeping systems in balance. When natural processes are disturbed, order will breakdown. Disparities throughout the body's natural physiology causes chaos to occur, stemming from direct effects on the sodium potassium pump. These channels found on red blood cells can have a direct impact in consuming calories at a rapid pace. Sodium and potassium are electrolytes needed to maintain normal fluid and blood volume, amongst other functions.¹ However, fluctuations in each ion can result in extreme consequences, especially changes in sodium levels. Hypernatremia, or an increased level of sodium, causes the body to counteract this imbalance by retaining water, causing excess of fluid. This imbalance creates the gain in weight suggesting abnormal calorie intake. Salt has the ability to cause individuals to eat more food then desirable. It can prevent the body from recognizing when its full, taking in more energy than necessary which can produce fat.⁶ This suggests that as individuals obtain more fat, they are acquiring extra calories that are not utilized by the body.⁶

The average American consumes about 3,400 milligrams of sodium a day while relatively healthy individuals get no more than 2,300 milligrams of sodium a day.² By consuming about one-third more the amount than what is considered healthy, patients force their hearts to work much

harder than necessary. Many individuals may not be aware of what foods are high in sodium or can only afford foods high in sodium due to their often-lower prices. This is most notably visible in table salt, a common household ingredient.³ Salt has been used for centuries as a preservative and is used as flavoring because it is cheaper compared to other spices.³ This means that sodium can be found in almost every meal, emphasizing how difficult it is to lower its use in patients' meals due to its many versatile applications. Fresh foods, such as vegetables and fruits, are foods naturally low in sodium and provide many other nutrients that can help improve the health of patients when combined with exercise.

With increased sodium intake, changes in blood pressure occur due to the stiffening of the arteries and veins found in the heart. Blood pressure is how great the force of blood is flowing through the blood vessels. This plays a factor in how the blood is circulated throughout the body and establishes how oxygen is supplied to necessary organs and tissues. If the value is greater than 130/80mmHg it demonstrates hypertension. Many factors can contribute to people developing hypertension. Modifiable risk factors include diets high in sodium and minimal potassium, consumption of saturated or trans fats, lack of exercise, and being overweight. Sodium is a key risk factor for developing hypertension. Untreated hypertension can cause fatal health conditions over time, such as heart disease and stroke.¹ To help manage blood pressure, the Centers for Disease Control and Prevention recommends following the DASH diet, adhering to medication regimens, and exercising routinely.⁴ The DASH diet calls for limiting food high in added sodium and expanding consumption of vegetables. All these factors can help patients live a healthier lifestyle that paves the way for better emotional, physical, and mental health.

Other than high blood pressure, consuming large amounts of sodium can be deleterious for other major organs such as the heart, kidney, and brain. The heart pumps oxygen-rich blood and carries nutrients throughout the rest of the body.⁵ Increased sodium intakes will enlarge the size and increase the thickness of the left ventricle, creating difficulties circulating blood due to decreased pumping efficiency. The kidney filters waste out of the body and reabsorbs nutrients back into the bloodstream. Increased sodium that leads to hypertension makes it harder for the kidneys to filter blood which will contribute to

Dangers of the High-Sodium Diet

By: Anjali Rana PharmD. Candidate c/o 2025

kidney damage, and if left uncorrected, will result in kidney failure.³ Lastly, increased sodium levels have a direct influence on brain health. It harms the nervous system, which creates extreme fatigue and headache.¹ If patients do not address increased salt intake, overtime it will manifest into more severe outcomes.

