



January/February 2021

# The Journal

of the Pharmacy Society of Wisconsin



***Issue Theme: Wellness and Nutrition***



# CONCORDIA SERVES

Concordia University Wisconsin is committed to serving the community in a variety of ways. The pandemic has asked pharmacists to serve in new, and sometimes unexpected ways, on the front lines across clinics, hospitals, pharmacies and throughout the community.

This past fall, Concordia professors and students stepped up to aid in the Wisconsin National Guard's and Washington Ozaukee Public Health Department's efforts to test for COVID-19. "At Concordia University Wisconsin, we feel compelled to serve our neighbors in this way because we have the knowledge and capacity to do it, and the university supports us in our desire to extend a helping hand to our communities," said Assistant Professor of Pharmaceutical and Administrative Sciences Uvidelio Castillo, PhD.

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PHARMACY

## Continuing Education

6

*CE for Pharmacists & Technicians: Tools for Managing Pharmacist and Technician Burnout During the COVID-19 Pandemic*

## Features

3

*UpFront: Working Together for a Better Tomorrow*

13

*WPQC Update: Wisconsin Community Pharmacy Enhancement Initiatives*

16

*Precepting Series: Suggestions for Preceptor Facilitation of Student Continuing Professional Development During Introductory Pharmacy Practice Experiences*

## Original Work

22

*Wisconsin Pharmacies' Response to the COVID-19 Pandemic: Barriers, Successes, and Looking Forward*

26

*Pharmacy Students and Over the Counter Cannabidiol: A Survey on Knowledge and Educational Needs*

34

*A Retrospective, Cohort Study Evaluating the Efficacy of an Elastomeric Ropivacaine Pain Pump Used Postoperatively in Shoulder Surgery*

## Review Articles

40

*The Consideration of At-Home Administration of Omalizumab*

## Writing Club

44

*Business Member Spotlight: Ascension Wisconsin Center for Pain Management - Jordan Wulz, PharmD, MPH, BC-ADM*

## PSW News

6

*I am a Pharmacy Professional and I... am Part of a Pharmacy Family*

## Spotlights

46

*Network Health Creates Innovative Services to Get Their Medicare Members Vaccinated During COVID-19 Pandemic*

## Meeting Recap

42

*2020 Technician Educational Forum Recap*

## Pharmacy Reflections

48

*Remote Learning: A Student's Perspective*

50

*Remote Teaching: A Preceptor's Perspective*



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of the Pharmacy Society of Wisconsin

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# Up Front: Working Together for a Better Tomorrow

by Melissa Theesfeld, PharmD

The calendar is turning to 2021, bringing a sense of excitement, hope, and a bit of uncertainty for what lies ahead. Like many of you, I feel some relief that 2020 has come to a close. The significant amount of change that we have navigated in our personal and professional lives has been positive and rewarding in many ways, but also mentally and physically exhausting. Yet I am optimistic for what we will accomplish in the year to come – both as health care providers and as an organization.

Pharmacists, technicians, and students have been vital in distributing and administering the COVID-19 vaccine in recent weeks. Our roles will become even more important in the coming months as the need for educating and vaccinating the broader population expands. Our accessibility in communities will be critical so that patients have access to all vaccines and corresponding facts to inform their decisions. We are always needed to help patients get the medications and care they need in a safe and effective manner. And we can continue in our role as public health advocates, modeling good practices for our patients, other health care professionals, and our communities.

As pharmacy professionals in Wisconsin, we also have exciting new work to look forward to. PSW staff and members have made a significant investment over the last 3 years to advance Wisconsin's pharmacist provider status initiative. In 2021, this work will come to fruition with the introduction of a formal bill to recognize pharmacists as providers and ensure that pharmacists are equitably paid for the services they provide. The partnerships that we have

developed within and outside pharmacy circles will be crucial in generating broad awareness and support for our work. We will need everyone in the profession in Wisconsin to live out our “one voice, one vision” mantra and be unified in the provider status messaging. Operationalizing pharmacist provider status may vary in practices across the state, but this important initiative benefits us all.

As we gear up for a new year, I want all PSW members to be excited for the future! PSW remains an incredibly strong organization. Our financial position is sound and will allow us to support events and initiatives that are important to Wisconsin pharmacy. We have a newly updated strategic plan that is forward-thinking and aims to advance the roles of pharmacists and technicians. We have energetic and engaged members who willingly volunteer their time and expertise. And we have a dedicated, talented team of staff at PSW who are ready to work collaboratively with members and advocate for the profession.

PSW's vision is more important than ever: together we can inspire each other to advance our profession to enhance the lives of our patients. Together we will provide needed education and services to many audiences. Together we will protect and care for our patients. Together we will transform the practice of pharmacy in Wisconsin. I am excited to work with all of you in the coming year and to keep our patients at the center of our work! And with any luck, we will be able to gather in person soon to celebrate our success!

- Melissa Theesfeld, PharmD  
PSW President

## I am a Pharmacy Professional and I... am Part of a Pharmacy Family

**March/April 2021**  
**Theme: I am a Pharmacy Professional and a... Vaccinator!**

Email your response to [mgrant@pswi.org](mailto:mgrant@pswi.org) by February 1.

Responses should be <100 words and include a photo.

**Cole Seckel, PharmD**  
*Pharmacy Supervisor*  
Chartwell Midwest Wisconsin, Madison

I was inspired to become a pharmacist by my grandfather, Bill Seckel. He graduated from St. Louis College of Pharmacy and practiced community pharmacy in the St. Louis area his entire career. I don't have many pharmacy specific memories of him, as he retired when I was very young; however, I do remember going to visit him down at the "drugstore" when I was a kid and he was still working. His compassion for others and his forever positive attitude made me strive to want to follow the same career path he did. To this day, I still wish I could pull off the pocket protector as well as he was able to. Although I have taken a different pharmacy path, I'm certain he'd be proud of what I've accomplished along the way.



**Marisa Goninen, PharmD, BCACP**  
*Pharmacy Coordinator, Population Health*  
Advocate Aurora Health, Milwaukee

When I started my pharmacy journey almost a decade ago, I couldn't have anticipated the joy of sharing it with my two younger siblings—Meredith Frey and Tanner Frey. They soon followed in my footsteps and we now have a pharmacy family! From being able to coat each of them at their White Coat Ceremonies, to giving advice and witnessing their accomplishments, I am not only extremely proud of them, but also deeply inspired and motivated by them. Here we are at Meredith's graduation from UW-Madison in 2019; you might spy that Tanner is a Hawkeye, he's in his second year at the University of Iowa College of Pharmacy. And if you're wondering—no, neither of our parents are pharmacists! A few words from my siblings:

"I've always looked up to Marisa and followed in her path, and learning about her experiences affirmed my interest and passion in the profession. Her advice

has helped me immensely in identifying my career interests and goals. I have had the joy of spending more time with Tanner as I complete my residency at the University of Iowa Hospitals and Clinics, and even had the opportunity to teach during some of his courses." – Meredith Frey

"I am thankful to be able to refer to both of my sisters as remarkable role models and mentors for my progression thus far into pharmacy. They both display hard work and passion for the profession, and this is something that I hope to emulate." – Tanner Frey

**Janet Fritsch, RPh**

*Owner*

Baraboo Corner Drug Hometown Pharmacy, Baraboo

My daughter, Karissa Fritsch, and my nephew, Nate Menninga, have brought something new to my pharmacy experience. While they were in pharmacy school, I enjoyed meeting their friends and precepting their fellow classmates. It has been a pleasure to introduce them to pharmacy colleagues at PSW events and to watch them interact with other pharmacists and grow in those relationships. We have spent many hours in conversations about professors, classes, exams, and jobs. The shared experiences of pharmacy school and now our careers have developed a special bond. Pharmacy is another connection I have with them now. I love my profession in pharmacy, and it has been an unexpected joy to share that with Karissa and Nate.



**Becky Klipstine, RPh**

*Clinical Pharmacist*

GHC Pharmacy-Capitol Clinic, Madison

The Moioffer Pharmacy Family dynasty started with Mike Moioffer, the first Moioffer Pharmacist. Mike purchased the Augustine drug in Crandon WI in 1972. He spent the next 30 years opening community pharmacies in Rhinelander, Merrill, Antigo, Amery and Crandon. He was a wonderful pharmacist, boss and volunteered many hours to the communities. Mike was PSW president in 1989 and his claim to PSW fame is that he was on the committee that hired the late Chris Decker.

Michelle Moioffer Muga, Mike's Niece, is the second Moioffer pharmacist. Michelle started her college career at UW Milwaukee as premed. But after talking with Uncle Mike at a family picnic, she realized that pharmacy was a better fit and transferred to Madison to start Pharmacy School. Pharmacy offered flexibility and allowed her to be a professional and a mom simultaneously. So, she followed in her uncle's footsteps. Michelle currently works part time for Walgreens in the Sheboygan area.

Next came Mark Moioffer, Mike's son. He is the third Moioffer pharmacist. Mark went into pharmacy ready to take over the family business. He worked in Des Moines IA for a few years. But he loved the idea of owning land and living in the country, so Mark moved to Balsam Lake and worked for his dad at Snyder Drug of Amery WI. He eventually transitioned over to hospital pharmacy and currently works at Amery Regional Medical Center in Amery, WI.

Becky Moioffer Klipstine, Mike's eldest daughter, is the fourth Moioffer pharmacist. She too wanted to go into the health field but could not tolerate the sight of blood so medical school was out and pharmacy school was in! Becky worked for her dad at the Snyder Drug in Amery from 1994 to 2000. She and her brother even worked together for some of those years! She is currently working as the Pharmacy Operations Manager for GHC SCW in Madison.

Molly Moioffer Mieska, Mike's youngest daughter, is the fifth Moioffer pharmacist. Molly started college in the engineering track. She quickly decided this was not for her. Again, the flexibility that pharmacy offered as a career to provide a good work/life balance was integral in her decision. Molly currently works at Froedtert Hospital Specialty Pharmacy in Milwaukee WI.

If Mike is the patriarch of the Moioffer Pharmacy family, I would be remiss if I didn't mention the matriarch of the Moioffer Pharmacy family. Karen Moioffer, is not a pharmacist but she is a nurse and she has been the driving force behind the success of the pharmacies and our pharmacy careers. Her endless energy, support, and encouragement of "when the going gets tough, the tough get going!" were keys to the success of each of us.

Pharmacy has been good to the Moioffer family! There is no doubt about it. It has been a wonderful career which has enriched our lives both professionally and personally. Our family members would agree....for the most part. If you ask any of them, they will tell you that "Pharmacy Talk" is forbidden at family get togethers.



PHARMACIST & TECHNICIAN CE:

## Tools for Managing Pharmacist and Technician Burnout During the COVID-19 Pandemic

by Sara Reeb, PharmD, MBA, BCPS

**H**ealth care professionals have recognized burnout as a significant issue for years.<sup>1-3</sup> In 2017, the National Academy of Medicine (NAM) created the Action Collaborative on Clinician Well-Being and Resilience.<sup>4</sup> This collaborative works to increase awareness of clinician mental health issues, recognize barriers to well-being for clinicians, and find solutions to clinician burnout.<sup>4</sup> The creation of the collaborative provides a strong resource for clinicians, but also reveals the need for additional tools to prevent burnout.

Definitions of burnout include things like exhaustion, cynicism, and inefficacy.<sup>5</sup> Prolonged workplace stress might cause burnout.<sup>5</sup> The majority of studies looking at clinician burnout have focused on doctors and nurses. In these studies, burnout was associated with an increase in medical errors, loss in productivity, alcohol abuse/dependence, and suicidal ideation.<sup>6-9</sup> These factors can have a large impact on patient safety and satisfaction.<sup>10</sup> Pharmacy staff are also at a high risk of burnout. In a study looking at burnout among health-system pharmacists, 53.2% of respondents



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#### Learning Objectives

- Recognize the impact of the COVID-19 pandemic on health care worker burnout.
- Choose appropriate tools for leaders to prevent burnout within your organization.
- Apply individual strategies to improve mental health and prevent burnout.
- Identify new challenges for pharmacies during the COVID-19 pandemic.

showed at least one area of burnout.<sup>2</sup> Areas of burnout were based on a burnout scale, including emotional exhaustion, reduced personal accomplishment, and depersonalization.<sup>2</sup>

The coronavirus (COVID-19) pandemic has created new types of stress for health care professionals to manage. Health care workers face daily uncertainty about the effects of COVID-19, shortages of personal protective equipment (PPE), rapidly changing protocols, and concern about spreading the disease to patients and family members.<sup>11</sup>

Keeping health care workers mentally prepared during the pandemic is important for our health care system.<sup>12</sup> As stated in a

World Health Organization publication, “This is not a sprint; it’s a marathon.”<sup>13</sup> We must consider the long-term effects of the pandemic on our health care system.<sup>14</sup> Many health care workers feel a loss of control due to new protocols, staffing changes, and risk of disease spread. This loss of control, along with various uncertainties and anxiety, can take a toll on mental health over time, contributing to burnout.<sup>11</sup>

One suggested method for addressing health care workers’ needs is to understand the sources of their anxiety.<sup>12</sup> Stanford University School of Medicine conducted listening sessions to understand staff members’ specific fears and anxieties during

COVID-19.<sup>12</sup> The authors summarized the needs of staff members into five key areas: hear me, protect me, prepare me, support me, and care for me. These highlighted that health care workers require support from their organization. For example, the request “hear me” indicates health care workers’ concerns that their organization might not have a thorough understanding of the obstacles for frontline staff during COVID-19. “Protect me” is health care workers’ request for a stable source of PPE and testing supplies. Leaders should understand these concerns and direct their efforts towards these requests from their staff.<sup>12</sup>

While many articles focus on anxieties for health care workers in general, pharmacy staff also face unique challenges during COVID-19. These challenges differ based on type of pharmacy practice and among pharmacists, technicians, residents, and students.

Some challenges stem from the financial stress of the pharmacist’s health care organization. The decrease in elective surgeries and routine outpatient visits caused many organizations to feel a financial burden, leading to employee furlough, hiring freezes, and layoffs. Subsequently, many pharmacy staff experienced a heavier workload due to patient care services returning to normal or higher than normal levels.

COVID-19 has caused changes to the ways pharmacy staff and patients communicate. Community pharmacies are encouraging mail-order services or delivery of medications to patients’ vehicles. Inpatient pharmacies are limiting pharmacy staff in the rooms of COVID-19 patients. Both of these scenarios have led to increased communication via phone or with a mask (when in person); both scenarios have limitations compared to traditional in-person communication.

Many organizations are having staff work from home. This has led pharmacies to either cancel pharmacy student rotations or have students work remotely. Pharmacy staff might also be trying to train new staff or precept students and residents while staying physically distanced.

New treatment protocols, and organization policies and procedures, are constantly changing during the pandemic.

Pharmacy staff are in a critical area of keeping up with new treatment options for COVID-19 and keeping up appropriate drug supplies during times of shortage.

It is vital to focus on the well-being of pharmacy staff throughout the pandemic. While studies have not looked specifically at pharmacist and technician burnout during COVID-19, there are numerous resources available to improve general well-being. The remainder of this article will focus on tools to prevent burnout among pharmacy staff in the face of the COVID-19 pandemic.

## Managing Burnout

Many strategies exist to assist with improving mental health for clinicians and preventing burnout. The Action Collaborative on Clinician Well-Being and Resilience discusses the various factors that affect clinician well-being, and organizes them into two main categories: external factors and individual factors.<sup>15</sup> Organizations and their leadership (external factors) play a large role in clinician well-being.<sup>16</sup> Some individual factors include mental well-being, resilience, and relationships.<sup>15</sup> Strategies focusing on both external and individual factors can play the greatest role in preventing burnout.<sup>5</sup>

## Leadership Strategies

### Communication

One of the important strategies for improving staff’s mental health during COVID-19 is high-quality communication.<sup>13</sup> In times of extreme stress, it is easy for staff members to replace unknown information with worries and worst-case scenarios.<sup>17-19</sup> It is the responsibility of leaders to address these unknown areas. While leaders might not know all the answers, they should address issues with transparency and provide as much information as possible.<sup>17,18</sup> Leaders can also note a timeframe for when they might be able to provide more specific answers.<sup>19</sup>

Leaders should create an environment of trust by being open and honest.<sup>17,18,20</sup> It is important to explain the reasons behind decisions as leaders introduce new policies and procedures.<sup>17,18</sup> This can help staff accept changes and build trust.<sup>17,18</sup>

## Listening

Listening to their staff’s needs is crucial for leaders.<sup>12</sup> Staff want their leaders to be available and present.<sup>12</sup> Many leaders have started scheduling time at the end of meetings or during the day to ask staff about their needs.<sup>19,21</sup> These short sessions can help staff to feel empowered during times where they feel they have no control.<sup>21</sup> Leaders should ask staff about recent concerns.<sup>12,17,18,21</sup> Leaders should also make a point to emphasize that feelings of stress, uncertainty, anger, or sadness are completely normal feelings to have during these times.<sup>21</sup>

After staff have shared their concerns or recent experiences, leaders can shift the conversation to asking about suggestions for improving those areas.<sup>12,17,18,21</sup> Many times, there might not be a simple solution, and leaders should not feel obligated to solve every problem.<sup>21</sup> Instead, leaders should let staff know their concerns have been heard.<sup>21</sup> The sense of feeling heard can give staff a sense of empowerment and voice during the crisis.<sup>12,17,18</sup>

Leaders should make sure to share staff concerns with upper management within the organization. Without frontline staff’s day-to-day feedback, it is hard for leadership to understand what their organization needs to address. Frontline staff might feel an improved sense of control knowing leaders are discussing their concerns, and that solutions might result.

