

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











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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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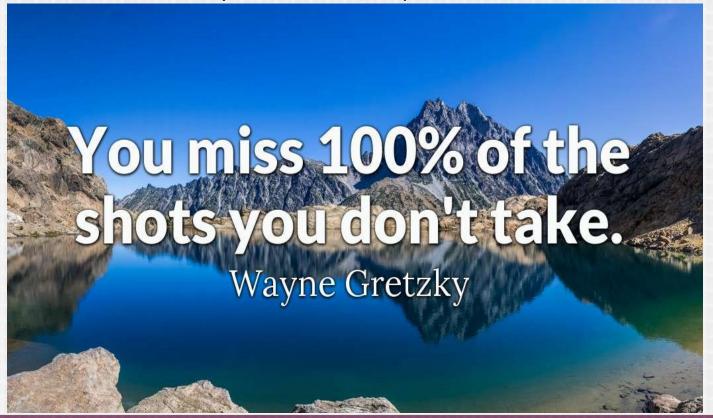


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QUOTE OF THE MONTH

By: Matthew Kahn, Graphics Editor





An analysis of collaborative drug therapy management and its impact in New York State

By: Shireen Farzadeh, PharmD Candidate c/o 2019

Collaborative Drug Therapy Management (CDTM) began as a three year demonstration project in 2012. It was extended and passed as a bill in September 2015 by the New York State Assembly and Senate and signed into law by the Governor Andrew Cuomo. The CDTM authority was initially scheduled to sunset in September 2018 but as of March 2018, it has been delayed to sunset in July of 2020.

CDTM is a formal partnership between qualified pharmacists and physicians that allows pharmacists to manage drug therapies given consent by their patients which can be practiced in hospitals or nursing homes with on-site pharmacy.² Pharmacists may adjust medication strength, frequency of administration or route of administration but are not permitted to substitute or select medications that differ from the medications that initially prescribed unless substitutions are authorized by protocol. Upon making any changes to patients' drug therapies or entering anything new into their health records, pharmacists are required to notify the patients' physicians. The law states that pharmacists and institutions must report results of implementing CDTM to the State Education Department by September of 2018.3

CDTM is beneficial to patients, pharmacists, physicians, and health plans. Patients under CDTM have increased access to health care and are more likely to have optimal drug therapy regimens. As a result, patients save more money by having fewer drug related problems such as adverse drug reactions, drug interactions, and poor adherence. CDTM also allows health education, health screening, and other services to extend to underserved populations with limited physician access by allowing pharmacists to identify underlying conditions of patients that require physician care.²

Numerous surveys have reported patient satisfaction with CDTM and that patients have positive relationships with their pharmacists in this model of care. Pharmacists under CDTM are also able to be less production-oriented and more patient-focused. By using their knowledge and clinical skills to improve patient outcomes, pharmacists demonstrate their integral role in the interprofessional team. Physicians benefit from having pharmacists and their unique drug knowledge supporting patients' drug regimens because this collaborative form of health care leads to fewer preventable doctor visits, more physicianpatient interaction and better management of complex cases. Additionally, physicians are more likely to be referred by pharmacists through CDTM and health plans benefit from the implementation of CDTM through optimized drug therapy regimens which reduces the cost of care.² According to a survey of CDTM in U.S. hospitals, the prevalence of CDTM increased significantly from fifty percent in 2003 to sixty six percent in 2013, indicating the success of collaborative health care practice.4

Disease conditions that are under CDTM include anticoagulation, diabetes, heart failure, human immunodeficiency virus (HIV), oncology, and asthma. In New York, Brooklyn Hospital Center has implemented CDTM services for anticoagulation, diabetes, HIV, heart failure, and asthma. HIV-positive patients tend to be hesitant towards starting treatment because they are usually asymptomatic and because HIV medications are difficult to adhere to due to intolerable side effects. Pharmacists at the aforementioned institution help break this barrier and allow patients to understand that although HIV has no cure, medications can slow its progression and prevent further complications. Additionally, half of New Yorkers with asthma are not well controlled mostly due to not knowing how to use their



medications properly. CDTM implementation and management of asthma patients by collaborating pharmacists at Brooklyn Hospital Center have reduced emergency department visits for asthma exacerbations from thirty percent to seventy five percent between 2011 and 2014.¹