Pharmacists can play an important role to increase awareness of the health consequences associated with high sodium diets. Educating patients how to properly read nutrition labels can help patients make informed decisions about the amount of sodium contained in foods. According to the Food and Drug Administration, when the percent of the daily value for one serving size is five percent or less, the amount is considered “low sodium” while twenty percent or more is considered “high sodium”.²

This allows individuals to quickly identify if there is too much sodium within the contents of their food. Removing salt from meals entirely and using alternate forms of seasoning is another way for patients to reduce sodium content. Preparing dishes from scratch allows people to control how much sodium they will consume. It gives them the opportunity to choose fresh foods such as vegetables which are naturally low in sodium. There is evidence that sodium can also be reduced when individuals are cognizant when eating out at restaurants. The National Heart, Lung, Blood Institute believe researching the restaurant’s menu, making special requests to prepare foods without added salt, and substituting sides for healthier alternatives are ways to reduce sodium when dining out.⁷ This suggests there are ways to maintain wellness both at home and when out to eat. Changing ones eating plan is one way to address sodium consumption and it can be further managed through physical activity. Exercise is related to the loss of sodium due to the production of sweat during physical activity. As one sweats at a rapid pace, the fluid and salt that is lost allows for the blood pressure to drop allowing the body to work more efficiently.⁶

Heavy salt intake leads to an increased consumption of calories, higher blood pressure, and potential for stroke, heart attack, and premature death if uncontrolled.⁵ Whether an individual is eating a snack or a meal, traces of sodium can be found which add up throughout the day. As the most accessible

health care providers, pharmacists can make an impact educating the general population about the harms of high sodium diets and provide lifestyle modifications to improve the health of our patients.

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Use of dexamethasone for the treatment of COVID-19: an update

By: Bisma T. Sekhery PharmD. Candidate c/o 2025

COVID-19 has had a significant impact on the health, economic, and social aspects of life for every person. Currently, there is only one Food and Drug Administration (FDA)-approved treatment for COVID-19—remdesivir (Veklury®). The lack of approved therapies makes COVID-19 difficult to treat and increases overall mortality for geriatric patients and immunocompromised populations. Though recently approved, remdesivir, an antiviral which inhibits SARS-CoV-2 RNA-dependent RNA polymerase, which can potentially shorten the duration of infection, still holds the emergency authorization for treatment of COVID-19.² Due to dexamethasone's (Decadron®) mechanism of action, which involves reducing inflammation, many patients have been receiving this as adjunct to remdesivir.

Dexamethasone is an anti-inflammatory corticosteroid that decreases inflammation by reducing neutrophil migration, reducing production of inflammatory mediators and reversing increased capillary permeability.³ It is commonly used as an immunosuppressant in several disease states. However, since dexamethasone can cause immunosuppression, there is a risk for secondary infections. Therefore, selecting the right dose is critical for all disease management.¹

The use of dexamethasone in treatment of COVID-19 has been debated because of its negative effects, which occur due to prolonged use, higher doses, but there may be a benefit for the treatment of critically-ill COVID-19 patients.² However, trials which have examined the efficacy of dexamethasone for the treatment of COVID-19 have shown improvement in the overall health of COVID-19 patients. According to the Infectious Disease Society of America Guidelines, initiating dexamethasone 6 mg IV/PO once daily is recommended in critically ill patients with COVID-19.⁸ It is also recommended in patients with severe, but not critical COVID-19. To further support this recommendation, the National Institutes of Health (NIH) stated that hospitalized patients with COVID-19 should be given dexamethasone 6 mg once daily for ten days or until discharge.⁸ In practice, providers often utilize higher dosing for dexamethasone. The dose can be as high as 20 mg IV twice daily. Higher dexamethasone dosing strategies are used in critically ill patients that have progressed to Acute Respiratory Distress Syndrome (ARDS) secondary to COVID-19. The exact benefit of adding a steroid to antiviral therapy for treatment is

currently unknown, but there are trials currently underway.⁸

The coDex, randomized, open-label clinical trial was carried out to assess the overall benefit of dexamethasone in moderate to severe ARDS secondary to COVID-19 by the Coalition COVID-19 in Brazil. Since the patients enrolled in the trial had progressed to ARDS, they all received higher doses of dexamethasone. Patients received either dexamethasone 20 mg IV for 5 days, followed by 10 mg dexamethasone IV for 5 days or until ICU discharge plus standard of care therapy or standard of care therapy alone. Standard of care entailed that the patient received IV fluids, remdesivir, and appropriate symptom management without dexamethasone. The primary outcome was number of ventilator-free days in the first 28 days after hospital admission. The secondary outcomes included all-cause mortality at 28 days, clinical status of patient, ICU-free days during the first 28 days, Sequential Organ Failure Assessment (SOFA) scores, as well as mechanical ventilation use at 28 days.⁷