As a closure to these staff meetings, leaders should emphasize their appreciation for staff and all they do.<sup>12,21</sup> These small words of encouragement can help staff to feel supported and recognized by their organization.

## Self-Care

Leaders should focus on self-care tactics for themselves and their staff.<sup>21</sup> Leaders are under an enormous amount of pressure and should make a point to care for themselves. A stressed leader will be unable to provide a confident and calm perspective, and therefore, will be less able to take care of their staff.

Many institutions are providing resources, such as employee assistance programs and other benefits, during COVID-19. Leaders should be role models to their staff by using resources and

explaining to staff how they work.<sup>13</sup> This helps to mitigate the stigma surrounding mental health and asking for help, which is often difficult for health care workers.<sup>13</sup> Leaders should also set an example and expectation for staff members to stay home if they are sick, and reverse the culture of trying to tough it out during illness.<sup>19</sup>

### **Diversity**

Leaders should recognize the diversity of their staff. People's backgrounds (including age, gender, race, and career phase, among other factors) can color their responses to COVID-19.<sup>17,18,21</sup> Discrimination can come up in large and small ways during the pandemic; for example, requiring staff to use PPE that interferes with religious requirements.<sup>19</sup> In one case, a hospital required a medical student to shave their beard to comply with N-95 mask fit testing.<sup>22</sup> The student was unable to shave their beard due to religious requirements, and the hospital instead provided the student with a powered air purifying respirator (PAPR).<sup>22</sup> Other staff might have heightened concerns about contracting COVID-19, including those who are older, pregnant, or have underlying health conditions. By recognizing these differences, leaders can adjust how they respond to each staff member's needs.<sup>21</sup> These small adjustments to how leaders respond can make a meaningful impact on staff.

### **Safety**

It is important for staff to feel protected by their organization and leaders.<sup>17,18</sup> Examples of physical safety during COVID-19 include PPE training and availability. Leaders should ensure their staff feel comfortable with using all PPE and are familiar with policies and procedures regarding PPE.<sup>19</sup> Leaders should also frequently communicate with staff regarding the availability of PPE for their organization and measures taken to obtain adequate supplies.<sup>19</sup>

Another practical tactic includes rotating staff from higher-stress to lower-stress tasks or work areas.<sup>13</sup> This should include conversations with staff to understand which tasks and areas are the most demanding. Leaders should allow staff frequent breaks throughout the day,

especially if they are working in a high-stress area.<sup>21</sup> Although not always possible, allowing staff to have a more flexible schedule can reduce their stress.<sup>13</sup> These strategies allow staff to feel more in control of their situation and allow them to take care of themselves in addition to better taking care of their patients.

### **Relationships**

COVID-19 can cause health care workers to feel isolated. They might be experiencing the figurative "loss" of family and friends who are trying to avoid contact with them due to the possible spread of the disease.<sup>19</sup> This can lead to feelings of depression and a higher risk of burnout.<sup>11</sup> Leaders should try to encourage socialization among employees to prevent these feelings.<sup>11,17-19</sup>

Some institutions have incorporated a tactic used in the military, called Battle Buddies, to help colleagues relate to one another.<sup>11</sup> This system pairs two to three colleagues together during the time of crisis (COVID-19) to check in with one another and be each other's support system. Buddies can meet or talk approximately once a week to share challenges and successes from the week. They can also share coping methods, brainstorm solutions, and provide additional perspective.

Battle Buddies is not intended to replace therapy or other mental health care, but is another way for employees to feel heard and connected. Buddies should be trained on how to look for larger mental health concerns such as drug use, alcohol abuse, or suicidal ideation. If larger problems arise, buddies can help each other with finding professional resources.

Leaders should also consider blocking off time or encouraging appropriate socialization at work to allow employees to connect with one another.<sup>19</sup> This feeling of connection can be invaluable during a time of crisis and stress.<sup>19</sup> Some departments are encouraging virtual hangouts outside of work or other creative methods of getting people together while maintaining physical distance.<sup>19</sup>

### **Formal Organizational Support**

Several organizations have created more formal methods of providing support for their employees. The Columbia University

Department of Psychiatry created one of these services, which is useful if an organization already has available psychiatric resources.<sup>14</sup> Psychiatrists and psychologists lead virtual, 30-minute meetings with staff members. The session allows them to discuss their feelings surrounding COVID-19, acknowledge the difficult circumstances, and consider coping strategies. During the session, staff learn about the importance of acknowledging the situation and their feelings; they also focus on resilience strategies. A key component of resilience is that people affected by crises are often changed by the situation and grow as a person. Often, people do not realize this change until after the change has taken place.

Often, health care workers try to hide or suppress their feelings at work, because their peers do not express their feelings. By coming together to discuss feelings like frustration, anger, sadness, and fear regarding COVID-19, staff might be able to better understand their peers and feel less alone with their feelings.

## **Individual Strategies**

### **Burnout Testing**

Awareness about whether you are experiencing burnout can be important to improving well-being. The primary test available is the Maslach Burnout Inventory (MBI).<sup>5</sup> This test was first created in 1981 and has three measures of burnout: emotional exhaustion, depersonalization, and a low sense of personal accomplishment. Individuals or organizations can purchase this test. The Clinician Well-Being Knowledge Hub also has links to various burnout tests available with a fee or free of charge.<sup>23</sup>

Individuals who are unsure about their levels of stress or burnout should try taking a test. Becoming aware of your level of burnout is one of the first steps to improving your well-being. If you find you are already experiencing burnout symptoms or if you are a health care worker at risk of burnout, several coping strategies may be helpful.

### **Coping Skills**

While organizations and leaders can make a significant impact on burnout rates and help improve the mental health

of their employees, staff should also know how to take an individual approach to cope with stress. Anxiety is a normal and often helpful response to stressful situations.<sup>24</sup> During COVID-19, anxiety is helping us to decrease the spread of the disease by encouraging people to stay home and practice physical distancing. However, if we let anxiety control our lives, it can be unhealthy.

Instead, we should focus on what we can and cannot control during the COVID-19 pandemic. Author Russ Harris created an electronic book and short video that lists practical steps for coping with COVID-19.<sup>25</sup> The key concepts of this model include focusing on what you can control and taking action in those areas.

There are many obstacles we face during the COVID-19 pandemic, including workplace policies and procedures, availability of PPE, the spread of the disease, and others' reactions to the disease. It can be difficult as a health care provider to witness the various responses to COVID-19. At times it can feel like our lives are out of control. We might experience feelings of frustration, anger, and fear—these feelings are completely normal.<sup>25</sup> It is important to concentrate on allowing yourself to feel these emotions and not try to control or suppress your feelings.<sup>25</sup> Instead, it can be beneficial to focus on controlling your behaviors, which can be easier than controlling your feelings.<sup>25</sup>

When experiencing strong feelings, it is important to take some time to yourself.<sup>25</sup> Practicing mindfulness through an app or other resource can be helpful. One mindfulness practice is to sit quietly and notice your feelings, verbalize how you are feeling, and try to ground your body.<sup>25</sup> Grounding your body includes purposeful actions such as pressing your feet into the floor or breathing slowly.<sup>25</sup> You can also bring awareness to your five senses—notice objects you see around you, or close your eyes and observe what you can smell.<sup>25</sup> These small practices of mindfulness can give your body a feeling of control during times when your feelings seem out of control.<sup>25</sup>

Another way to feel in control is to find ways of expressing your values.<sup>24,25</sup> How do you want others to remember you during

the COVID-19 pandemic?<sup>25</sup> Do you value kindness, generosity, or compassion? Consider taking action on these values by calling a friend you have not spoken to in a while, offer to grocery shop for an elderly neighbor, or ask someone at work how their day is going. Although you are helping others, acting on your values can help you gain back some control.<sup>25</sup>

It is also important to focus on the control you have over your body and health.<sup>24</sup> During times of stress, it is easy to reach for unhealthy foods or turn to alcohol or other harmful activities to help distract you.<sup>24</sup> These behaviors can harm your mood and your health.<sup>24</sup> Instead, try focusing on healthy activities you can control—take a walk outside during your lunch break, pack a healthy and satisfying lunch from home, or chat with a friend from work instead of scrolling through the news or social media.<sup>24</sup> These simple tasks can improve your mood as well as give you a sense of control.<sup>25</sup>

### ***Pharmacy-Specific Challenges***

Within the pharmacy itself, pharmacists and technicians face new challenges in providing patient care and completing day-to-day tasks. These challenges vary among pharmacy practice settings as well as institutional practices. Two significant areas that incorporate both community and hospital practice are changes to patient education, and training new employees or precepting learners.

Mask-wearing, curbside delivery, and mail delivery services have emphasized new techniques for patient education. Almost all pharmacists, technicians, and patients are now wearing masks in the pharmacy. Mask-wearing can cause difficulties in verbal and nonverbal communication for both the pharmacy staff and patients.

Studies on mask use in health care found that masks can impair the ability to read emotions, which can cause barriers to communication.<sup>26</sup> Mask-wearing can lead to issues for those who are hard of hearing by muffling the sound and clarity of speech.<sup>27</sup> Some patients who are hard of hearing might also rely on reading lips, which they can no longer do.<sup>28</sup> These barriers can play a significant role in how well a patient understands education. Pharmacy staff should focus on what they

can do to improve communication while wearing a mask. Staff wearing a mask should continue to show facial expressions such as smiling.<sup>27,29</sup> Patients are still able to see your smile around your eyes and will likely notice a change in the tone of your voice.<sup>27</sup> Use the areas of your face that are still exposed, including your eyebrows and forehead, to show more expressions to patients.<sup>27</sup> Patients also appreciate eye contact—especially when patients are only able to see your eyes.<sup>27,29</sup> Eye contact is evidence you are listening to your patient and understand what they are saying.<sup>27,29</sup>

You can also vary the tone and rate of your voice to show additional expression. Consider projecting your voice and enunciating your words. Make sure to talk in an upbeat tone, if appropriate, and slow your rate more than you normally would.<sup>27,29</sup> This can help patients better understand you and give them time to think about what you are saying.<sup>27</sup> By pausing after you speak, you can also better assess patient understanding.<sup>27</sup>

Use body language to show engagement in the conversation. Relax your shoulders and create open body language—do not cross your arms.<sup>29</sup> You can also consider increasing your use of hand gestures to assist in patient understanding or nod your head to indicate understanding.<sup>27</sup>

Especially in the hospital setting, patients likely see numerous health care professionals throughout the day. It is hard for patients to identify staff with PPE covering most of their face. Make sure to introduce yourself slowly each time you enter a patient's room by indicating both your name and your title.<sup>27</sup> Patients will feel more trusting by knowing who they are talking to.

Another area of pharmacy that comes with new challenges during COVID-19 is training new employees or precepting residents and students. Physical distancing can be difficult within the pharmacy setting due to space. While training new staff within the pharmacy, always wear a mask and try to maintain as much distance as possible. Consider explaining to the new staff member your expectations, including limiting contact and increasing physical distance. Trainers can also consider discussing alternatives during the training process such as completing online learning

from a remote location.

Residents, students, and preceptors are all faced with new challenges during COVID-19. Learners might feel as though they are missing out on opportunities such as rounding on patients or presenting in front of an audience.<sup>30</sup> They might also feel disconnected from the site if they are working from home or sitting in a different area from their preceptor.<sup>30</sup>

Preceptors should focus on both the safety of patients and learners throughout the learning experience. Communication of expectations and policies at the site is important during orientation. Preceptors should frequently discuss the learning experience with the learner to continue to make improvements. Preceptors will need to adjust the experience based on new policies and procedures.

Preceptors might have to find alternate locations for learners to work if common work areas get too crowded. While discussing patients or topics, preceptors should move discussions to areas where physical distancing standards can be met. Presentations will also likely need to be adjusted. Some organizations have larger conference rooms where in-person presentations can be moved, while others might require virtual attendance to either live or recorded presentations.

As a preceptor or trainer, it is important to be a leader within the pharmacy. Ensure your learner feels comfortable in their new environment and enforce mask-wearing and physical distancing. There are many opportunities to learn and grow in this new environment, so communication with each other is necessary.

### Growth from Adversity

The American Psychological Association discusses how the adversity we are facing in health care today, during the COVID-19 pandemic, will likely change us.<sup>31</sup> While the crisis is certainly leading to mental health concerns and burnout, there is still an opportunity for growth and change during the pandemic. When faced with trauma, we might also experience positive change, even though this growth doesn't happen overnight.

It is important to reflect often and recognize our feelings during the pandemic.

But we should also be focusing on the positives during the pandemic—increased time with family, improved teamwork at work, and slowing the pace of our busy lives. These small moments of appreciation can spur our growth and encourage us to keep evolving as a pharmacy community.

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PR

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### References

1. Bridgeman PJ, Bridgeman MB, Barone J. Burnout syndrome among healthcare professionals. *Am J Heal Pharm.* 2018;75(3):147-152. doi:10.2146/ajhp170460
2. Durham ME, Bush PW, Ball AM. Evidence of burnout in health-system pharmacists. *Am J Heal Pharm.* 2018;75(23 Supplement 4):S93-S100. doi:10.2146/ajhp170818
3. Dzau VJ, Kirch DG, Nasca TJ. To care is human - collectively confronting the clinician-burnout crisis. *N Engl J Med.* 2018;378(4):312-314. doi:10.1056/NEJMp1715127
4. Action collaborative on clinician well-being and resilience. National Academy of Medicine. Accessed August 5, 2020. <https://nam.edu/initiatives/clinician-resilience-and-well-being/>
5. Maslach C, Schaufeli WB, Leiter MP. Job burnout. *Annu Rev Psychol.* 2001;52:397-422. doi:10.1146/annurev.psych.52.1.397
6. Shanafelt TD, Balch CM, Beachamps G, et al. Burnout and medical errors among American surgeons. *Ann Surg.* 2010;251(6):995-1000. doi:10.1097/SLA.0b013e3181bfdab3
7. Shanafelt TD, Mungo M, Schmitgen J, et al. Longitudinal study evaluating the association between physician burnout and changes in professional work effort. *Mayo Clin Proc.* 2016;91(4):422-431. doi:10.1016/j.mayocp.2016.02.001
8. Oreskovich MR, Shanafelt T, Dyrbye LN, et al. The prevalence of substance use disorders in American physicians. *Am J Addict.* 2015;24(1):30-38. doi:10.1111/ajad.12173
9. Shanafelt TD, Balch CM, Dyrbye L, et al. Special report: suicidal ideation among American surgeons. *Arch Surg.* 2011;146(1):54-62. doi:10.1001/archsurg.2010.292
10. Shanafelt TD, Noseworthy JH. Executive leadership and physician well-being: nine organizational strategies to promote engagement and reduce burnout. *Mayo Clin Proc.* 2017;92(1):129-146. doi:10.1016/j.mayocp.2016.10.004
11. Albott CS, Wozniak JR, McGlinch BP, Wall MH, Gold BS, Vinogradov S. Battle buddies: rapid deployment of a psychological resilience intervention for healthcare workers during the COVID-19 pandemic. *Anesth Analg.* 2020;131(1):43-54. doi:10.1213/ANE.0000000000004912
12. Shanafelt T, Ripp J, Trockel M. Understanding and addressing sources of anxiety among health care professionals during the COVID-19 pandemic. *JAMA.* 2020;323(21):2133-2134. doi:10.1001/jama.2020.5893
13. Mental health and psychosocial considerations during the COVID-19 outbreak. World Health Organization. March 18, 2020. Accessed August 21, 2020. <https://www.who.int/publications/item/WHO-2019-nCoV-MentalHealth-2020.1>
14. Baptista L, Mellins C, Mayer L, Albano AM, Glasofer DR. CopeColumbia A guide for virtual peer support groups to address stress and emotional consequences of COVID-19. Learn at ACGME. April 27, 2020. Accessed August 21, 2020. <https://dl.acgme.org/learn/course/covid-19-well-being-resource-library/peer-support/a-guide-for-virtual-peer-support-groups-to-address-stress-and-emotional-consequences-of-covid-19-developed-for-faculty-residents-and-staff-at-columbia-university-irving-me>
15. Factors affecting clinician well-being and resilience – conceptual model. Clinician Well-Being Knowledge Hub. 2018. Accessed August 15, 2020. <https://nam.edu/clinicianwellbeing/resources/factors-affecting-clinician-well-being-and-resilience-conceptual-model/>
16. West CP, Dyrbye LN, Erwin PJ, Shanafelt TD. Interventions to prevent and reduce physician burnout: a systematic review and meta-analysis. *Lancet.* 2016;388(10057):2272-2281. doi:10.1016/S0140-6736(16)31279-X
17. Substance abuse and mental health services administration trauma and justice strategic initiative. SAMHSA's Concept of Trauma and Guidance for a Trauma-Informed Approach. July 2014. Accessed August 21, 2020. <https://s3.amazonaws.com/static.nicic.gov/Library/028436.pdf>
18. COVID-19 considerations for a trauma informed response for work settings (organizations/schools/clinics). Trauma Informed Oregon. 2020. Accessed August 21, 2020. <https://traumainformedoregon.org/wp-content/uploads/2020/03/Considerations-for-COVID-19-Trauma-Informed-Response.pdf>
19. Brigham T. ACGME Resources for promoting well-being during the COVID-19 pandemic. Learn at ACGME. 2020. Accessed July 13, 2020. <https://dl.acgme.org/learn/course/covid-19-well-being-resource-library/organizational-well-being/guidebook-for-promoting-well-being-during-the-covid-19-pandemic>
20. Rangachari P L, Woods J. Preserving organizational resilience, patient safety, and staff retention during COVID-19 requires a holistic consideration of the psychological safety of healthcare workers. *Int J Environ Res Public Health.* 2020;17(12):4267. doi:10.3390/ijerph17124267
21. Mangurian C. UCSF Cope: manager tips during COVID-19. UCSF Department of Psychiatry and Behavioral Sciences. 2020. Accessed August 18, 2020. [https://psychiatry.ucsf.edu/sites/psych.ucsf.edu/files/UCSF\\_Cope\\_Manager\\_Tips\\_during\\_COVID-19.pdf](https://psychiatry.ucsf.edu/sites/psych.ucsf.edu/files/UCSF_Cope_Manager_Tips_during_COVID-19.pdf)