Kingsbrook Jewish Medical Center in Brooklyn, New York has implemented anticoagulation CDTM as well. Warfarin (Coumadin®) is the most commonly prescribed anticoagulant but has a complex monitoring regimen and puts patients at a high risk for bleeding. This increased risk makes collaboration between physicians and pharmacists imperative to the success of treatment. Rochester General Hospital in Rochester, New York has implemented diabetes CDTM. Many diabetics do not receive guideline-recommended therapy, therefore, pharmacists at this institution play an integral role in adjusting patient regimens to achieve their HbA1c targets. Patients managed by collaborating pharmacists in four hospital-based ambulatory care clinics that are affiliated with Rochester General Hospital demonstrated an increase in achieving their therapeutic HbA1c targets of seven percent to ten percent from twenty two percent to thirty nine percent between 4 to 12 months.1 Collaborating pharmacists also serve to manage patients with heart failure at Montefiore Medical Center and Bronx Lebanon Hospital in Bronx, New York. Pharmacists play an important role in optimizing patient medication, as poor adherence and inappropriate medication regimens worsen heart failure. Readmission rates have decreased significantly in the aforementioned CDTM heart failure programs. Memorial Sloan Kettering Cancer Center in Manhattan, New York also has collaborating pharmacists managing cancer patients. Pharmacists help provide and manage supportive care necessary for patients with intense chemotherapy treatments to reduce complications. Overall, CDTM has allowed patients' disease states to become better controlled and with fewer complications.¹

So far, CDTM is permitted in over 46 states.² New York State Council of Health System Pharmacists (NYSCHP) is currently working to add nurse practitioners to CDTM and making the patient consent requirements less burdensome.1 To become a CDTM pharmacist, one can http://www.op.nysed.gov/prof/pharm/ at pharmcdtmapp.pdf. To be eligible, one must work in a facility regulated under article twenty-eight of public health law. For pharmacists with a PharmD, they must be licensed for at least two years, be clinically experienced for at least one year, and be board certified or have completed a residency.³ As pharmacy students, our role is to make CDTM permanent legislation without a future sunset-period. We can help by lobbying in the form of written letters or emails to our local state legislators.

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Integral role of pharmacists in patient care and the interdisciplinary healthcare team

By: Shivani Shah, PharmD Candidate c/o 2021

Pharmacists are the primary drug experts in the medical field. Medication reconciliation, patient counseling, and creating drug therapy regimens are important components of health care which are the pharmacist's responsibility. Many pharmacists are commonly seen behind the counter at your local CVS or Walgreens, glued to a computer screen arguing with insurance companies and stapling labels to prescription bags. However, the role of the pharmacist is evolving into one that revolves around patient care and collaboration with other healthcare professions.

In its most recent publication, "Best Practices for Cardiovascular Disease Prevention Program," the Centers for Disease Control and Prevention (CDC) calls attention to the important role pharmacists play in health care and recognizes the value of a pharmacy degree in a teambased care practice model. Once a patient is diagnosed with a cardiovascular disease, their risk of stroke and heart attack significantly increases. With a pharmacist on the health care team, the patient is able to receive the best guidance and medication regimen to ensure such occurrences are circumvented. Consulting with the physician and coming up with a therapy that best suits the patient's lifestyle as well as one that is practical for the patient ensures the best outcome.

The expanded role pharmacists play in patient care is seen at a hypertension clinic at the Caring Health Center in Springfield, Massachusetts which is run by Victoryn Williams, PharmD, MBA. When asked what is so unique about a pharmacist-led clinic, Dr. Williams stated, "The beauty of a pharmacist-led clinic is that patients can come in and see us more frequently for monitoring and to address any questions or concerns they have regarding their medication regimen." Doctor's visits are often rushed and patients do not have a chance to go over their medications and ask questions. Clinics that are solely run by pharmacists for the purpose of answering questions and monitoring patient health status better achieve optimal care results. Working to improve heart health is one of the many ways pharmacists can make a difference in patient care.