A total of 299 patients were followed in this trial. The primary endpoint yielded statistically significant results and showed that the mean number of ventilator-free days was 6.6 days in the dexamethasone group versus 4 days in the standard of care group ($p = 0.04$). The only statistically significant secondary endpoint showed that the mean SOFA score was 6.1 in the dexamethasone group versus 7.5 in the standard of care group ($p = 0.004$). There was no significant difference in the secondary endpoints including all-cause mortality and ICU-free days in the first 28 days. The difference in clinical status was nonremarkable. Patients in the dexamethasone group had a mean score of 5, while the standard of care group had a score of 5-6 ($p = 0.07$). Overall, this trial demonstrated that use of dexamethasone contributed to a greater number of ventilator-free days. This trial had several limitations—it was not blinded, severe cases of COVID-19 without progression to ARDS were not included, patients were only followed for 28 days, and men outnumbered women. Although the results show statistical significance, one must also question whether dexamethasone's adverse effects outweigh its potential benefit in this cohort of patients. The trial's results also demonstrated that incidences of insulin use, new infections, catheter associated UTI, and pneumonia were the same in the both the control group and dexamethasone group, which is promising.⁷ Data showed a statistically significant improvement in ventilator-free days and

Use of dexamethasone for the treatment of COVID-19: an update

By: Bisma T. Sekhery PharmD. Candidate c/o 2025

the side effect occurrence was similar in the both of the groups.

While the benefit of dexamethasone is apparent in COVID-19 patients with ARDS, its benefit when used in COVID-19 patients without ARDS remains unclear. In October 2020, the RECOVERY trial was completed and carried out by Nuffield Department of Population Health at the University of Oxford. In this trial, 2,079 COVID-19 patients being treated with dexamethasone 6 mg IV for 10 days and 4,278 COVID-19 patients being treated with standard of care therapy were followed. The primary outcome was all-cause mortality at 28 days. Secondary outcomes included time (days) until discharge. Enrolled patients included those that had a confirmed diagnosis of COVID-19 and were hospitalized because of the virus. Mortality at 28 days from COVID-19 was 22.9 percent in the dexamethasone group versus 25 percent in the standard of care group ($p=0.001$). Dexamethasone's benefit was seen mostly in patients who had invasive mechanical ventilation as well as patients on oxygen support without ventilation. Use of dexamethasone in patients with no respiratory support did not show any benefit. The mean duration of hospital stay was 12 days in the dexamethasone group versus 13 days in the standard of care group. Incidence of progression to mechanical ventilation was lower in the dexamethasone group compared to the standard of care group.⁴ Limitations of this study included an unequal distribution of participants in both groups, that women comprised only 36 percent of enrolled patients, and that it was carried out for a short period of time.

Despite their limitations, the two trials discussed above provide important information about the use and efficacy of dexamethasone in treating COVID-19 patients. Since COVID-19 continues to be a threat and no statistically significant adverse effects were noted in both trials, use of dexamethasone is justified when treating COVID-19 patients in inpatient settings. Further clinical trials are necessary over longer periods of time to assess if there is a long-term benefit of dexamethasone use in the treatment of COVID-19.