22. OCR resolves complaint after hospital accommodates medical student's religious needs during COVID-19. HHS.gov. July 21, 2020. Accessed September 6, 2020. <https://www.hhs.gov/about/news/2020/07/21/ocr-resolves-complaint-after-hospital-accommodates-medical-students-religious-needs-during-covid-19.html>
23. Valid and reliable survey instruments to measure burnout, well-being, and other work-related dimensions. National Academy of Medicine. Accessed August 8, 2020. <https://nam.edu/valid-reliable-survey-instruments-measure-burnout-well-work-related-dimensions/>
24. Emotional well-being and coping during COVID-19. UCSF Department of Psychiatry and Behavioral Sciences. Accessed July 16, 2020. <https://psychiatry.ucsf.edu/coronavirus/coping>
25. Harris R. FACE COVID: how to respond effectively to the Corona crisis. ACT Mindfully. 2020. Accessed August 21, 2020. <https://www.actmindfully.com.au/wp-content/uploads/2020/03/FACE-COVID-eBook-by-Russ-Harris-March-2020.pdf>
26. Hung Y-W. A study of barriers to the wearing of face masks by adults in the US to prevent the spread of influenza. Master's thesis. Arizona State University; 2018. Accessed August 19, 2020. [https://repository.asu.edu/attachments/211332/content/Hung\\_asu\\_0010N\\_18395.pdf](https://repository.asu.edu/attachments/211332/content/Hung_asu_0010N_18395.pdf)
27. Choudhury SR. Providing compassionate care while wearing a face mask. 2020. Accessed August 19, 2020. <https://www.seleemchoudhury.com/blog/providing-compassionate-care-while-wearing-a-face-mask>
28. Jezzoni LI, O'Day BL, Killeen M, Harker H. Communicating about health care: observations from persons who are deaf or hard of hearing. *Ann Intern Med.* 2004;140(5):356-362. doi:10.7326/0003-4819-140-5-200403020-00011
29. Christine Lodl, RPh, email communication, July 2, 2020.
30. From the frontline of COVID-19: managing remote rotations. ASHP. Accessed August 8, 2020. <https://www.ashp.org/Professional-Development/ASHP-Podcasts/COVID-19-Updates/COVID-19-Managing-Remote-Rotations?loginreturnUrl=SSOCheckOnly>
31. Weir K. Life after COVID-19: making space for growth. American Psychological Association. June 1, 2020. Accessed July 11, 2020. <https://www.apa.org/monitor/2020/06/covid-life-after>
- protocols and policies
- d. Working in a fast-paced environment
3. **True or False:** Strategies focusing on both external and individual factors for managing mental health can play the greatest role in improving and preventing burnout.
- a. True
- b. False
4. A pharmacy manager notices her staff seem to be having symptoms of burnout within the first few weeks of the COVID-19 pandemic. Their hospital has been short on PPE and has enacted many new policies and procedures during this time. What would be the best strategy for the manager to use to help staff?
- a. Start daily team meetings to openly discuss the PPE shortages, plans for obtaining additional PPE, and the why behind new policies and procedures.
- b. Pull one of the pharmacy staff aside and ask them why everyone seems stressed.
- c. Avoid addressing PPE shortages, because the manager doesn't know all the answers yet.
- d. Try to lighten the mood by emailing out a daily joke.
5. A pharmacy manager notices staff at his pharmacy have been complaining about workload now that elective surgeries and other routine care have increased at their hospital. Due to hiring freezes within the organization, there have been open shifts in the schedule for both pharmacists and technicians. The manager decides to initiate weekly listening sessions to understand the areas that staff members are feeling overwhelmed. What are the possible benefits of these listening sessions?
- a. Staff members feel like their manager is present and trying to understand their concerns.
- b. The manager can use these sessions to brainstorm ideas to assist staff with the increased workload.
- c. Staff members gain a sense of control over their current situation.
- d. All of the above.
6. **True or False:** The Maslach Burnout Inventory test has three measures of burnout: emotional exhaustion, depersonalization, and a low sense of personal accomplishment.
- a. True
- b. False
7. You are staffing at the pharmacy and hear about a patient losing a loved one due to COVID-19. The patient was unable to visit their family member due to hospital policy at the time. You experience feelings of sadness and frustration after hearing this story. All of the following are appropriate coping strategies except:
- a. Mindfulness techniques: closing your eyes and noticing your five senses.
- b. Stepping away for a minute to a place of quiet and noticing your emotions.
- c. Ignoring the sadness and frustration and criticizing yourself for having those feelings.
- d. Grounding yourself by taking deep breaths and pressing your feet into the floor.
8. Your organization has just implemented new PPE procedures, visitor guidelines, and pay policies. You are feeling a loss of control. All of the following are appropriate strategies to gain a sense of control except:
- a. Create a new exercise routine.
- b. Pack a satisfying and healthy lunch for work each day.
- c. Call a friend out of the blue and ask them how they are doing.
- d. Tune in for news broadcasts whenever you can.
9. New challenges faced by pharmacy staff during COVID-19 include all of the following except:
- a. Educating patients on their medications while wearing a mask.
- b. Precepting learners and training new employees while maintaining physical distancing protocols.
- c. Experiencing drug shortages.
- d. Keeping up to date on COVID-19 treatment recommendations.
10. Mask-wearing can cause barriers to communication. Pharmacists and technicians should incorporate the following techniques into their conversations with patients.
- a. Smiling, eye contact, pauses in conversation, introductions.
- b. Raised eyebrows, eye contact, touching patients, introductions.
- c. Hand gestures, increased rate of speaking, smiling, pauses in conversation.
- d. Introductions, eye contact, fewer facial expressions, hand gestures.
11. Did the activity meet the stated learning

## Assessment Questions

1. Burnout can be defined using all of the following words except:
- a. Cynicism
- b. Laziness
- c. Inefficacy
- d. Exhaustion
2. New stressors faced by health care workers during COVID-19 include all of the following except:
- a. Feelings of uncertainty due to the effects and spread of COVID-19
- b. PPE shortages
- c. Rapidly changing workplace
6. **True or False:** The Maslach Burnout Inventory test has three measures of burnout: emotional exhaustion, depersonalization, and a low sense of personal accomplishment.
- a. True

- objectives? (if you answer no, please email sarahs@pswi.org to explain)
- a. Yes
  - b. No
12. On a scale of 1 – 10 (1-no impact; 10-strong impact), please rate how this program will impact the medication therapy management outcomes or safety of your patients.
  13. On a scale of 1 – 10 (1-did not enhance; 10-greatly enhanced), please rate how this program enhanced your competence in the clinical areas covered.
  14. On a scale of 1 – 10 (1-did not help; 10-great help), please rate how this program helped to build your management and leadership skills.
  15. How useful was the educational material?
    - a. Very useful
    - b. Somewhat useful
    - c. Not useful
  16. How effective were the learning methods used for this activity?
    - a. Very effective
    - b. Somewhat effective
    - c. Not effective
  17. Learning assessment questions were appropriate.
    - a. Yes
    - b. No
  18. Were the authors free from bias?
    - a. Yes
    - b. No
  19. If you answered “no” to question 18, please comment (email info@pswi.org).
  20. Please indicate the amount of time it took you to read the article and complete the assessment questions.

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### Quiz Answer Form

circle one answer per question

- |                   |               |
|-------------------|---------------|
| 1) a   b   c   d  | 11) a   b     |
| 2) a   b   c   d  | 12) _____     |
| 3) a   b          | 13) _____     |
| 4) a   b   c   d  | 14) _____     |
| 5) a   b   c   d  | 15) a   b   c |
| 6) a   b          | 16) a   b   c |
| 7) a   b   c   d  | 17) a   b     |
| 8) a   b   c   d  | 18) a   b     |
| 9) a   b   c   d  | 19) _____     |
| 10) a   b   c   d | 20) _____     |

January/February 2021

Tools for Managing Pharmacist and Technician  
Burnout During the COVID-19 Pandemic

ACPE Universal Activity Number:  
0175-0000-21-001-H01-PT

Target Audience: Pharmacists  
Activity Type: Knowledge-based  
Release Date: January 1, 2021

(No longer valid for CE credit after January 1, 2024)

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## WPQC UPDATE:

# Wisconsin Community Pharmacy Enhancement Initiatives

by J. Grady Easterling, PharmD, Michelle Farrell, PharmD, BCACP, Kari Trapskin, PharmD

**C**ommunity pharmacy enhancement initiatives can be challenging to understand for a few reasons. First, there are many acronyms to be familiar with. Second, community pharmacies might be participating in more than one of these initiatives. Third, some pieces of the initiatives overlap with one another. This article aims to review the basics of the Wisconsin Pharmacy Quality Collaborative (WPQC), the Community Pharmacy Enhanced Services Network (CPESN), and Flip the Pharmacy (FTP), along with providing an overview of the progress of each.

When CPESN was first marketed, there was a lot of confusion, since the Pharmacy

Society of Wisconsin (PSW) had been supporting the similar WPQC program since 2008, and there were many pieces of the programs that seemed to overlap. In particular, CPESN and WPQC both help pharmacists to practice at the top of their clinical ability, provide exceptional patient care, and seek equitable reimbursement for clinical services.

## WPQC

The Wisconsin Pharmacy Quality Collaborative (WPQC) was established by PSW in 2008 as a network of pharmacies with pharmacists who provide medication therapy management (MTM) services, such as comprehensive medication review and assessment (CMR/A), for patients with

the ultimate goal of resolving drug therapy problems, improving adherence, and engaging patients in their own care.

The Wisconsin ForwardHealth (Medicaid) MTM program is based on the WPQC program and provides reimbursement for CMR/As to pharmacies that meet WPQC accreditation standards. Additionally, in Dane County, WPQC pharmacists are reimbursed to provide community-based CMR/A services at senior or community centers, or via telehealth. The program is funded partially by the United Way of Dane County. PSW provides education and support to the network in addition to connecting pharmacies with opportunities for growth and partnership statewide. This program has been in place since 2008 with different payers supporting the work throughout the years, but pharmacies have struggled to fully implement advanced clinical care into workflows. The relatively low numbers of Medicaid CMR/A service submissions, and active pharmacies in the program, reflect this difficulty. The active pharmacies, however, do inspire perseverance. In 2020, more than 25 pharmacies provided over 2,400 CMR/A services to Wisconsin Medicaid members. Finally, WEA Trust/Neugen has successfully partnered twice in the last several years with WPQC pharmacies to expand hypertension and cardiovascular disease control and management for patients who have WEA Trust/Neugen insurance. One outcome has been that these patients work closer with their healthcare team (pharmacists and physicians) to maintain tighter control of their blood pressure by blood pressure self-measurement, remote monitoring, and coaching. Overall, patients were highly engaged in both projects and improved self-management and motivation to manage their chronic conditions through multiple

**Below:** Flip the Pharmacy Coaches. Top row, left to right: Michelle Farrell (Boscobel Pharmacy), FTP Lead, Abbi Linde (Beaver Dam Hometown Pharmacy), Nicole Schreiner (Streu's Pharmacy). Bottom Row, left to right: Nicole Sheldon (Chet Johnson Drug), Dimmy Sokhal (Hayat Pharmacy), Matthew Wlodyga (Chet Johnson Drug).



meetings with the community pharmacist.

## CPESN

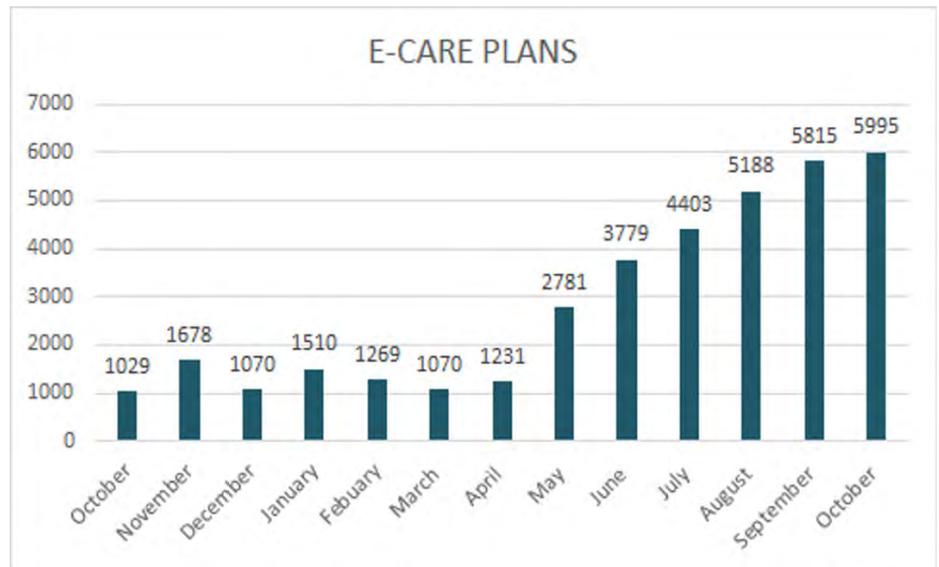
CPESN developed out of the Community Care of North Carolina (CCNC) program, which coordinates patient care through the medical home model. In 2015, CCNC expanded its mission and philosophy, leading to the development of CPESN. CPESN is a network of high-performing, clinically integrated community pharmacies that aims to coordinate patient care within the broader care team, providing medication optimization activities and enhanced services for high-risk patients. Ultimately, CPESN strives to attract regional and national payers to support value-based models for payment in order to improve the quality of community-based patient care. CPESN pharmacies deliver care based on minimum service sets and consistent delivery of services. CPESN Wisconsin pharmacies are required to be WPQC-accredited in order to demonstrate dedication to implementation of meaningful quality-based best practices.

CPESN networks are developed in most states, and CPESN USA at the national level has been able to provide payer opportunities to several states. In late 2020, Humana presented CPESN WI pharmacies with enhanced opportunities for service provision. CPESN pharmacies have also been able to participate in the national P-MAPP (Personalized-Medication Adherence and Persistence Program) study, which was the result of high performance in the OutcomesMTM platform. The focus of P-MAPP is to evaluate motivational interviewing effects on patients with diabetes health outcomes.