The opioid epidemic is a public health crisis that is very rampantly enveloping our nation. Clinical pharmacists at the Kaweah Delta Medical Center in Visalia, California are taking on an innovative approach to deal with pain management and medication safety in patients that take opioid medications. They have implemented a two-pronged approach to helping patients safely and effectively control their pain which includes on-request consultations with patients who are admitted to the hospital's medical or surgical floors, and an opioid stewardship program.³ The consultation service allows pharmacists to make recommendations to the health care team regarding the patient's pain management regimen. They can



increase, decrease, or change a medication dosage based on their professional judgment after a verbal assessment of the patient's pain complaint. The opioid stewardship program includes a daily review of facility-generated electronic reports that identify high-risk patients on the basis of certain criteria including having their pain needs over met, having their pain needs under met and having multiple diseases which require them to be on many medications.³ Many opioid addictions stem from hospital treatment, therefore, discharge counseling and inpatient counseling are crucial pharmacist responsibilities which have the potential to minimize risk of opioid abuse.

Pharmacists play a crucial role in collaborative patient care. The didactic coursework taught during the initial years of pharmacy school gives pharmacy professionals the clinical knowledge and skill set to make appropriate decisions regarding drug therapy regimens and how to

best assess patients. Experiential education through Introductory Pharmacy Practice Experiences (IPPEs) and Advanced Pharmacy Practice Experiences (APPEs) gives pharmacy students hands-on experience in the real world and an idea of the role pharmacists play in the pharmaceutical arena. It is important that pharmacists continue creating innovative ways to get involved in team-based patient care to improve all patients' health prospects.

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Read Something Interesting in the News? Want to share it with your Peers? Submit your articles to the Rho Chi Post!

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Understanding treatment options for chronic pain management in geriatric populations

By: Alex Chu, PharmD Candidate c/o 2019 & Joseph Eskandrous (PharmD Candidate c/o 2019)

The geriatric population grows older with each passing day and is more likely to experience chronic pain due to shifts in body composition and pathological diseases. Chronic geriatric pain may be defined as an unpleasant sensory and emotional experience associated with actual or potential tissue damage for persons who are either aged (65 to 79 years old) or very aged (80 and over) and who have had pain for greater than 3 months. Treatment of chronic pain in the geriatric population is complicated by both age-related decline in cytochrome P-450 function and polypharmacy. There is an increased risk of adverse effects secondary to drugdrug interactions between medications. Treatment of chronic pain can generally be classified into three categories — physical, medicinal, and psychological.

Chronic pain can either be nociceptive or neuropathic in nature which makes determining its source a daunting task.² Drug pharmacotherapy is the first and most widely used treatment modality to treat chronic pain. 1 In terms of safety profile and ease of access, first line treatment for chronic pain begins with over-the-counter drugs. Acetaminophen is considered first line for initial and ongoing pharmacotherapy in the treatment of persistent pain due to its effectiveness and good safety profile. Acetaminophen is contraindicated in patients with liver failure and should be used with caution in patients with chronic alcohol abuse or dependence. 1 It is important to keep track of hidden sources of acetaminophen that patients may be taking in combination products. For mild to moderate pain that is uncontrolled with acetaminophen, the use of nonsteroidal antiinflammatory drugs (NSAIDs) is appropriate. 1 Gastroduodenal ulceration and bleeding are the major limitations to the use of non-steroidal anti-inflammatory drugs (NSAIDs). It is recommended that older patients taking NSAIDs use a proton pump inhibitor or misoprostol for gastrointestinal protection.1 Due to the increased risk of heart attacks and strokes with NSAIDs, they should be used more cautiously in patients with heart disease or risk factors for heart disease. For initial moderate to severe pain or pain uncontrolled by NSAIDs, weaker opioids such as tramadol can be used with or without acetaminophen.

For pain refractory to NSAIDs or pain rated as moderate initially, opioids are an appropriate choice in the relief of moderate to severe pain.1 Opioids exert their analgesic effects primarily on the U-opioid receptor which is responsible for the subsequent analgesic effects that are produced.² Common opioids include oxycodone, hydrocodone, morphine, and buprenorphine. Buprenorphine is a potent semi-synthetic opioid that is believed to be at least 75 times stronger than morphine.3 Overall, buprenorphine seems to have a better safety profile than other opioids due to less severe side effects as well as decreased tolerance to the drug making it a more suitable form of opioid treatment for chronic pain in the elderly. Transdermal buprenorphine patches have been shown to have a long duration of onset and action with no apparent respiratory depression at clinical doses, taking as long as 24 hours to act while lasting for up to 3 days.3 Its high affinity for the U-opioid receptor with no ceiling effect for analgesia allows concomitant use of other opioids for breakthrough pain.3 It has also been shown to be safely metabolized in the liver by people with mild to moderate hepatic impairment and does not induce down regulation of opioid receptors on the cell surface.³