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Flu Shot Season, COVID-19 and How Pharmacies are Bracing for Impact

By: Rebecca Samuel, PharmD Candidate c/o 2022 and Pallak Sharma, PharmD Candidate c/o 2022

It is flu shot season! That's a phrase that causes almost every pharmacy staff member to take a deep breath. Amid the pandemic, flu shot season is busier than ever and it is directly affecting pharmacies across the country. In order to prepare for an expected increase in demand, hospitals and community pharmacies are stockpiling more flu vaccines than ever. Community pharmacies like Rite Aid and Walgreens have purchased more flu vaccines this year in comparison to previous years to meet the demand. Rite Aid purchased 40% more vaccines and Walgreens reports it expects a 30% to 50% jump in demand for flu shots and other immunizations.¹

The flu vaccines are manufactured by multiple pharmaceutical companies and they prepared for this increase in demand as well. It is projected that vaccine manufacturers will prepare 194 to 198 million doses of the influenza vaccine throughout the 2020-2021 flu season. However, these projections are subject to change throughout the season. There are a variety of vaccines that will be prepared throughout the season. Ninety-nine percent of the vaccines prepared will be quadrivalent which means they have four different antigens present in the vaccine (the same three that are in the trivalent vaccines, plus one more). Approximately 87% of the vaccines will be thimerosal-free or thimerosal-reduced, or in other words, preservative free, and approximately 20% will be egg free.²

So why the spike in demand? An annual flu vaccine is recommended for almost everyone 6 months and older. It is one of the best ways to reduce flu illnesses, hospitalizations and death from flu. The coming months are especially known as flu season, but COVID-19 adds another layer of uncertainty. For this reason, getting a flu shot is more important than ever so that people can stay healthy, out of the hospital, and help ease the burden on our health care system. The flu is a contagious illness that affects the nose, throat, lungs, and other parts of the body. It can spread quickly from one person to another and can cause mild to severe illness, and at times can lead to death. The respiratory symptoms of the flu can seem similar to the coronavirus as well, which can definitely be cause for concern.³ A severe case of either the flu or COVID-19 can lead to hospitalization. Doctors are also worried about the potential impact of having both the flu and coronavirus since there is such an overlap in symptoms. However, with the flu vaccine available, we are able to reduce this risk and reduce the strain

on hospitals in this pandemic.

But even without the stress of a pandemic, flu season has still affected millions of people in previous years. Between 9 million and 45 million people are infected with the flu each year, and between 140,000 and 810,000 are hospitalized, according to Center for Disease Control and Prevention (CDC) estimates. In 2018, the U.S. recorded its highest death toll from the flu in recent history, with 80,000 deaths.⁴ The seasonal flu vaccine protects against the influenza viruses that research indicates will be most common during the upcoming season. Most flu vaccines in the United States protect against four different flu viruses ("quadrivalent"); an influenza A (H1N1) virus, an influenza A (H3N2) virus, and two influenza B viruses. For the senior population, those that are 65 years of age or older, a different set of vaccines are offered.

There is a quadrivalent flu shot with an adjuvant available for seniors. The adjuvant in this particular combination provides an immune-boosting response for this specific population.⁵ Another version of the quadrivalent flu shot is also available for seniors which is provided as a higher dose. This means that the high-dose quadrivalent vaccine contains four times the antigen than the standard quadrivalent flu shot given for those under the age of 65. Both the adjuvant and high-dose versions of the vaccine are beneficial to people who are 65 years and older because this population tends to have weaker immune systems compared to those who are younger and are therefore more at risk for infection and flu-related deaths. Those who are 65 years and older account for approximately 70-85% of flu-related deaths and approximately 50-70% of flu-related hospitalizations each flu season. Since older adults have lower immune responses, this can contribute to lower vaccine effectiveness. Research has gone into developing these flu vaccines specifically for this age group to provide better immunity. The CDC states the first step to preventing the flu is receiving the vaccine and therefore the CDC does not suggest one vaccine above another.⁶

Vaccines help develop immunity by imitating an infection that almost never causes illness. The purpose of this is to stimulate production of T-lymphocytes and antibodies. Sometimes, after getting a vaccine, the body is trying to build immunity, so minor symptoms such as fever can occur; this is normal and can be

Flu Shot Season, COVID-19 and How Pharmacies are Bracing for Impact

By: Rebecca Samuel, PharmD Candidate c/o 2022 and Pallak Sharma, PharmD Candidate c/o 2022

expected. Once the imitation infection goes away, the body is left with a supply of “memory” T-lymphocytes, as well as B-lymphocytes that will remember how to fight that disease in the future. However, it typically takes a few weeks for the body to produce T-lymphocytes and B-lymphocytes after vaccination. Therefore, it is possible that a person infected with a disease just before or just after vaccination could develop symptoms and get a disease, because the vaccine has not had enough time to provide protection.⁷