## Flip the Pharmacy: Team WPQC

In August 2019, Michelle Farrell, Abbi Linde, Dimmy Sokhal, and Kari Trapskin worked together with a number of pharmacy partners to submit a grant application to the Community Pharmacy Foundation (CPF) on behalf of CPESN Wisconsin. The funding has allowed a group of CPESN Wisconsin pharmacies to participate in the two-year Flip the

**FIGURE 1. Number of Pharmacist eCare Plans Submitted by Month by FTP Pharmacies**



Pharmacy program. Flip the Pharmacy aims to help CPESN pharmacies pivot from filling one prescription at a time to providing longitudinal care, by developing skills around care planning. The group saw the potential for Flip the Pharmacy to not only help Wisconsin CPESN/WPQC pharmacies with care planning, but also to enhance the delivery of patient care within the WPQC program, coining the name “Team WPQC.” The FTP model has engaged coaches across the state, including Nicole Schreiner, Marv Moore, Matt Wlodgya, Nicole Sheldon, and Ryan Bender, who coach their own pharmacies as well as other network pharmacies. The coaches provide support in person and telephonically to help pharmacies integrate changes into their workflow, act as mentors, and provide support. Team WPQC started with 21 pharmacies and currently coaches 42 pharmacies across Wisconsin.

One of the FTP program’s goals is consistent use of the Pharmacist eCare Plan in community pharmacy workflow. The Pharmacist eCare Plan is a standardized documentation format embedded in pharmacy software systems that can be used to communicate with fellow providers and payers. CPESN pharmacies use Pharmacist eCare Plans as documentation to further demonstrate the value that pharmacist-provided clinical services bring to patients within the broader health care system. The implementation of Pharmacist eCare Plans into workflows provides pharmacies

with the ability to document patient care longitudinally for continuity of care across each patient encounter. As pharmacists are all taught in school, “if it wasn’t documented, it didn’t happen.”

One of the main goals for each FTP pharmacy has been to submit 25 Pharmacist eCare Plans per month related to specific areas of clinical focus. To accomplish this transformation, participating pharmacies implement change packages that focus on a specific disease state or medication, called progressions, in stepwise domains. The domains are:

1. Leveraging the Appointment-Based Model
2. Improving Patient Follow Up and Monitoring
3. Developing New Roles for Non-Pharmacist Support Staff
4. Optimizing the Utilization of Technology and Electronic Pharmacist Care Plan
5. Establishing Working Relationships with Other Care Team Members
6. Developing the Business Model and Expressing Value

## Results

Flip the Pharmacy has moved through domains 1-6 for progressions 1 and 2 (hypertension and opioids). FTP is currently focused on immunizations and diabetes, in addition to COVID vaccine preparation, progressing through each of the six domains while maintaining the

clinical and longitudinal aspects of the previous two progressions. At the time this article was written, Pharmacist eCare Plan intervention documentation data had focused on hypertension, opioids, and COVID planning. Between October 2019 and October 2020, Pharmacist eCare Plans submitted by FTP pharmacies increased five-fold (Figure 1).

## Collaboration

There are clear ties among all three of these community pharmacy enhancement initiatives. Collaboration has been instrumental in attaining these results. For instance, PSW/WPQC and CPESN/FTP pharmacists have collaborated to provide opportunities for networking and Q&A through the PSW Community Pharmacy Forum, which was started in October 2020. The forum is a 30-minute informal video chat for independent community pharmacists to discuss their strategies to integrate services into their pharmacies. Topics have focused on immunizations during the current pandemic, COVID testing, and planning for the COVID vaccination rollout. Additionally, PSW has collaborated with community pharmacists to launch the inaugural PSW Community Pharmacy Advisory Committee (CPAC), comprised of community pharmacists from different types of practice settings.

PSW and CPESN/FTP have initiated community pharmacy-focused webinars on topics like Pharmacist eCare Plans, the appointment based model, diabetes prevention program, and diabetes self-management education and support, and telehealth. Educational toolkits are another hidden gem of PSW/WPQC and Flip the

“

**My engagement with the application for the Flip the Pharmacy grant and listening to the change packages has helped me evolve as a pharmacist. It has been an amazing experience listening to other pharmacists and sharing it with pharmacies in our network. I think FTP is all about growth for practice of community pharmacy. The workflow and support offered through FTP is integral and helps set you up for success.**

**- Dimmy Sokhal (Hayat Pharmacy)**

Pharmacy. PSW provides clinical toolkits to WPQC/CPESN pharmacies in addition to supporting an electronic collaborative practice agreement toolkit with templates and a delegate verification (“tech check tech”) toolkit. The work through FTP has generated best practice toolkits, available to pharmacists nationwide, that promise to improve and inform practice advancement.

Additionally, collaboration among these groups led to technician-focused CMR/A workgroup sessions to help pharmacy technicians achieve confidence in assisting with the delivery of CMR/A services. The most recent technician workgroup was held in June 2020, and the next session will begin in January 2021.

Collaboration is very important to the success of pharmacy practice enhancement initiatives. During this time of uncertainty and the need to provide more support than ever to patients with chronic conditions, it is encouraging to see the continued motivation and open collaboration among these groups to expand enhanced pharmacy services in the community setting.

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## More Information

For more information about CPESN, WPQC, and Flip the Pharmacy, please refer to the March/April 2020 issue of the Journal of PSW. Other great resources are: [www.pswi.org/WPQC/About-WPQC/About-WPQC](http://www.pswi.org/WPQC/About-WPQC/About-WPQC), [www.cpesn.com](http://www.cpesn.com), and [www.flipthepharmacy.com](http://www.flipthepharmacy.com).

## PRECEPTING SERIES:

# Suggestions for Preceptor Facilitation of Student Continuing Professional Development During Introductory Pharmacy Practice Experiences

by Lucas Grabowski, 2021 PharmD Candidate, Kristen South, 2021 PharmD Candidate, Karen J. Kopacek, MS, RPh, Amanda Margolis, PharmD, MS, BCACP

Continuing professional development (CPD) is a cornerstone of the profession of pharmacy, because it promotes a lifelong journey of learning.<sup>1</sup> It is important to understand that CPD is a cyclical process, which promotes the continuous improvement of pharmacy professionals (Figure 1). The CPD framework is designed to encourage pharmacy professionals to constantly learn and develop skills, and then apply those skills in their future practice. By using this framework, pharmacists have the structure they need to achieve their individual goals and maintain workplace competencies.<sup>2</sup> The Accreditation Council for Pharmacy Education (ACPE) recognizes the importance of introducing pharmacists to the framework early in practice, and thus requires students enrolled in accredited schools and colleges of pharmacy to display competency in the CPD framework prior to graduation.<sup>3</sup> Early introduction of the framework, along with frequent opportunities to implement the CPD process outside the classroom, is crucial for early development of lifelong learning skills and self-awareness.

Schools of pharmacy provide opportunities throughout a student's academic career to learn from or about the CPD model and incorporate it into their professional practice.<sup>3</sup> Introductory Pharmacy Practice Experiences (IPPEs) offer students an ideal learning environment to appreciate the importance of CPD and explore how to incorporate

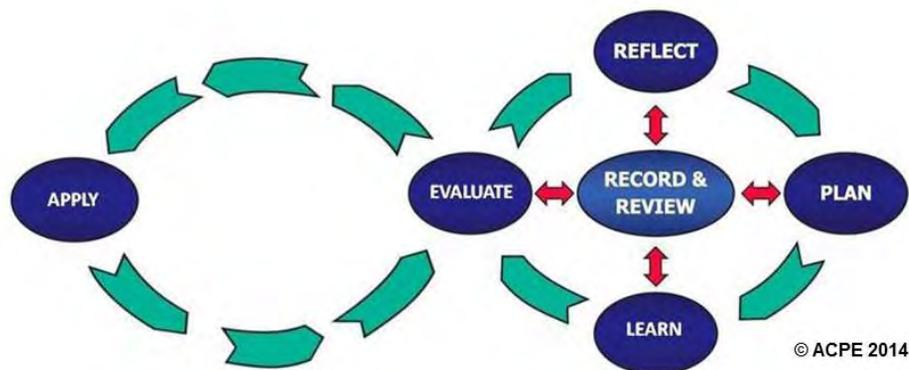
it early into their professional careers. Incorporating activities for IPPE students to build on their foundational knowledge will help them develop skills required for future practice.<sup>4</sup> Currently in Wisconsin, Doctor of Pharmacy (DPH) students become interns after the successful completion of their second year;<sup>5</sup> therefore, first- and second-year IPPEs are more observatory in nature. This role as an observer allows students to develop and practice professional developmental skills that will be required throughout the rest of their careers. Examples of skills practiced during DPH1 and DPH2 IPPEs include use of drug information resources, verbal communication, and professionalism. Using the CPD framework allows a student pharmacist to self-identify the skills they hope to work on during each rotation, and share those goals with their preceptor. In turn, the preceptor can offer guidance and

resources to help strengthen and reinforce skills.

For students to be successful using CPD during their IPPE rotations, they need to set goals and convey to their preceptor what they hope to achieve and improve on. The objective of this quality improvement project was to determine which skills students wish to develop during clerkship rotations, and how IPPE preceptors can shape their site experiences to help PharmD students achieve their personal learning goals.

Continuous professional development was introduced to first-year students in the spring of 2019 and to second-years in the fall of 2018. During this introduction, students completed a guided reflection, and then created at least one SMART learning objective. The SMART learning objective was finalized by February 2, 2019. Students were given at least two months

**FIGURE 1. Continuing Professional Development (CPD) Framework**



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**TABLE 1. Survey Result Codebook**

<i>Category</i>	<i>Definition</i>	<i>Example</i>	<i>Count</i>
<b>Skills Targeted</b>			
Time Management	More consistent routines; better scheduling	"I became more engaged and started to attend more student organization meetings and presentations hosted around the campus. A behavior I changed that allow me to be more engaged is my time management. By setting schedules in advance, I am able to allocate time to these events that I would otherwise can't."	62
Professional Development	Updating or reviewing CV; Giving a speech in front of a large audience; Connecting with a mentor; Shadowing a pharmacist; Practicing interviewing skills	"In preparing my resume and CV I learned how important updating pharmacy related activities are so since getting my job I have begun spending an hour each month to record and track my experiences and accomplishments."	57
Communication	Seeking out a pharmacy mentor to build a relationship with; Attending professional meetings	"I improved my communication skills by asking open ended questions. Show empathy in my consultations and stay collective and calm during medication reviews."	55
Academic Performance	Staying caught up in classes; better study habits	"I have made a change in behavior to be more proactive about my learning and proactive in preparations for lab or any other activity. I try to stay on top of the information presented in class and measure my understanding as I go so that I am not struggling to learn the material last minute."	34
Cultural Sensitivity	Attend Pride in Healthcare Talk; volunteer at a charitable pharmacy	"Being aware of people's unique backgrounds is important to treating everyone with equal care."	24
Leadership	Holding leadership role in student organization; Completing hours for the leadership certificate	"I built on my leadership skills and implemented it into my daily lifestyle. I have become more assertive and stating my opinions. I also have become more open."	24
Interprofessional Collaboration	Attend interprofessional events; Volunteer with medical, nursing, and physician assistant students at free clinics	"worked with attending physician and medical students to help diagnose, something I have little experience doing - also offered my drug knowledge when explaining the medication."	11
Other	Response did not fit any of the above categories	N/A	30
Undescribed	Student discussed impact of CPD but did not describe what skills were targeted to achieve learning plan	N/A	5
<b>Activity Implemented</b>			
Information Seeking	Researching more information about a topic; attending symposium speakers	"I went to all of the lunch and learns this past semester and have gained knowledge in healthy equity and social justice through these presentations."	64
Studying Techniques	Implementing new studying methods such as flashcards, study guides, study groups, etc.	"Making notecards and Quizlets along with study sheets that summarized each lecture."	60
Practice/Repetition	Continuous training to improve performance on a task or skill	"To perform blood pressure measurement successfully, I have made sure to practice using the manual blood pressure cuff with my family/friends and patients."	57
Student Organizations	Becoming more involved with a student organization through events, volunteer opportunities, or meetings	"I attended a much higher number of speakers and meetings with student organizations that I was not a part of. I went above and beyond the CCAT requirements and implemented more time in my schedule to attend events and speakers that interested me."	38
Volunteering	Volunteering in the community	"I tried to participate in a variety of volunteer opportunities to get a better perspective on the pharmacy profession and to improve my interpersonal communication skills."	27

**TABLE 1. Survey Result Codebook Continued**

<i>Category</i>	<i>Definition</i>	<i>Example</i>	<i>Count</i>
<b>Activity Implemented</b>			
Shadowing	Shadowing a pharmacist	"I did a job shadow at the VA to learn more about how pharmacists are integrated there and what a job there would look like."	23
Reflecting	Looking back on experiences and thinking about how they influenced the student	"After each of my experiences at St. Vincent De Paul, I took time to self-reflect on what I learned and how each particular experience could help me as a future pharmacist. Before this semester, I really did not like to take the time to reflect. However, I have made reflection a bigger part of my routine now that I realize it can be important to growth."	23
Working	Working at a pharmacy	"I got a job in a community setting and practiced talking to patients in a healthcare setting. I was able to apply my pharmacotherapy skills in talking to patients at the pharmacy."	16
Other	Response did not fit any of the above categories	N/A	5
Undescribed	Student discussed impact of CPD but did not describe what activities they completed to achieve learning plan	N/A	2
<b>Impact of Learning Plan</b>			
Time Management	More time for other activities besides coursework	"It has helped me be better organized and more able to chase down/ experience opportunities in pharmacy that I did not have the time for. Being more efficient with my time/scheduling has helped me focus on new chances to experience pharmacy and focus on the activities I care about."	57
Confidence	Feeling more confident or comfortable about an activity	"It has made me more confident in my professional abilities and my own ability to learn and adapt in situations."	46
Connected to the Profession	Learning implementation has helped student focus in on particular interest in pharmacy career, for example specialty pharmacy, pediatrics, outpatient, etc; Student feels a purpose with the profession	"I feel a lot more connected with my profession."	34
Communication	Able to communicate effectively with patients; Implementing more patient-friendly language	"Implementing my learning plan has improved my patient communication by leading the class more times and it has helped me become a better teacher in training other students to lead the class."	33
Self-Awareness (Meta Cognition)	Having a clear site on where the student is and where they want to be; Realizing what activities are important to the individual; Realizing behaviors that aren't beneficial for well-being	"Self-awareness has always been one of my weaknesses, and I am proud to say that I have seen this growth within myself and I am excited to see even more in the future."	31
Professional Development	Realizing the importance of goal setting on CPD	"I think this has reinforced the importance of continual learning and pushing myself to learn things on my own even before we do in school. I think this is important now as I embark on my summer internship, and it will be important as a future pharmacist with the ever changing medications coming to market."	27
Clinical Skills	Improving knowledge of pharmacy practice; Developing proficiency in pharmacy activities	"Being able to set goals and completing them is preparing me for the future such as when a patient asks me a question and I don't know the answer to it, I would have to research about the question and follow up with them. It allows me to improve on things that I was not competent in and to explore different concepts that I do not have much knowledge about."	24
Academic Performance	Better understanding of course material; Improved grades	"I believe it has helped me both academically and professionally because my grades have gotten better, I've retained more information, and I have went to more extracurricular activities."	23

**TABLE 1. Survey Result Codebook Continued**

Category	Definition	Example	Count
<b>Impact of Learning Plan</b>			
Networking	Making connections at conferences, IPPEs, or through student organizations	"Implementing my learning plan has made a very strong impact on my professional development as I have become more involved in my school community and have expanded my pharmacy network."	22
Improved Well-Being	Reduced stress and/or anxiety	"I think that the work life balance that I have been able to implement will carry with me throughout my career. Having time to myself to be able to recoup from a stressful week so that I can study and internalize information will allow me to give better care to my patients and prevent feeling burned out from all of the information that I am processing on a daily basis."	20
Cultural Sensitivity	Being aware of prejudices and inequalities in healthcare; Better understanding how to interact with patients with a different background;	"It has developed me professionally by allowing me to assess my prejudices and inequalities in healthcare. By being aware, I can be a better healthcare professional when serving these groups."	11
Interprofessional Collaboration	Understand the roles of other professionals; Ability to work well on a team	"This collaboration activity enhanced my inter-disciplinary teaching skills as I had the opportunity to teach not only other health profession students, but also 2 physicians."	11
Other	Response did not fit any of the above categories	N/A	6
Undescribed	Student skills or activities completed but did not describe the impact of their learning plan on CPD	N/A	11
No Impact	Student stated learning plan had no impact on CPD	N/A	2

to complete the self-determined SMART learning objective. At the end of the spring 2019 semester, students were required to complete a survey about completion of their objective. The survey asked students to elaborate on skills or activities they completed, how these skills and activities were incorporated into behavior, and how their professional development was affected by using the CPD framework (Box 1). The students were also asked to report any barriers they faced when trying to complete their learning plan.