Physical rehabilitation is another form of chronic pain treatment, although it is difficult to measure the exact benefit one may receive from it. Physical therapy varies with factors such as patient race, physician-patient communication, and results are often obtained based on patient opinion, all of which factor in a degree of bias. Many studies that examine the use of physical therapy for chronic pain treatment have inconsistent findings, making it difficult to reach a concrete conclusion. A recent study in the Journal of Neuroscience evaluated the use of mindfulness-based meditative practices as an alternative to pain medications. The researchers repeatedly exposed the subjects to a noxious heat at 49 degrees Celsius in two MRI sessions. Unlike the first session, in the second



session subjects were told to focus on the changing sensations of breath. ⁴ After four days of mindfulness meditation training, meditating in the presence of noxious stimuli significantly reduced pain unpleasantness by fifty seven percent and pain intensity ratings by forty percent when compared to rest. ⁴ Although the experiment reported the significant changes in average pain intensity felt from both conditions, the authors acknowledged external bias factors that may have influenced their results, such as unconscious bias toward self-reporting consistent with stated benefits as well as expectation bias.⁴

Although lacking in rigorous evidence-based studies to document their efficacy, several nonpharmacologic modalities have been implicated in the treatment of chronic pain in the elderly. These nonpharmacologic treatments are especially useful when used in combination with drug therapy. The movement towards implementing nonpharmacologic treatment is especially critical in the geriatric population due to the fact that these approaches have a lower frequency of adverse reactions compared to drug therapy.5 At any given time, an elderly patient takes four or five prescription drugs and two over-thecounter (OTC) medications, on average.⁶ Through the utilization of non-pharmacologic treatment, one can decrease the amount of potential drug-drug interactions and reduce polypharmacy. The main nonpharmacologic modalities to discuss include osteopathic manipulative medicine, physical activity, and psychological support. Osteopathic manipulative medicine (OMM) is an umbrella term that includes a wide array of hands-on, body manipulation therapies utilized in the treatment of chronic pain.⁷ Choices concerning OMM techniques and goals depend on each individual's unique pain presentation, the suspected pathways involved in that presentation, and the regions diagnosed as containing somatic dysfunction.⁷ Evidence supports that participation in regular physical activity can reduce pain and enhance the functional capacity of older adults with persistent pain.⁵ A physical exercise study that was published in the Journal of the American Osteopathic Association in 2011 which examined the effects of physical exercise on pain intensity and mobility found that those in the pain group that participated in an eight week physical exercise program exhibited significantly decreased pain intensity and increased mobility.7 Exercise also has added benefit for

elderly patients with comorbid hypertension and diabetes. Applying osteopathic principles as part of an effective treatment strategy for patients with chronic pain results in an individualized care plan combining nondrug treatment strategies with pharmacotherapy. Patient education included in the comprehensive plan helps improve quality of life and break the vicious cycle seen in the pathophysiology of persistent pain.

Chronic pain spans a multitude of conditions, presents in different ways, and requires an individualized, multifacted approach. Individualized chronic pain care is more appropriate than a "one-size-fits-all" approach, as patient development of tolerance to medication and risk of addiction varies. Therefore, the effectiveness of chronic pain management is multifactorial, and involves physician -patient perception, culture, and technology, along with other external factors.

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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 non-pharmacy 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

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.

Graduate Copy Editor [Content-Focused]



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.



@ 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.



@ Kathleen Horan 5th Year, STJ; Staff Editor

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.



@ 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.



Catharine Russo
 Ath 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.



@ Alex Chu
6th Year, STJ; Staff Writer

With a constantly evolving healthcare 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.



RHO CHI POST: TEAM MEMBERS



@ 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.



@ Joseph Eskandrous

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.



@ Shireen Farzadeh 6th Year, STJ; Staff Writer

I am excited to join the Rho Chi Post team 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!



@ 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!



@ 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.



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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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