This is why getting the flu shot is so important at this time of year. Even if you receive the flu shot right now, it will take almost two weeks to be effective, leaving people susceptible to infection. The CDC recommends that the public get vaccinated in early fall, and ideally by the end of October to provide protection through the bulk of flu season. The CDC says getting vaccinated too soon, in July or August, for example, is associated with less protection later in flu season. This information has not stopped the influx of patients. Patients were seen coming in for flu shots as soon as they became available, as early as August.

The stress of the COVID-19 pandemic does not stop at the patient-level. Manufacturers have increased their projected supplies, pharmacies have increased their inventories, and hospitals must be prepared for the possibility of individuals that have COVID-19 and the flu at the same time. It is essential to receive the flu vaccine as soon as possible in order to optimize the health of the public and ease the burden on our healthcare workers. By getting a flu shot an individual not only protects themselves, but the people they are around as well.¹

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@ Katharine Russo

6th Year, STJ; Editor-in-Chief

The Rho Chi Post has been a forum for students, faculty, and staff to advance their knowledge in the field of pharmacy since 2011. The platform allows for students to practice their written communication skills while offering an innovative and creative workspace to bring together various aspects of the pharmacy profession. I am proud to continue this tradition by fostering a publication suited to keep our readers up-to-date, especially in these unprecedented times during the COVID-19 pandemic.



@ Shireen Farzadeh, PharmD

Graduate Copy Editor [Content-Focused]

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!



@ Kathleen Horan, PharmD

Graduate Copy Editor [Content-Focused]

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.



@ Michael Lim, PharmD

Graduate Staff Writer

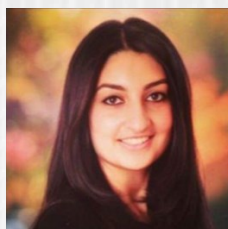
In the spirit of advancing the pharmacy profession, the Rho Chi Post never ceases to produce valuable content showcasing the innovation and diversity of the career. As a Staff Writer for the Post, I am honored to have the opportunity to use writing to both educate and push readers to strive for excellence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



@ Anna Diyamandoglu, PharmD

Graduate Copy Editor [Content-Focused]

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 non-pharmacy students alike will find relatable and take an interest in.



@ Daniela Farzadfar, PharmD

Graduate Staff Writer

Pharmacy is a constantly evolving profession. Writing for the Rho Chi Post gives me the opportunity to enlighten my peers and myself on changes occurring in the field that we are often not taught in the classroom. The Rho Chi Post serves as a creative outlet where students can express their opinions and share new information by combining their passion for writing and the pharmacy profession. I hope that my contribution to this newsletter inspires others to improve patient outcomes by staying up to date on recent changes.



@ Evanthia Siozios, PharmD

Graduate Staff Writer

Rho Chi Post is a newsletter that gives students the opportunity to learn and write about novel topics and broaden their knowledge while demonstrating their writing skills. For me, being involved with this newsletter is not just about learning something new but also sharing relevant topics which have an impact on patients' lives. I have learned so much from writing for the Rho Chi Post and hope to inspire others with my words. As a future pharmacist I want to learn to teach and get to give.

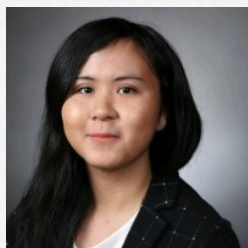


@ Judy Koag

6th Year, STJ; Copy Editor [Graphics-Focused]

I am so excited to join the Rho Chi Post, a newsletter which strives to create high quality and creative content. I look forward to working with the team to promote the profession of pharmacy and communicate ideas that inspire and attract readers through the use of graphic design. Graphic design has always been my passion and I hope my contributions continue the Rho Chi Post's mission.