Two investigators used the survey responses to develop a codebook regarding the skills identified, activities completed, and the impact on students' professional development (Table 1). Once the codebook was finalized, one investigator (KS) reviewed and coded all responses, and a second investigator (AM) conducted a data audit and was available for questions regarding coding data. According to the University of Wisconsin-Madison Health Sciences Institutional Review Board, this project did not meet the federal definition of research and was determined to be

**Box 1: SMART Objective Completion Survey**

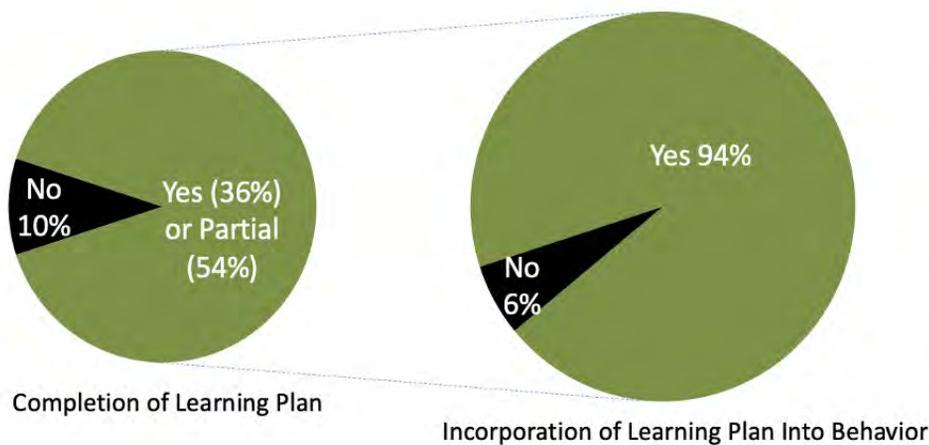
1. Looking back at your most recently implemented precepting CPD learning plan, did you complete the learning activities you identified? (i.e. the SMART objective DPH2 students drafted at the end of fall semester or DPH1 students drafted 2/12/19) **Yes/no/partially**
2. **If yes or partially, describe the learning activities you implemented.** If no, what barriers did you encounter?
3. If yes, have you incorporated the skills and/or activities identified in your CPD learning plan into your behavior or actions? **Yes/no**
4. What skill/activity did you implement? What behavior changes have you made? If no, what barriers did you encounter?
5. If yes, please describe how you incorporated the skill/activities into your behavior.
6. What impact has implementing your learning plan made on your professional development?

programmatically evaluated.

Of the 279 students who completed the survey, 90% stated they were either fully successful or partially successful in completing their learning plan to achieve their SMART learning objective.

Additionally, 94% of those students who were fully or partially successful in completing their learning plan succeeded with incorporating their learning plan into their behavior by the end of the spring 2019 semester (Figure 2). The majority

**FIGURE 2. Percentage of Students Who Incorporated the Learning Plan**



of student learning plans consisted of implementing activities to help them develop or improve upon different skills. The three most common skills were time management, professional development (e.g., CV building and connecting with pharmacists in practice), and communication (Table 1). The findings from this survey are consistent with results from similar surveys conducted by other institutions, indicating that student pharmacists across the country are targeting similar skills to improve their professional growth.<sup>6</sup> Unni and colleagues evaluated the use of the CPD framework in first- and second-year pharmacy students.<sup>6</sup> Students found that by using the CPD framework they were successful in strengthening their foundational skills like communication, interprofessional collaboration, and involvement in the profession. Knowing these targeted skills can allow preceptors to find unique opportunities at their sites for students to further develop them and offer techniques and suggestions based on their own experiences as clinicians.

Time management is arguably one of the most important skills that a student pharmacist should establish and continue to improve upon during their time in school. Time management was the most common skill that first- and second-year students planned to develop with their learning plan (n=62; 22.2%). Activities students completed to improve their time management skills included attempting new study techniques (54.8%), practicing different studying techniques so they become second nature (32.3%), and

seeking information regarding different studying techniques (14.5%). Preceptors can help first- and second-year students develop this skill during their IPPE rotations by sharing their own study habits while in school and what worked (and didn't work) for them. Additionally, preceptors can tell students how they were able to manage the stresses of pharmacy school and the techniques they still use in their professional practices. Students noted that when they focused on improving their time management, they also experienced an improvement in academic performance and improved well-being, and they became more self-aware.

Students recognized the ability to communicate as an important skill in the field of healthcare. Communication is required on a daily basis for pharmacists in practice.<sup>7</sup> Pharmacists use their communication skills in a multitude of ways: to counsel patients on safe medication use, to speak with doctors and nursing staff to ensure the correct medication and dose is being used for their patients, and with other pharmacists to pass off information between shifts. Students understood this when they filled out the survey, as communication was the third most common skill selected (n=55; 19.7%). Regardless of the rotational site, preceptors can help students enhance their communication skills for both required lab courses in school and future practice. The activities most students used to improve their communication skills were practice and repetition (41.8%), participation in student organizations (20%), and self-

reflection (12.7%). Preceptors can help students develop their communication skills by implementing experiences that can be divided into three phases: pre-observation, active observation, and post-observation.<sup>8</sup> The pre-observation phase allows students to become aware of the learning goals of the observation. The active observation phase is the interaction that the preceptor has with a patient or healthcare provider. Active observation can also include mock interactions or scenarios if interactions with patients or healthcare providers is not feasible at a site. The post-observation phase allows students to reflect on the interaction as a whole. The use of active observation can enhance a preceptor's ability to educate students on a variety of communication techniques. Also, preceptors can provide students with a situational problem and have the student practice their communication skills for a similar situation in the future. At the end of the practice situation, the student and preceptor can debrief and talk about what they thought went well and what the student could work on. Through facilitating student practice, we expect students' communication skills to improve.<sup>9</sup>

Some students completing the survey stated their goal was fostering their professional development by becoming more engaged in the profession of pharmacy (n=59, 21.1%). Students recognized that being more engaged will help them connect with others in the profession and give their future practice a meaningful purpose. The activities that most students completed to achieve their goal included shadowing pharmacists (33.9%), researching different pharmacist career paths (32.2%), and joining student organizations (23.7%). Preceptors can assist students with becoming more engaged in the profession by offering a variety of different experiences within a single rotation. While I (LG) was a third-year pharmacy student, my acute-care preceptor had me shadow pharmacists in multiple areas of the hospital. This gave me insight as to how a pharmacist's role can vary across patient care units and specialties. Clinical rotations set up this way allow first- and second-year pharmacy students to gain a breadth of knowledge they likely didn't have prior to the rotation. By rotating

through different units and working with a variety of pharmacists, students can learn about the role of the pharmacist in a code situation, how pharmacists ensure a patient is receiving the right chemotherapeutic drug and dose, how pharmacists participate in antibiotic stewardship, and much more. This opportunity can potentially pique a student's interest in an area of practice that they were previously unaware of. Allowing students to work with different pharmacists and shadow their particular practices will not only introduce students to the wide array of pharmacist roles, but also help the student to expand their network early and feel more connected to the profession.

Interprofessional collaboration is another skill that students targeted for CPD and that preceptors can help them develop while on rotation (n=11; 3.9%). Students who wanted more experience working with other professions often practiced theoretical interactions they could have in the future with other healthcare professionals (36.4%); volunteered through WisCARES or MEDiC, community clinics for low income households in the Madison area (27.3%); and took part in shadowing opportunities (18.2%). A simple but impactful way to assist students with developing their interprofessional collaboration skills is asking them to witness and reflect on interactions that the preceptor has with others. Students will be able to see how the team works together for the common goal of caring for the patient. Another strategy is to set up shadowing experiences so the student witnesses how interactions between pharmacists and health care providers differ in different situations. Finally, role-playing with mock interactions exposes students to potential questions they might be asked during an interprofessional interaction. By providing IPPE students with these unique opportunities, preceptors support student development of and confidence in their communication and interprofessional collaboration skills.

Preceptors can further enhance a student's professional development by having them reflect on shadowing experiences after completion. Reflection encourages students to think about what aspects of each pharmacist's role they liked and how their role could be further

expanded in each setting. Additionally, reflecting and debriefing with a preceptor assists the student with putting the whole experience into context and possibly provides further meaning to the experience.<sup>10</sup>

As part of the CPD process, student pharmacists chose skills they wanted to improve upon early in their career and develop for future practice. While most first- and second-year students were able to at least partially complete their SMART learning objectives at the end of the spring 2019 semester, 10% were unsuccessful in achieving their learning plan, and 54% were only partially successful. Time was reported as the most common barrier preventing completion of SMART learning objectives by 79% of students who completed the survey. Preceptors can play a role in helping students achieve their personal learning plan. After students complete the required rotational activities, preceptors and students can work together to fill the remaining time at the rotational site with opportunities for the student to work with the CPD framework to develop and strengthen their targeted skills. By making that time available, preceptors have the opportunity to assist students in achieving their SMART learning objectives during IPPE rotations.

With assistance from preceptors, student pharmacists can incorporate their targeted professional skill into their learning plan. Not all preceptors or sites might be able to offer experiences to develop all the skills described in this article, but they likely have resources to point students in the right direction. To best facilitate CPD with IPPE students, preceptors should ask at the beginning of the rotation what their student is hoping to learn from the rotation and arrange opportunities as available.

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## References

1. Accreditation Council for Pharmacy Education. CPD Overview. ACPE Webpage. Accessed November 15, 2020. <https://www.acpe-accredit.org/continuing-professional-development/>
2. McConnell KJ, Delate T, Newlon CL. The sustainability of improvements from continuing professional development in pharmacy practice and learning behaviors. *Am J Pharm Educ.* 2015;79(3):36. doi: 10.5688/ajpe79336
3. Accreditation standards and key elements for the professional program in pharmacy leading to the doctor of pharmacy degree ("Standards 2016"). Accreditation Council for Pharmacy Education. Published February 2015. Accessed November 20, 2020. <https://www.acpe-accredit.org/pdf/Standards2016FINAL.pdf>
4. Pham A. Improving pharmacy students' education through enhanced experiential learning. *Am J Pharm Educ.* 2009;73(3):56.
5. Wisconsin State Legislature. Chapter 450 pharmacy examining board. December 2020. Accessed December 4, 2020. <https://docs.legis.wisconsin.gov/statutes/statutes/450/03>
6. Unni E, Le MT, Whittaker A. Implementation of a continuing professional development course in a longitudinal didactic curriculum for pharmacy students. *Am J Pharm Educ.* 2019;83(8):7013. doi:10.5688/ajpe7013
7. McDonough RP, Bennett MS. Improving communication skills of pharmacy students through effective precepting. *Am J Pharm Educ.* 2006;70(3):58. doi:10.5688/aj700358
8. Bauer MA, Dabirshahsahebi S, Rotzenberg KE. Active observation in pharmacy precepting. *J Pharm Soc Wis.* 2017;20(1):24-26.
9. Jin HK, Choi JH, Kang JE, Rhie SJ. The effect of communication skills training on patient-pharmacist communication in pharmacy education: a meta-analysis. *Adv Health Sci Educ Theory Pract.* 2018;23(3):633-652. doi:10.1007/s10459-017-9791-0
10. Bergsbaken JM. Into the looking glass: how to facilitate reflection and debriefing during experiential rotations. *J Pharm Soc Wis.* 2019;22(3):22-24.

# Wisconsin Pharmacies' Response to the COVID-19 Pandemic: Barriers, Successes, and Looking Forward

by Sarah Bittner, BS, 2022 PharmD Candidate, Trey Jones, BS, 2023 PharmD Candidate

The emergence of SARS-CoV-2, the novel virus that causes COVID-19, has put unprecedented stress on healthcare systems, transforming the way healthcare professionals deliver care. Although this stress poses unique challenges, it is also an avenue for innovation and process improvement. Clinicians have responded to this challenge by increasing the use of telemedicine and other methods for delivering care without transmission risk.<sup>1</sup> However, there are limited data describing how Wisconsin pharmacies have been affected by the new healthcare landscape. Initial exploration of this topic through personal testimony revealed that the spread of COVID-19 has affected many aspects of pharmacy practice, prompting the need for a closer evaluation of the barriers pharmacies face and the strategies they

have implemented to maintain high-quality delivery of care.

## Methods

The Pharmacy Society of Wisconsin (PSW) developed an electronic survey to collect information from practicing pharmacists and pharmacy technicians in Wisconsin about their experiences during the pandemic. This survey was announced via the PSW newsletter to 4,266 PSW members and a special alert targeting PSW's pharmacy technician members. Responses were collected over a period of 12 days, between July 10 and July 22, 2020. Respondents were asked to report their primary practice setting, rank known barriers to pharmacy practice, self-report other barriers they face, and describe strategies they have implemented to address these barriers. Known barriers to pharmacy practice were identified through

preliminary analysis of anecdotal accounts from PSW members. When respondents ranked known pharmacy barriers, they were asked to rank on a scale of zero to five, where zero indicated "no difficulty with this barrier" and five indicated "high difficulty with this barrier." The means of the known barrier rankings were calculated to determine which barriers were perceived as most and least difficult.

Additionally, PSW followed up with six pharmacist respondents whose areas of practice included community pharmacies, inpatient care, ambulatory care, and primary care clinics to obtain personal testimony about the barriers they have faced and what they have done to overcome them. Additionally, one pharmacist who did not complete the survey on time was contacted for an interview due to their involvement with COVID-19 testing; this pharmacist worked in a community pharmacy.

*Below: Hayat Pharmacy Staff Pharmacist bidding farewell to patients leaving Hayat Pharmacy after receiving COVID-19 point of care testing*



## Pharmacy Barriers & Successes

A total of 36 people responded to the survey; 25 respondents were pharmacists and 10 respondents were pharmacy technicians. One respondent did not report their profession. Respondents worked in a variety of practice settings, including community pharmacy (18), inpatient care (8), ambulatory care or primary care clinic (2), long-term care (2), specialty pharmacy (1), home infusion pharmacy (1), and mail-order pharmacy (1). One respondent worked in both long-term care and community settings; one worked both inpatient and outpatient at a Veterans Affairs hospital; and one worked at various settings, including a primary care clinic, a hospital, and a community pharmacy.

**TABLE 1. Pharmacy Barrier Rankings**

Pharmacy Barrier	No Difficulty	Low Difficulty	Medium-low Difficulty	Medium Difficulty	Medium-high Difficulty	High Difficulty	Mean Ranking
Maintaining adequate staffing	1 (4%)	9 (38%)	6 (25%)	4 (17%)	3 (13%)	1 (4%)	2.17
Pharmacists working remotely	8 (33%)	7 (29%)	4 (17%)	2 (8%)	1 (4%)	2 (8%)	2.19
Difficulty obtaining/lack of personal protective equipment	1 (4%)	4 (17%)	2 (8%)	11 (46%)	4 (17%)	2 (8%)	2.91
Drug shortages	0 (0%)	3 (13%)	5 (21%)	9 (38%)	4 (17%)	3 (13%)	2.96
Difficulty obtaining/lack of disinfectant supplies	0 (0%)	3 (13%)	5 (21%)	6 (25%)	7 (29%)	3 (13%)	3.08
Spread of misinformation about COVID-19	0 (0%)	0 (0%)	5 (21%)	5 (21%)	8 (33%)	6 (25%)	3.63

*Barrier ranking by number of respondents (n = 24)*

Among known pharmacy barriers, respondents ranked spread of misinformation about COVID-19, difficulty obtaining/lack of disinfectant supplies, and drug shortages as the most burdensome barriers affecting their pharmacies (Table 1). The most common self-reported obstacles were low patient compliance with public health safety guidelines (6), difficulty delivering care outside of the pharmacy (6), increased use of delivery services (3), difficulty allocating time to disinfect pharmacy surfaces (2), and reduced prescription volume and sales (2). Additionally, respondents expressed general frustration with newly implemented workflows related to these barriers that negatively affect pharmacy efficiency.

Follow-up with one pharmacist revealed that disinfecting surfaces was especially difficult to complete in a timely manner. Pharmacists followed Centers for Disease Control and Prevention (CDC) guidance to prevent the spread of COVID-19 by cleaning and disinfecting counters, waiting areas, and other spaces within the pharmacy thoroughly and frequently.<sup>2</sup> However, routine deep cleaning is a time-consuming activity, and pharmacists noted that diverting staff to complete this duty puts additional stress on their workflow. Additionally, some pharmacies experienced difficulty obtaining disinfectants from their suppliers and were impelled to explore other channels of distribution. Similarly, some pharmacists noted a shortage of personal protective equipment, requiring

pharmacy workers to reuse equipment that typically would not be reused.

Another major obstacle that pharmacies encountered was the spread of misinformation about COVID-19. Four respondents reported that patients had either shared misinformation regarding COVID-19 or were not following public health guidelines such as social distancing. One pharmacist reported that their efforts to educate patients still resulted in low acceptance of the recommendations. Additionally, one pharmacist believed that some patients became apprehensive after hearing the recommendations, which was an unintended consequence of patient education.

### How Pharmacies Adapted

Although COVID-19 has presented unforeseen challenges, some of those challenges are opportunities for improvement and growth. Thus, the seven pharmacists who completed follow-up interviews were asked to describe strategies they have employed to overcome the challenges they face.

### Curbside Service

The emergence of public health policies intended to prevent the spread of the virus has put additional emphasis on care delivered outside of the traditional pharmacy setting. Cassie Levetzow, a pharmacist at Aurora St. Luke's Hospital, laid out details of the new curbside prescription pickup program St. Luke's

Hospital has put in place. The service was designed to decrease in-person exposure for both patients and pharmacy staff. Along with the implementation of curbside pickup, the pharmacy also created a new triage communication system. The new system uses color coordinated stickers to notify staff which patients require a consultation because of a new prescription or change in medication, when there is pertinent information that needs to be shared with the patient, or which patients can be offered a consultation because they are simply picking up a medication with

*Below: HealthMart COVID-19 Testing sign located outside of Hayat Pharmacy parking lot*





*Above: Pharmacy Staff member at Aurora St. Luke's Hospital delivering patient prescriptions via curbside pickup*

no changes. Since these programs were implemented, the pharmacy has received overwhelmingly positive feedback from patients. Curbside pickup is a service that the pharmacy plans to keep in place for the foreseeable future.

Similarly, Dr. Thad Schumacher, of Fitchburg Family Pharmacy, has optimized immunization delivery by employing a curbside model. Approximately 28% of adults in the United States received at least one vaccine from a pharmacy in 2017.<sup>3</sup> Community pharmacies are key immunizers, especially during a pandemic when other healthcare settings are shifting to remote care. Administration of vaccines in a drive-through setting might be one of the more innovative ways pharmacists can promote social distancing, because there is no need for the patient to enter the pharmacy or even leave their vehicle. At Dr. Schumacher's pharmacy, patients call ahead to schedule curbside immunization visits. When the patient arrives, they complete all necessary paperwork in their vehicle while pharmacy staff prepares all necessary supplies. Then, the pharmacist administers the vaccine through the window or opened door of the patient's vehicle. The introduction of curbside immunizations might prove to be a valuable addition to

pharmacy practice, especially as public health authorities continue to emphasize the importance of social distancing.

## Mail-order Pharmacy

Mail-order pharmacy is another service that has expanded substantially since the beginning of the COVID-19 pandemic. Jessica Battaglia, a pharmacist at Aurora Sinai Hospital, shared how mail-order pharmacy has expanded within her practice. Aurora already had a fully functioning mail-order system that was used mainly for patients with specialty medications; Aurora was able to expand this service to accommodate more patients during the pandemic. Although some patients were hesitant to use the mail-order pharmacy at first, the longer COVID-19 precautions and restrictions were in place, the more receptive patients became. With time, mail-order pharmacy through Aurora Sinai hospital was used by the vast majority of patients. Curbside pickup is still available with minimal contact for patients whose needs cannot be met by mail-order pharmacy.

## Telehealth

Pharmacists have expanded their use of telehealth considerably, similarly to other health professions.<sup>1</sup> Cathy Lea, a registered ambulatory care pharmacist at the Mayo Clinic Health System in Eau Claire, shared her telehealth experience with PSW. Ms. Lea's clinic has seen a notable increase in demand for telehealth visits due to COVID-19. During the governor's "safer at home" order, all clinic visits were transitioned to either video or phone appointments, where both healthcare providers and patients attend appointments from their own homes. This posed unique challenges, as telehealth had never been used in such a capacity at this clinic before. At first, some patients thought their telehealth calls were solicitors, because they did not recognize the clinic's phone number. However, this issue subsided as patients became more familiar with telehealth and were notified that they might receive calls from unknown phone numbers. Additionally, it was difficult for pharmacists to demonstrate proper medication use, because patients could not adequately view the demonstrations in

live-video or telephone formats. In response to this concern, Ms. Lea and her colleagues began sharing open-access medication use videos with patients. Pharmacists also asked some patients to attend the telehealth visits with family members to increase the likelihood that vital information was remembered.

These strategies proved to be successful; patients were generally satisfied with their telehealth experience, and some shared that they began to prefer telehealth over in-person visits. In fact, some patients saw their healthcare providers more often, ostensibly due to the convenience of telehealth. Now that telehealth has become a staple of patient care, Ms. Lea and her colleagues hope to expand this service by shifting as many patients as possible from telephone appointments to live-video appointments.

## COVID-19 Point of Care Testing

Testing for COVID-19 is regarded by public health officials as one of the most useful tools we have to prevent the spread of COVID-19 by asymptomatic and symptomatic individuals.<sup>4</sup> Dr. Hashim Zaibak of Hayat Pharmacy was approached by McKesson Healthmart to work with Health and Human Services (HHS) as an independent pharmacy for COVID-19 testing. In mid-May of 2020, COVID-19 point of care testing began at a Hayat location in a Milwaukee zip code that experienced a high rate of COVID-19 infections early on. The partnership with McKesson Healthmart provides Hayat Pharmacy with personal protective equipment and daily overnight shipments of completed samples to the lab, while HHS pays for the self-swab tests and the cost of administration.

The process for point of care testing begins at home for patients, where they register online for a test, take a brief survey, pick an appointment time, and print an appointment voucher. Once patients arrive at Hayat Pharmacy, they call the pharmacy phone number from their car, notifying staff that they are present for their visit. The pharmacist then retrieves the patient voucher and assembles a testing kit for the patient that includes a test tube with the

patient's name and date of birth on it. The pharmacist then walks the patient through the steps of the self-test, including how to seal their sample bag. Throughout the process, the patient is advised to have their car window 80% closed to help protect both the patient and pharmacy staff.

While providing point of care testing was a unique service that pharmacies were excited to be a part of, it did not come without challenges. Dr. Zaibak shared some of the major barriers that his staff overcame to make the service successful, many of which stemmed from socioeconomic-related health inequities. This particular Hayat Pharmacy location delivers care to underserved communities in the inner city of Milwaukee. Dr. Zaibak shared that approximately half of his patients did not have an email address, which was required to register for point of care testing. The staff at Hayat Pharmacy created a generic email address that patients were able to use to register. Another major hurdle for the staff at Hayat Pharmacy was that many of their patients did not have computers or printers at home. For patients without a printer, the pharmacy staff was able to print vouchers at the pharmacy, and patients without a computer were advised to return to the pharmacy three days after their test so a staff member could assist them with checking their results online and provide appropriate counseling. Dr. Zaibak shared the story of one older, high-risk patient who tested positive for COVID-19 but was unable to be reached by Hayat staff members. Dr. Zaibak drove to the patient's home to inform him of his positive test and provide consultation. In spite of the challenges they faced, Dr. Zaibak and the staff at Hayat Pharmacy have worked effortlessly to ensure that this service is available to any patient looking to receive point of care testing.

This is one of several HHS-sponsored COVID-19 point of care testing sites in the state. A similar operation was spearheaded by Franklin LaDien and his team at Walgreens Pharmacy in Milwaukee. This indicates that mass testing is an important goal within HHS.

## Conclusion

Pharmacies in Wisconsin have employed unique and innovative strategies

to continue providing high-quality care during the COVID-19 pandemic. Barriers that pharmacies face during this time include the spread of misinformation, difficulty delivering care outside of the pharmacy, and increased reliance on delivery services. Strategies for working through these challenges included new workflows for the delivery of medications to patient's homes, curbside pharmacy service, and increased use of telehealth. Additionally, pharmacies are helping to keep communities safe by sharing public health information with patients and by contributing to COVID-19 testing efforts. Pharmacies will continue to play an important role in the COVID-19 response and should continue to try novel workflows and ideas that aim to improve patient care. PSW thanks the survey respondents for their time and the valuable information they have provided.

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## References

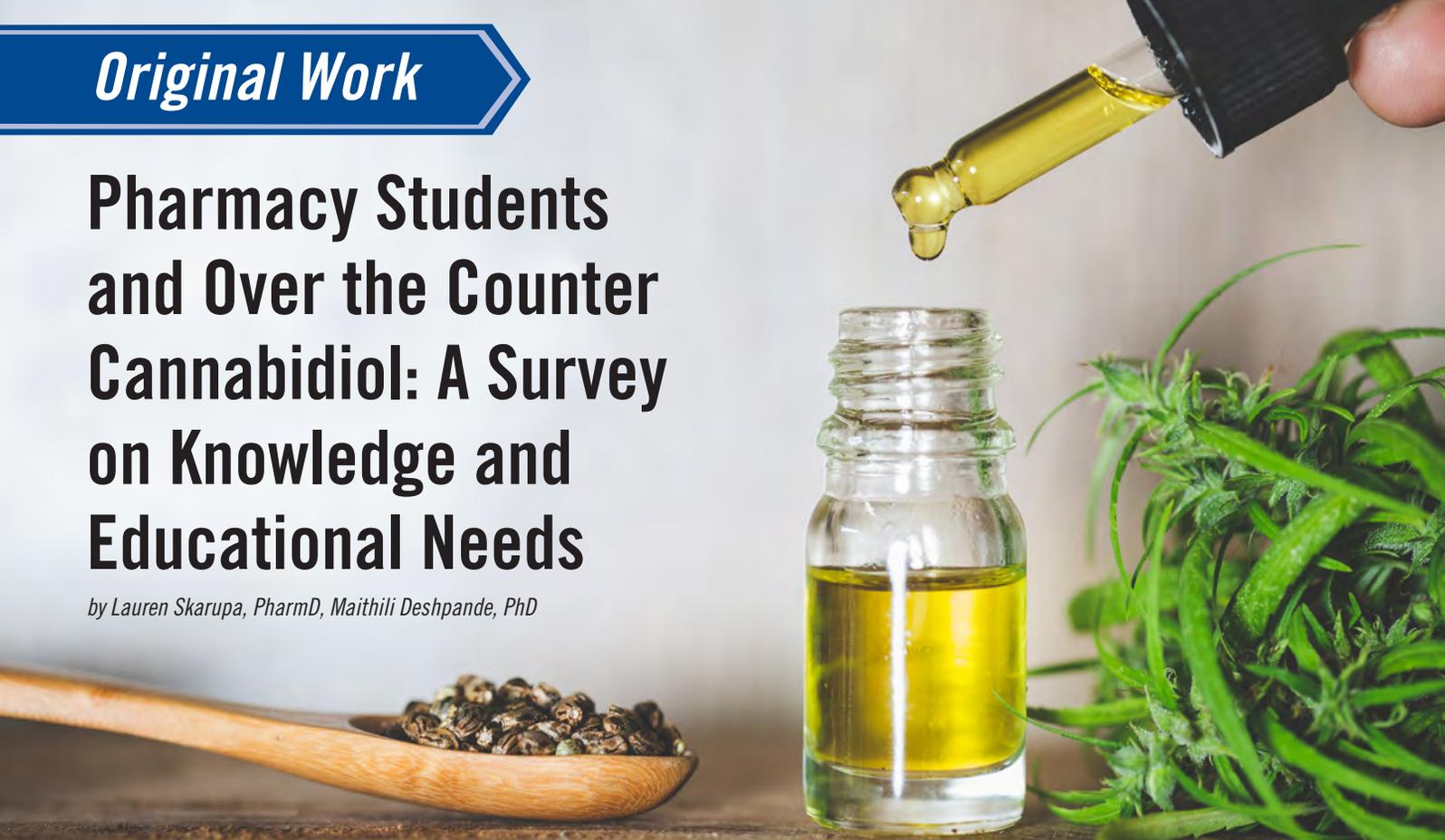
1. Calton B, Abedini N, Fratkin M. Telemedicine in the time of coronavirus. *J Pain Symptom Manage*. 2020;60(1):e12-14. <https://doi.org/10.1016/j.jpainsymman.2020.03.019>
2. Cleaning and disinfecting your facility everyday steps, steps when someone is sick, and considerations for employers. Centers for Disease Control and Prevention. Updated July 28, 2020. Accessed September 23, 2020. <https://www.cdc.gov/coronavirus/2019-ncov/community/disinfecting-building-facility.html>
3. Statement of The National Association

of Chain Drug Stores for U.S. Senate Armed Services Committee Personnel Subcommittee Hearing on FY2013 Defense Authorization (p. 2, Issue brief). 2013. [http://www.nacds.org/pdfs/pr/2012/3\\_28\\_SASC\\_TRICARE\\_comments.pdf](http://www.nacds.org/pdfs/pr/2012/3_28_SASC_TRICARE_comments.pdf)

4. Why COVID-19 testing is the key to getting back to normal. U.S. Department of Human Health Services: National Institute on Aging. Updated September 4, 2020. Accessed September 29, 2020. <https://www.nia.nih.gov/news/why-covid-19-testing-key-getting-back-normal>

# Pharmacy Students and Over the Counter Cannabidiol: A Survey on Knowledge and Educational Needs

by Lauren Skarupa, PharmD, Maithili Deshpande, PhD



**C**annabidiol (CBD) and tetrahydrocannabinol (THC) are two types of naturally occurring phytocannabinoids isolated from the cannabis plant.<sup>1,2</sup> Hemp and marijuana are both cannabis plant species, but different varieties, with hemp having little to no THC.<sup>3</sup> The psychoactive properties that are often associated with marijuana products are due to the presence of THC.<sup>1,3</sup> CBD has relatively low toxicity and has shown no indications of abuse or dependence potential among humans.<sup>2-5</sup> In 2019, two of the largest retail pharmacy chains in the United States, CVS and Walgreens, announced that they would begin carrying and selling CBD-containing products in multiple states across the country, including Illinois and Indiana.<sup>6,7</sup> These products contain CBD derived from the hemp plant (*Cannabis sativa* L.) and have less than 0.3% THC.<sup>3,8,9</sup> They are available over the counter (OTC) in a wide variety of formulations, including capsules, oils, tablets, high-concentration extracts, creams, vape liquids, teas, and others.<sup>10</sup>

The laws regarding CBD use vary greatly among states. This study included four schools of pharmacy representing three different states in the Midwest: Illinois, Indiana, and Wisconsin. In Illinois, hemp-

## Abstract

**Objective:** Cannabidiol (CBD) is expected to be a nearly \$2 billion industry by 2022. Although CBD is available over the counter (OTC), little is known about pharmacy students' knowledge of CBD products. Therefore, the objectives of this study were to assess students' (1) knowledge of CBD and self-rated competency of OTC-CBD product pharmacotherapy, (2) concerns about OTC-CBD product safety and level of preparedness with answering questions about the product, and (3) current and future education needs of pharmacy students.

**Methods:** A 23-question anonymous, online survey was sent to 1570 first-through fourth-year pharmacy students from four pharmacy schools in the Midwest.

**Results:** A total of 347 students completed the survey, yielding a 22.1% response rate. A majority of the participants were 18-23 years old, working in chain community pharmacy settings. The study found that pharmacy students were concerned about the safety and quality of the OTC-CBD products. Most students felt unprepared to counsel a patient on OTC-CBD (n=196, 56.5%) and rated themselves incompetent in pharmacotherapy knowledge of OTC-CBD products. A majority of students (n=272, 91.3%) would like to see CBD-related material incorporated into their curriculum. Students also agreed that pharmacists should be trained before dispensing and/or counseling on OTC-CBD products (n=284, 82.1%).

**Conclusions:** A majority of the pharmacy students in this study felt underprepared regarding CBD products. The survey participants indicated a need for CBD product-related educational opportunities that focus on state and federal regulations, pharmacotherapy, and safety of these products.