RHO CHI POST: TEAM MEMBERS



@ Lexie Villariasas

5th Year, STJ; Copy Editor [Graphics-Focused]

With the world of pharmacy changing day by day, it can be challenging to keep up with all the updates. The Rho Chi Post provides an excellent platform for students to share their insights and thoughts on the happenings within the field. I'm excited to join the Rho Chi Post and a team that is passionate about the profession. With a passion in graphic design, I hope to continue the vision the newsletter has and am grateful for the opportunity to do so!



@ Jason Ifeanyi

5th Year, STJ; Social Media Manager, Staff Editor

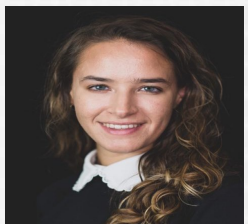
The Rho Chi Post has a clear mission: to advance the profession of pharmacy by instilling the desire in others to pursue intellectual excellence and critical inquiry. I could not be more excited to join the Rho Chi Post. This is an interactive platform that affords me a unique opportunity to contribute to the process of educating readers on advances made in drug discovery and development, modifications in treatment guidelines, and the implications these changes have on the practice of Pharmacy. I am eager to work on this team of equally motivated students, and I look forward to utilizing my skills, past work and volunteer experiences to assist the Rho Chi Post in achieving their goals.



@ Alisha Kuriakose

5th Year, STJ; Finance & Outreach Manager

I wanted to be part of Rho Chi Post as it provides a platform for students to express their ideas and educate others on global healthcare issues. As a future pharmacist, this is my way of contributing to the change I want to see in our growing profession and make my voice heard. I am very excited for the privilege to work alongside the editorial board to produce a newsletter and serve as the 2020-2021 Finance and Outreach Manager!



@ Carolina Guerreiro

6th Year, STJ; Staff Editor

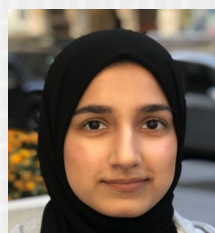
As a student of the arts and sciences all my life, I have always been interested in the intersection between the two. The most exciting part about being a Staff Editor for the Rho Chi Post is not only the ability to share the most exciting and clinically relevant healthcare news with our audience, but also having the opportunity to tap into my creative side while relying on my clinical knowledge and previous scientific writing experience. When I'm not busy editing, I am working to capture stories that raise awareness about the diverse roles pharmacists can play in healthcare settings worldwide. I strive to share my vision of untamed areas of pharmacy practice and hope to inspire you as readers to explore them for yourselves.



@Edwin Gruda

5th Year; STJ; Staff Writer

My name is Edwin and I am a Doctor of Pharmacy student at St. John's University. My favorite aspect of pharmacy school is learning about the clinical and therapeutic components of drugs and diseases. As a kid, I was interested in both the math and sciences. The reason I chose pharmacy over other health care professions is because a lot of people rely on their medications to make them feel better. Pharmacists are the most accessible healthcare providers and are able to help patients optimize their drug therapy in order to improve their health. Throughout the beginning of pharmacy school, I volunteered at Columbia University Medical Center on the oncology department for one year. After that, I have been working as a pharmacy intern at Sandcastle Pharmacy, which is primarily an HIV specialty pharmacy. As a staff writer, I want to highlight the critical role of clinical pharmacists within an interdisciplinary team, in improving and enhancing a patient's quality of life.



@Rubab Hassan

5th Year, STJ; Staff Writer

The Rho Chi Post gives pharmacy students the opportunity to explore their interests, whether it be editing, writing, or graphics, while also enhancing their skills and knowledge as student pharmacists. I am excited to be a part of the Rho Chi Post because it is a great way to expand on what I have learned during my time in pharmacy school and also keep developing my writing skills. Being a writer gives me an outlet to raise awareness on the advancements that are constantly happening in the field of pharmacy and allows me to be part of an amazing team in hopes of providing other students with our best work.