**TABLE 1. Demographic Characteristics**

<i>Sample Characteristics</i>	<i>Overall N = 347</i>	<i>IL<sup>^</sup> Schools N=154</i>	<i>IN<sup>^</sup> School N= 51</i>	<i>WI<sup>^</sup> School N= 142</i>
<b><i>Age Range (in years)</i></b>				
18-23	202 (58.2)	90 (58.4)	44 (86.3)	68 (47.9)
24 and older	145 (41.8)	64 (41.6)	7 (13.7)	74 (52.1)
<b><i>Current Year in Pharmacy School</i></b>				
First Professional Year	85 (24.5)	40 (25.9)	9 (17.7)	36 (25.4)
Second Professional Year	85 (24.5)	34 (22.1)	18 (35.3)	33 (23.2)
Third Professional Year	85 (24.5)	42 (27.3)	14 (27.5)	29 (20.4)
Fourth Professional Year	92 (26.5)	38 (24.7)	10 (19.6)	44 (30.9)
<b><i>Primary Pharmacy Practice Setting*</i></b>				
Independent Community	49 (14.1)	23 (14.9)	8 (15.7)	18 (12.7)
Chain Community	179 (51.6)	87 (56.5)	34 (66.7)	58 (40.9)
Clinic	9 (2.6)	0	0	9 (6.3)
Managed Care	3 (0.9)	1 (0.65)	0	2 (1.4)
Hospital	91 (26.2)	35 (22.7)	13 (25.5)	43 (30.3)
Hospice/Assisted Living Facility	3 (0.9)	1 (0.65)	0	2 (1.4)
I don't work outside of pharmacy school	57 (16.4)	26 (16.9)	5 (9.8)	26 (18.3)
Other	12 (3.5)	3 (1.9)	2 (3.9)	7 (4.9)
*Percentages may not add up to 100% due to being a select all that apply question. <sup>^</sup> IL = Illinois, IN = Indiana, WI = Wisconsin				

sourced CBD for any use, marijuana-sourced CBD for medical use, and marijuana-sourced CBD for recreational use are all legal as of 2020.<sup>11</sup> In Indiana, hemp-sourced CBD for any use is legal, but marijuana-sourced CBD for medical use and for recreational use are both illegal as of 2020.<sup>11</sup> Wisconsin allows hemp-sourced CBD for any use, and marijuana-sourced CBD for medical use, but marijuana-sourced CBD for recreational use is still illegal as of January 2020.<sup>11</sup> Sales of CBD in the United States hovered near half a billion dollars in 2018, and this number is expected to increase to near \$1.8 billion by 2022.<sup>12</sup> In 2019, Illinois had approximately \$78 million in CBD sales, and Indiana had

approximately \$27 million in CBD sales.<sup>13</sup>

Educators have emphasized an increased need to educate medical professionals (this includes physicians, pharmacists, and nurses) on medical marijuana and related topics to help ensure patient safety.<sup>14</sup> In 2018, The University of Pittsburgh surveyed pharmacy schools on the inclusion of medical marijuana in their curricula. Of the schools that participated, 62% stated that they included medical marijuana content in their curriculum, and 23% planned to incorporate it within the next year.<sup>15</sup> The University of Maryland School of Pharmacy was one of the first in the country to offer a master's degree in medical cannabis science and therapeutics,

covering policy, direct patient care, pharmacology, and chemistry of different cannabinoids such as THC and CBD.<sup>14</sup> A nationwide 2019 study of pharmacy students found that more than 70% of the respondents wanted to be involved in the marijuana dispensing process, yet only 15% stated that they had received formal education regarding medical cannabis, and only 15% received passing scores when their cannabis knowledge was assessed.<sup>16</sup>

To date, several previous studies have assessed the knowledge, confidence, and attitudes of pharmacy students towards medical marijuana.<sup>16-18</sup> These studies showed a lack of knowledge among pharmacy students regarding adverse

**TABLE 2. Knowledge Assessment About OTC-CBD Products**

Knowledge Assessment		Overall N = 347	IL <sup>^</sup> Schools N=154	IN <sup>^</sup> School N= 51	WI <sup>^</sup> School N= 142	*p-value
It is likely for OTC-CBD products that contain no more than 0.3% THC to exert euphoric effects on the user? [Correct Response: No]	Answered Correctly N (%)	224 (65.1)	91 (59.5)	32 (65.8)	101 (72.1)	0.196
	Answered Incorrectly N (%)	53 (15.4)	27 (17.7)	10 (19.6)	16 (11.4)	
	Unsure N (%)	67 (19.5)	35 (22.9)	9 (17.7)	23 (16.4)	
OTC-CBD containing products (i.e. oils, capsules, topicals) are FDA approved products. [Correct Response: False]	Answered Correctly N (%)	261 (75.2)	101 (65.6)	45 (88.2)	115 (80.9)	0.001
	Answered Incorrectly N (%)	41 (11.8)	29 (18.8)	4 (7.8)	8 (5.6)	
	Unsure N (%)	45 (13)	24 (15.6)	2 (3.9)	19 (13.4)	
According to the World Health Organization's Expert Committee on Drug Dependence, CBD is generally well tolerated in humans with a good safety profile. [Correct Response: True]	Answered Correctly N (%)	202 (58.4)	95 (61.7)	30 (58.8)	77 (64.6)	0.622
	Answered Incorrectly N (%)	28 (8.1)	10 (6.5)	3 (5.9)	15 (10.6)	
	Unsure N (%)	116 (33.5)	49 (31.8)	18 (35.3)	49 (34.7)	
Under the Federal Controlled Substances Act, cannabis derived CBD prescription drugs that contain no more than 0.3% THC are classified under what drug schedule? [Correct Response: Schedule V]	Answered Correctly N (%)	125 (36)	41 (26.6)	25 (49.0)	59 (41.6)	0.003
	Answered Incorrectly N (%)	222 (64)	113 (73.4)	26 (50.9)	83 (58.5)	
OTC-CBD has been well studied for which of the following medical conditions? [Correct Response: None of the above]	Answered Correctly N (%)	147 (42.4)	58 (37.7)	26 (50.9)	63 (44.4)	0.204
	Answered Incorrectly N (%)	200 (57.6)	96 (62.3)	25 (49.0)	79 (55.6)	

\*Chi-square/Fisher Exact Test. <sup>^</sup>IL = Illinois, IN = Indiana, WI = Wisconsin

reactions, indications, state laws, and confidence in their ability to counsel patients on medical marijuana.<sup>17,18</sup> A nationwide study also indicated that, regardless of the legal status of marijuana, students lacked knowledge and preparation to counsel and educate on medical marijuana.<sup>16</sup> However, these studies focused on medical marijuana, but not CBD products, and were at times limited to a single school of pharmacy. Only one study assessed the knowledge and attitudes of Illinois pharmacists, but not pharmacy students, about OTC-CBD products. The study noted that the majority of those surveyed did not feel comfortable answering questions about OTC-CBD products and were wary about product safety and quality.<sup>19</sup> Therefore, this study focused specifically on CBD and OTC-CBD products and included students from

four pharmacy schools in three different states in the Midwest.

## Objectives

The primary objectives of this study were to assess pharmacy students' (1) baseline knowledge of CBD and self-rated competency of OTC-CBD product pharmacotherapy, (2) concerns about OTC-CBD product safety and level of preparedness with answering questions about the product, and (3) current and future education needs. Secondly, we assessed whether there were state-based differences in responses to the survey.

## Methods

### Study Design

This observational, cross-sectional study obtained information from four schools of pharmacy located in Illinois

(two public institutions), Indiana (one private institution), and Wisconsin (one public institution). An anonymous, online, quantitative survey was provided to the students using Qualtrics. An email was sent to first- through fourth-year pharmacy students on August 15, 2019, with a survey link inviting them to participate in the study. Three follow-up emails were sent out at three-week intervals after the initial email as a reminder to participate in the study before the survey window ended on October 31, 2019.

The Southern Illinois University at Edwardsville Institutional Review Board reviewed and deemed the study to be exempt (Protocol #416).

### Survey

The 23-question survey was developed using previous literature that used surveys

to gain pharmacist and student perspectives on marijuana-containing products.<sup>17,20</sup> The survey was assessed for face validity by four pharmacy students, one each from professional year one through professional year four. Additionally, two faculty members assessed the survey for completeness. The survey was also shared with the individual school coordinators who were in charge of disseminating the survey. Minor modifications to the survey were made based on the feedback received.

The final survey assessed student demographics; objective 1: knowledge regarding CBD products and laws (6 questions), and competency in pharmacotherapy of CBD products (3 questions); objective 2: level of preparedness for counseling patients and other healthcare providers on OTC-CBD products (2 questions), and concerns regarding the use of OTC-CBD products (5 questions); and objective 3: current and future educational needs about CBD products.

### Study Sample

The study included first- through fourth-year pharmacy students enrolled at four schools of pharmacy in the Midwest. A total of 1,570 students were invited to participate in the survey.

### Statistical Analysis

Descriptive statistics including percentages were calculated for all survey

items using STATA 16 (StataCorp. 2019. Stata Statistical Software: Release 16. College Station, TX: StataCorp LLC). Additionally, chi-square or Fisher's exact test were used to assess whether there was an overall difference in the responses among the three states.

Objective 1: Pharmacy students' knowledge of OTC-CBD products was assessed as correct/incorrect based on the response provided. Self-assessed competency in pharmacotherapy of OTC-CBD products was assessed by aggregating the responses to a 6-point Likert-type scale (strongly/mostly/slightly competent, strongly/mostly/slightly incompetent).

Objective 2: Concerns about the safety of OTC-CBD products was assessed by aggregating the responses to a 5-point Likert-type scale (no concern, slightly/somewhat concerned, moderately/highly concerned). Level of preparedness for counseling patients and discussing with healthcare providers was assessed by aggregating the responses to a 5-point Likert-type scale (not at all, slightly/somewhat, moderately/highly prepared).

Objective 3: Current and future interest in CBD-related education was assessed using a preference scale (not preferred, preferred, most preferred).

## Results

Of the 1,570 invited participants, responses were received from 349 students, of which 2 were incomplete and excluded.

A total of 347 responses were included in the study, representing a 22.1% response rate. Table 1 displays the demographics of the respondents. A majority of the participants were 18-23 years old, and about half worked in a chain community pharmacy setting. Students were evenly spread among the four professional years (Professional Year 1 = 24.5%, Professional Year 2 = 24.5%, Professional Year 3 = 24.5%, Professional Year 4 = 26.5%).

### Objective 1: Knowledge assessment and self-rated competency of OTC-CBD product pharmacotherapy

Overall, the knowledge assessment indicated that most participants correctly answered the questions regarding CBD side effects, FDA approval, and safety profile, but a majority incorrectly answered questions relating to drug scheduling, medical conditions, and routes of administration (Table 2). A large majority of respondents rated themselves as incompetent in all aspects of OTC-CBD pharmacology (Table 3). An overall difference was noted among students in different states, in correctly responding to the question about OTC-CBD products being FDA approved. A lower percentage of students in Illinois schools correctly noted that OTC-CBD products are not FDA approved, followed by Wisconsin and Indiana (65.6%, 80.9%, 88.2% respectively,  $p = 0.001$ ) (Table 2).

**TABLE 3. Self-Reported Competency in Pharmacotherapy Knowledge of CBD Products**

Please rate your competency level in over the counter cannabidiol (CBD) product pharmacotherapy knowledge in the following areas.		Overall N = 347	IL <sup>^</sup> Schools N=154	IN <sup>^</sup> School N= 51	WI <sup>^</sup> School N= 142	*p-value
Pharmacology	Competent N (%)	92 (26.5)	44 (28.6)	13 (25.5)	35 (24.7)	0.735
	Incompetent N (%)	255 (73.5)	110 (71.4)	38 (74.1)	107 (75.4)	
Pharmacokinetics	Competent N (%)	67 (19.4)	33 (21.4)	5 (9.8)	29 (20.4)	0.173
	Incompetent N (%)	279 (80.6)	121 (78.6)	46 (90.2)	113 (79.6)	
Pharmacodynamics	Competent N (%)	65 (18.8)	29 (18.8)	6 (11.8)	30 (21.1)	0.339
	Incompetent N (%)	280 (81.2)	125 (81.2)	45 (88.2)	112 (78.9)	

\*Chi-square/Fisher Exact Test. <sup>^</sup>IL = Illinois, IN = Indiana, WI = Wisconsin

**TABLE 4. Safety Concerns and Level of Preparedness about OTC-CBD Products**

<i>Concerns</i>		<i>Overall N = 347</i>	<i>IL<sup>^</sup> Schools N=154</i>	<i>IN<sup>^</sup> School N= 51</i>	<i>WI<sup>^</sup> School N= 142</i>	<i>*p-value</i>
Safety of over the counter CBD product use (drug interactions, contraindications, adverse reactions)	No Concern N (%)	26 (7.5)	10 (6.5)	7 (13.7)	9 (6.3)	0.176
	Slightly, Somewhat Concerned N (%)	142 (40.9)	71 (46.1)	19 (37.3)	52 (36.6)	
	Moderately, Highly Concerned N (%)	179 (51.6)	73 (47.4)	25 (49.0)	81 (57.0)	
Consistency in quality of over the counter CBD products	No Concern N (%)	12 (3.5)	7 (4.6)	1 (2.0)	4 (2.8)	0.005
	Slightly, Somewhat Concerned N (%)	85 (24.5)	52 (33.8)	8 (15.7)	25 (17.6)	
	Moderately, Highly Concerned N (%)	250 (72.1)	95 (61.7)	42 (82.4)	113 (79.6)	
Federal regulation related to over the counter CBD products	No Concern N (%)	20 (5.8)	12 (7.8)	3 (5.6)	5 (3.5)	0.564
	Slightly, Somewhat Concerned N (%)	110 (31.7)	50 (32.5)	14 (27.5)	46 (32.4)	
	Moderately, Highly Concerned N (%)	217 (62.5)	92 (59.7)	34 (66.7)	91 (64.1)	
Psychoactive effects and potential addiction from over the counter CBD product use	No Concern N (%)	76 (21.9)	30 (19.5)	16 (31.4)	30 (21.1)	0.074
	Slightly, Somewhat Concerned N (%)	144 (41.5)	57 (37.0)	19 (37.3)	68 (47.9)	
	Moderately, Highly Concerned N (%)	127 (36.6)	67 (43.5)	16 (31.4)	44 (31.0)	
Limited evidence of therapeutic benefits from over the counter product use	No Concern N (%)	24 (6.9)	12 (7.8)	2 (3.9)	10 (7.0)	0.234
	Slightly, Somewhat Concerned N (%)	120 (34.6)	61 (39.6)	19 (37.3)	40 (28.2)	
	Moderately, Highly Concerned N (%)	203 (58.5)	81 (52.6)	30 (58.8)	92 (64.8)	
<b>Level of Preparedness</b>						
Patient Counseling	Not at all Prepared N (%)	196 (56.5)	95 (61.7)	27 (52.9)	74 (52.1)	0.463
	Slightly, Somewhat, Prepared N (%)	126 (36.3)	49 (31.8)	19 (37.3)	58 (40.9)	
	Moderately, Highly Prepared N (%)	25 (7.2)	10 (6.5)	5 (9.8)	10 (7.4)	
Discussing with a Healthcare Provider	Not at all Prepared N (%)	211 (61.2)	102 (67.1)	31 (60.8)	78 (54.9)	0.251
	Slightly, Somewhat, Prepared N (%)	107 (31)	39 (25.7)	15 (29.4)	78 (54.9)	
	Moderately, Highly Prepared N (%)	27 (7.8)	11 (7.2)	5 (9.8)	53 (37.3)	
*Chi-square/Fisher Exact Test. <sup>^</sup> IL = Illinois, IN = Indiana, WI = Wisconsin						

**TABLE 5. Current and Future Education**

<i>Concerns</i>		<i>Overall N = 347</i>	<i>IL<sup>^</sup> Schools N=154</i>	<i>IN<sup>^</sup> School N= 51</i>	<i>WI<sup>^</sup> School N= 142</i>	<i>*p-value</i>
Is there a required course at your school of pharmacy that covers cannabidiol (CBD) in the curriculum?	<b>Yes N (%)</b>	49 (14.1)	6 (3.9)	4 (7.8)	39 (27.5)	<b>0.001</b>
	<b>No N (%)</b>	171 (49.3)	95 (61.7)	25 (49.0)	51 (35.9)	
	<b>Unsure N (%)</b>	127 (36.6)	53 (34.4)	22 (43.1)	52 (36.6)	
Would you like to see cannabidiol (CBD) related material incorporated into your school of pharmacy's curriculum? <b>Answered only by students who answered "No/Unsure" above</b>	<b>Yes N (%)</b>	272 (91.3)	138 (93.2)	42 (89.4)	92 (89.3)	0.327
	<b>No N (%)</b>	8 (2.7)	4 (2.7)	0 (0.0)	4 (3.9)	
	<b>Unsure N (%)</b>	18 (6.0)	6 (4.1)	5 (10.6)	7 (6.8)	
Have you received any prior formal education (for example, pharmacy school courses, national or local meetings, webinars, etc.) on the use of cannabidiol (CBD)?	<b>Yes N (%)</b>	83 (23.9)	26 (16.9)	8 (15.7)	49 (34.5)	<b>0.001</b>
	<b>No N (%)</b>	252 (72.6)	123 (79.9)	43 (84.3)	86 (60.6)	
	<b>Unsure N (%)</b>	12 (3.5)	5 (3.3)	0 (0.0)	7 (4.9)	
Pharmacists should have special training before dispensing and/or counseling on cannabidiol (CBD)-containing over the counter products.	<b>Yes N (%)</b>	284 (82.1)	129 (84.3)	40 (78.4)	115 (81.0)	0.130
	<b>No N (%)</b>	36 (10.4)	17 (11.1)	8 (15.7)	11 (7.8)	
	<b>Unsure N (%)</b>	26 (7.5)	7 (5.6)	3 (5.9)	16 (11.3)	

*\*Chi-square/Fisher Exact Test. <sup>^</sup>IL = Illinois, IN = Indiana, WI = Wisconsin*

**Objective 2: Concerns about OTC-CBD product safety and level of preparedness with answering questions about the product**

When asked about safety concerns with OTC-CBD products, the biggest concern overall was with the consistency in quality of OTC-CBD products, with 72% of students being moderately/highly concerned. Most survey participants didn't feel prepared to counsel patients or to provide accurate and reliable information to a healthcare provider about OTC-CBD products (Table 4). When comparing results among the three states, a statistically significant overall difference was noted for the concern about the consistency in quality of OTC- CBD products. Indiana had the highest percentage of moderately/ highly concerned pharmacy students, followed by Wisconsin and Illinois (82.4%, 79.6%, 61.7% respectively, p = 0.005) (Table 4).