@ Zarnab Jillani

5th Year; STJ; Staff Writer

The Rho Chi Post is a great platform for students to not only apply what they have been learning in school, but to break norms and report on pharmacy related events that are not always addressed in an academic setting. I look forward to writing for the Rho Chi Post because it will give me a way to delve deeper into what I'm studying at the moment and give me a chance to share that with my peers. Moreover, with the constantly changing world of pharmacy it is important to stay up to date and present the information in a creative way.



@ Natalia Loomis

5th Year STJ; Staff Writer

The profession of pharmacy and what a pharmacist entails is an ever evolving journey. Rho Chi Post becomes an excellent resource in tracking these advances. It provides student pharmacists to not only read and become educated on what other paths might be in store for them, but to become part of the team and create their path. I am so thankful and excited for the opportunity to become a staff writer for the RCP; allowing myself to use my creative ability to not only create my path, but write content to shed a light on all the amazing opportunities that of being a pharmacist entails.

RHO CHI POST: TEAM MEMBERS



@ Jeremy Mesias

5th Year, STJ; Staff Editor

The field of pharmacy is constantly growing and improving with every coming day. Today's headlines become tomorrow's history. As healthcare leaders in a dynamic field, it is important to stay up to date. The Rho Chi Post serves as an excellent tool to help students become more informed about our profession, as well as providing them with the opportunity to contribute their own two cents to the conversation. I am excited to join the team and look forward to contributing to keeping students on top of current pharmacy advancements.



@ Tolulope Omisakin

5th Year, STJ; Staff Editor

As an avid reader, I have always taken an interest in how things were written. Whether it be novels, journal articles, or magazine columns, there is always a peculiar way in which a writer tells a story. The real story is only 50% of what is written and the rest is in how the writer decides to disseminate that information. The Rho Chi Post serves as an amazing outlet for student pharmacists, allowing us to delve into the intricacies of different perspectives and ideas in the world of pharmacy. It also gives us the opportunity to decide how we want to detail these new found perspectives and ideas to our audience. As an incoming editor for The Rho Chi Post, I hope to enhance and curate the way each writer tells their stories and help them reach their audience at new levels.



@ Aiša Mrkulić

5th year, STJ; Staff Writer

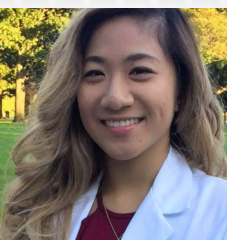
It is admirable of the Rho Chi Post to provide us student pharmacists with a platform to use our voice. Home to the free-exchange of thoughts, opinions & ideas, all are welcome to contribute—so don't count yourself out! Eager to use my voice more than ever before, I counted myself in. As a Staff Writer, patient advocacy, furthering of public health initiatives & diversifying public perception of pharmacists all suddenly become possible. After all, who if not us is to showcase the value of America's most-trusted healthcare professional? I encourage both our loyal & first-time readers to please, read on with us. To learn to read is to learn to write and to learn to write is to become better communicators—disseminators of information. When this occurs, the quality of patient care im-



@ Preethi Samuel

6th Year, STJ; Staff Writer

As future drug experts, we student pharmacists have a responsibility to take initiative and educate ourselves on advancements in healthcare, so as to improve the quality of patient care. The Rho Chi Post serves as a great platform for students to get information that is both accessible and accurate. To be a voice for my future, fellow pharmacists is to be heard and my patients cared for---as pharmacists are their best, sometimes their only, advocates. I hope that my contributions to the RCP spark readers' curiosity, and inspire conversations of how we may become better pharmacists.



@ Nicole Ng

5th Year, STJ; Website Liaison

Being able to join the Rho Chi Post not only gives me the opportunity to expand my knowledge of the profession of pharmacy, but also allows me to be a part of educating students about the constant changes within the field. Through my involvement, I hope to increase the accessibility of our content and motivate students to broaden their knowledge and stay up-to-date. I am excited to work with the team to produce a newsletter that effectively and efficiently communicates all news that affects our healthcare profession.



@ Lyana Sayilar

5th Year; STJ; Staff Writer

I am thankful for the opportunity Rho Chi Post provides by engaging students, pharmacists, and faculty to learn from each other and spark new ideas, thoughts, and interests. The pharmacy profession is an ongoing and lifelong learning path and Rho Chi Post emphasizes and mirrors the importance of learning to provide pharmacists at our current jobs and patients in the future with recent information to improve patient care and outcomes. With the help of Rho Chi Post we can practice analyzing the literature that we read to improve our decision-making skills and communicate our findings with other members of the healthcare team.



@ Mah Noor

6th Year, STJ; Staff Writer

Rho Chi Post is an amazing student-operated newsletter publication that is doing an astonishing job delivering updated news as well as giving students the opportunity to give back to the pharmacy community. As a staff writer, I hope to play a key role in educating students on the different aspects of pharmacy and how much growth takes place in this field. Reading the Post since freshman year has helped me gain a better understanding of what it means to be a pharmacist and I hope to achieve that same understanding in students who read my articles.

RHO CHI POST: TEAM MEMBERS



@ Bisma Sekhery

6th Year, STJ; Staff Writer

There are two things I am passionate about one which is pharmacy and the second which is writing. The Rho Chi Post is a professional newsletter, which allows students to educate as well as learn more about the field of pharmacy as it evolves. I am beyond excited to contribute to this newsletter and provide my fellow classmates and peers interesting news about pharmacy. I have always enjoyed reading The Rho Chi Post articles throughout pharmacy school. The articles were interesting and educational. This allows me to make an important contribution to society and spread awareness not only of new drugs and advancements in the field, but current issues in the pharmacy world. Having a voice is very important and writing for this newsletter allows me to have one.



@Erica Tonti

5th Year, STJ; Staff Writer

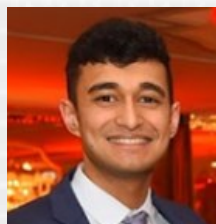
The profession of pharmacy is constantly evolving and adapting to the ever-changing field of healthcare. The Rho Chi Post serves as an amazing outlet for students to be informed, as well as to inform others, on the most up to date and relevant information. I could not be more excited to join the Rho Chi Post. This opportunity allows myself and my peers to take initiative and raise awareness of the advancements in the field of pharmacy. As a staff writer, I look forward to contributing to the Rho Chi Post and am grateful for the opportunity to educate students on the growth within our profession.



@ Richa Tamakuwala

5th , STJ; Staff Editor

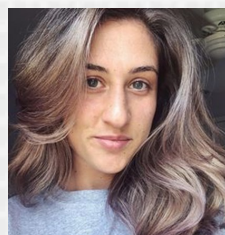
Growing up, reading was always my favorite hobby. The way the authors were able to create such vivid images, the way they could make you feel what the characters were feeling, the way they captured their readers' attention so tightly that nothing else mattered in the moment all motivated me to start writing. Since starting pharmacy school, my writing has unfortunately been placed on hold, but after learning about Rho Chi Post, I'm excited to start writing again. Writing for Rho Chi Post will allow me, along with many other students, to do something I enjoy while updating fellow future pharmacists on the ever-changing field of pharmacy.



@ Nishanth Viswanath

5th Year, STJ; Staff Writer

The profession of pharmacy is continuously expanding to meet new demands and offer novel platforms for innovation in healthcare. With an abundance of new information and guidance being published everyday, it can become difficult for students and professionals to stay updated with relevant information and find new outlets to learn. The Rho Chi Post not only allows us to be informed about the current state of our profession, but also allows students to voice their opinions and connect with each other through literature. I am excited to be part of its team, and hope to provide meaningful and resourceful contributions.



@ Dana Weinstein

5th Year; STJ; Staff Writer

I am so excited to be a part of the Rho Chi Post team. This opportunity allows both myself and my peers to be well informed about the ever-changing profession of pharmacy and the vital developments in science and healthcare. Beyond the classroom setting, this newsletter fills in the gaps for the most up-to-date and current advancements for students and faculty. As a staff writer, I look forward to acting as an educator, a motivator, and an executor to further the mission and goals of 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

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