**Objective 3: Current and future education**

About 85% of participants said their required coursework didn't have CBD-related content, or were unsure whether their curriculum covered CBD in a required course. Of these, 91.3% stated that they would like to see CBD-related material incorporated into their school of pharmacy's curriculum (Table 5). The most popular topics that participants would most like to learn about were the pharmacotherapy and safety of CBD products. The top two primary resources that students used to find CBD-related information were Internet searches and pharmacy organizations (results not shown). When comparing responses among the three participating states, Illinois and Indiana had the largest number of students state that they didn't have or were unsure if they had a required course in their curriculum on the topic, followed by Wisconsin (96.1%, 92.0%, 72.5% respectively, p = 0.001) (Table 5).

**Discussion**

Previous studies have reported on pharmacy students' knowledge and perceptions of medical marijuana, indicating a lack of knowledge of state laws, and lack of confidence in students' ability to counsel and educate patients.<sup>16-18</sup> This study focuses specifically on OTC-CBD products (less than 0.3% THC), which are widely available in pharmacies as well as in specialty and grocery stores,<sup>6-8</sup> rather than medical marijuana (more than 0.4% THC), and provides a baseline of knowledge regarding CBD among pharmacy students. The results of this study are similar to those in the medical marijuana studies,<sup>16-18</sup> suggesting a significant lack of knowledge regarding all aspects of CBD-related pharmacotherapy. A lack of confidence among pharmacy students for counseling and educating on CBD, as well as wariness regarding product safety and quality, were observed. A recent study that assessed CBD knowledge among practicing Illinois pharmacists noted similar

trends.<sup>19</sup> These results indicate a perceived need for pharmacy schools across the country to incorporate or provide more enhanced education about CBD into their curriculum.

The Federal Farm Bill legislation of 2018 changed the scheduling of CBD prescription drugs containing no more than 0.3% THC from Schedule I to Schedule V.<sup>3,8</sup> Currently, Epidiolex (manufactured by Greenwich Biosciences) is the only FDA-approved prescription CBD-containing product and is dispensed as an oral solution.<sup>21</sup> However, a majority of the students in this study could not correctly identify the drug scheduling for CBD prescription drugs that contain no more than 0.3% THC. Another common misconception is that CBD products are unsafe and produce euphoric effects. Per a World Health Organization report, CBD products containing less than 0.3% THC are considered generally safe, have relatively low toxicity and have shown no indication of abuse or dependence potential among humans.<sup>2</sup> The psychoactive effects often associated with THC are not associated with CBD containing less than 0.3% THC.<sup>1,3</sup> However, assessing the safety and efficacy of OTC-CBD products is an ongoing venture, with many unknowns.<sup>4</sup> As this research develops, students would benefit from a targeted safety and quality discussion.

In 2018, 62% of pharmacy schools that participated in a survey stated that they included medical marijuana content in their curriculum, and 23% planned to incorporate it within the next year.<sup>15</sup> Comparatively, about 86% of the students in this survey stated that their school of pharmacy does not provide CBD education, or the student was unsure whether their curriculum included CBD education. This finding is reinforced when the majority of respondents consider themselves incompetent in the pharmacology, pharmacokinetics, and pharmacodynamics of CBD, all topics that would likely be covered in an educational course on the subject.

The differences among state laws as of 2020 could have a bearing on the results. Illinois allows hemp-sourced CBD for all uses, marijuana-sourced CBD for medical use, and marijuana-sourced CBD for

recreational use; Wisconsin allows all but marijuana-sourced CBD for recreational use; Indiana only allows hemp-sourced CBD for all uses.<sup>11</sup> While there were some overall differences noted among respondents in the three states, the trends indicated a lack of knowledge about CBD products, concerns about consistency in safety and quality, and a need for more CBD education in all three states. As the popularity and research associated with CBD continue to grow, future research opportunities could specifically focus on state laws and their impact on pharmacy curriculum and student as well as pharmacist knowledge.

A strength of this study is surveying students from multiple colleges as well as multiple states, which captures a wide variety of pharmacy students in the Midwest. Additionally, the survey was modeled after previous literature that successfully surveyed pharmacy students about cannabis, but was modified to fit the CBD framework.

A limitation of this study includes the timing of the survey, which was distributed to students from August through October 2019. The Illinois Pharmacists Association (IPhA) annual meeting, held in early October, contained educational content about CBD. Any student who attended the IPhA meeting and took this survey after the fact might have had biased responses due to the information they received at the meeting. Despite including four schools of pharmacy (from three different states), the relatively small sample size means that non-response bias cannot be entirely ruled out.

## Conclusion

A majority of students in this study felt that they were lacking in the knowledge and preparation required to safely and accurately assist patients and providers in the selection and use of OTC-CBD products. Pharmacy students in this study indicated that they would be interested in educational content focused on state and federal regulations, pharmacotherapy, and safety of CBD-related products.

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## References

1. National Center for Biotechnology Information. PubChem Compound Summary for CID 644019, Cannabidiol. <https://pubchem.ncbi.nlm.nih.gov/compound/644019>. Accessed May 10, 2019.
2. Expert Committee on Drug Dependence. Cannabidiol (CBD) Pre-Review Report. World Health Organization. [https://www.who.int/medicines/access/controlled-substances/5.2\\_CBD.pdf](https://www.who.int/medicines/access/controlled-substances/5.2_CBD.pdf). Published November 2017. Accessed May 10, 2019.
3. El-Alfy, A., 2020. Role of the pharmacist in the care of patients using cannabis. *J Am Pharm Assoc* (2003). 2020;60(3):426-428.
4. Iffland K, Grotenhermen F. An Update on Safety and Side Effects of Cannabidiol: A Review of Clinical Data and Relevant Animal Studies. *Cannabis Cannabinoid Res*. 2017;2(1):139-154.
5. Babalonis S, Haney M, Malcolm RJ, et al. Oral cannabidiol does not produce a signal for abuse liability in frequent marijuana smokers. *Drug Alcohol Depend*. 2017;172:9-13.
6. Boehm E. CVS Pharmacy, America's Largest Drug Store Chain, Will Carry CBD Products. Reason.com. <https://reason.com/2019/03/21/cvs-pharmacy-americas-largest-drug-store/>. Published March 21, 2019. Accessed May 10, 2019.
7. Tyko K. Walgreens will sell CBD products in nearly 1,500 stores. USA TODAY. <https://www.usatoday.com/story/money/2019/03/27/walgreens-sell-cbd-products-nearly-1-500-drugstores-report-says/3295939002/>. Published March 28, 2019. Updated August 16, 2019. Accessed May 10, 2019.
8. Stewart I, Kloss J, Willner N. Will Hemp-Derived CBD be Fully Legal with Passage of the 2018 Farm Bill? Not Quite. The National

- Law Review. <https://www.natlawreview.com/article/will-hemp-derived-cbd-be-fully-legal-passage-2018-farm-bill-not-quite>. Published December 4, 2018. Accessed May 10, 2019.
9. CBD Products. Walgreens. <https://www.walgreens.com/topic/promotion/cbd-faq.jsp?o=acs>. Accessed March 10, 2020.
  10. Canabido1TM. CBD Cacao-TabsTM. Canabido1TM (CBD Cannabis Oil). [https://canabido1.com/cbd-cocoa-tabs/?attribute\\_strength=100mg](https://canabido1.com/cbd-cocoa-tabs/?attribute_strength=100mg). Accessed March 10, 2020.
  11. 2020 CBD Laws by State. CBD Awareness Project. <https://www.cbdoil.org/cbd-laws-by-state/>. Published January 13, 2020. Accessed February 4, 2020.
  12. Mikulic M. Total CBD consumer sales U.S. 2014-2022. Statista. <https://www.statista.com/statistics/760498/total-us-cbd-sales/>. Published August 9, 2019. Accessed October 10, 2019.
  13. Conway J. Dollar Sales of CBD in the United States in 2019, by state. Statista. <https://www.statista.com/statistics/1065838/dollar-sales-of-us-cbd-market-by-state/>. Published May 13, 2020. Accessed May 15, 2020.
  14. Cantlupe JA. Medical Marijuana Goes Mainstream. American Association of Colleges of Pharmacy. <https://www.aacp.org/article/medical-marijuana-goes-mainstream>. Accessed February 9, 2020.
  15. Smithburger PL, Zemaitis MA, Meyer SM. Evaluation of medical marijuana topics in the PharmD curriculum: A national survey of schools and colleges of pharmacy. *Curr Pharm Teach Learn*. 2019;11(1):1-9.
  16. Moeller KE, McGuire JM, Melton BL. A nationwide survey of pharmacy students' knowledge and perceptions regarding medical cannabis. *J Am Pharm Assoc* (2003). 2019;(60)1;218-224.e3.
  17. Caligiuri FJ, Ulrich EE, Welter KJ. Pharmacy Student Knowledge, Confidence and Attitudes Toward Medical Cannabis and Curricular Coverage. *Am J Pharm Educ*. 2018;82(5).
  18. Moeller KE, Woods B. Pharmacy Students' Knowledge and Attitudes Regarding Medical Marijuana. *Am J Pharm Educ*. 2015;79(6);85.
  19. Link K, Deshpande M, Ferguson MK. Illinois Pharmacists and Over the Counter Cannabidiol Products: A Survey on Knowledge and Educational Needs. *Innov Pharm*. 2020;11(2);2.
  20. Hwang J, Arneson T, St. Peter W. Minnesota Pharmacists and Medical Cannabis: A Survey of Knowledge, Concerns, and Interest Prior to Program Launch. *P T*. 2016;41(11);716-722.
  21. EPIDIOLEX® (Cannabidiol) CV. EPIDIOLEX.com, [www.epidiolex.com/](http://www.epidiolex.com/). Accessed May 10, 2019.

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# A Retrospective, Cohort Study Evaluating the Efficacy of an Elastomeric Ropivacaine Pain Pump Used Postoperatively in Shoulder Surgery

by Stephanie Bishop, PharmD, Jessica Benjamin, PharmD, Joshua Rekoske, PharmD

A common concern for patients postoperatively is proper pain management.<sup>1-3</sup> Standard approaches to pain management include the use of opioid and non-opioid analgesics, and local anesthetics.<sup>4</sup> However, frequent opioid use can lead to adverse effects such as constipation, somnolence, and respiratory depression.<sup>5-7</sup> Adverse effects related to opioid consumption can lead to prolonged length of stay, complications such as bowel dysfunction, and can contribute to the opioid addiction crisis.<sup>8,9</sup> Thus, practitioners are rapidly turning to multi-modal pain control options to reduce overall opioid consumption in the postoperative population.<sup>10</sup>

Local anesthetics, such as ropivacaine, have been shown to increase postoperative patient comfort and have minimal systemic effects.<sup>11</sup> Due to the short half-life of local anesthetics, a non-liposomal anesthetic given in the operating room wears off within several hours.<sup>12</sup> However, if administered via a pain pump at a continuous rate, additional pain control can be provided several days post-operation. By inserting a catheter directly into a nerve sheath, the elastomeric ropivacaine pump delivers the anesthetic using a rate controller, adjusted according to patients' pain relief requirements, and a bolus option for breakthrough pain relief as necessary.<sup>13</sup>

Recent studies have shown that by using an infusion pump, ropivacaine can provide continuous pain relief, as well as potentially decrease hospital length of stay and opioid consumption, leading to cost savings for the patient and health-care system.<sup>14-16</sup>

## Abstract

The purpose of this study was to determine the impact of the elastomeric ropivacaine pump compared to standard of care based on the following characteristics: administration of pain medications inpatient and post-discharge, length of inpatient stay, and postoperative pain scores. A retrospective chart review was conducted to determine inpatient administration of opioids in the postoperative period. A standard questionnaire was used to collect the post-discharge information. A total of 52 patients were screened for inclusion criteria and 19 were included in the study group. Patients who underwent shoulder surgery and received an elastomeric ropivacaine pump required less opioids on the day of surgery (MME of 9.0 vs 9.9,  $p=0.863$ ), the day after surgery (MME of 19.81 vs 30.9,  $p=0.407$ ), and total over the 4-day period after surgery (MME 81.3 vs 88.3,  $p=0.859$ ) than those without a pump. The average length of stay for patients receiving an elastomeric ropivacaine pump was shorter (2.3 days vs 3.1 days,  $p=0.294$ ) when compared to those who did not receive a pump. When calculating the difference in pain score between day 1 and day 3, pain scores improved for patients receiving an elastomeric ropivacaine pump (-1.3 vs. -0.8,  $p = 0.728$ ) when compared to those who did not receive a pump. However, there were no statistically significant differences in outcomes. Further research with larger sample sizes are needed to confirm whether there is a difference in clinical outcomes between patients who do and do not receive an elastomeric ropivacaine pain pump post shoulder surgery.

In the summer of 2019, our institution began providing postoperative elastomeric ropivacaine pain pumps for shoulder and ankle surgeries. The cost of the pump is approximately \$500; therefore, the institution wanted to evaluate whether the pain pump had a positive impact compared to standard of care on clinical outcomes or length of stay. Thus, the purpose of this study was to determine the impact of the elastomeric ropivacaine pump in elective shoulder surgeries compared to

standard of care based on the following characteristics: administration of pain medications inpatient and post-discharge, length of inpatient stay, and postoperative pain scores.

## Methods

This was a retrospective cohort study, conducted at a 440-bed community hospital in Madison, Wisconsin over a 2-month period (January 1, 2020 through February 29, 2020.) Patients were excluded

**TABLE 1. Study Characteristics**

Characteristics	Pain Pump (n,%)	Standard of Care (n,%)
Number of patients	10 (53)	9 (47)
<b>Sex:</b>		
Male	2 (20)	3 (33)
Female	8 (80)	6 (66)
<b>Age (years):</b>		
30-50	1 (10)	1 (11)
51-70	4 (40)	3 (33)
71-90	5 (50)	4 (44)
>91	0	1 (11)
<b>Type of Shoulder Surgeries:</b>		
Total Shoulder Arthroplasty	3 (30)	0
Reverse Total Shoulder Arthroplasty	4 (40)	5 (56)
Removal Of Shoulder Arthroplasty	1 (10)	0
Arthroplasty Total Shoulder Revision	2 (20)	0
Open Reduction Shoulder	0	1 (11)
Shoulder Sensory Axillary And Suprascapular Radio Frequency Ablation	0	1 (11)
Open Reduction Internal Fixation	0	2 (22)

from evaluation if they were unable to answer the questionnaire due to invalid phone number, unavailability, or if they had complicated health conditions that prolonged length of stay more than 10 days, unrelated to their shoulder surgery (Figure 1). In addition, the decision was made to exclude ankle surgeries given the lack of pain pump usage by surgeons for this population. The project was reviewed and approved by the institutional review board (IRB).

A background literature review using PubMed was conducted to identify current recommendations for pain management postoperatively, and a review of current practices was completed to create a standardized, patient-friendly questionnaire (Appendix A). The questionnaire included a subset of questions from Fujii et al.<sup>17</sup>

The current practice at the institution was as follows: On day 0 post-operation,

the surgeon determined if a patient required a pain pump. If so, the patient received a 0.2% ropivacaine pump on the day of discharge, set at an initial basal rate of 5 mL/hr with the option to administer a bolus dose of 5 mL once per hour. The option to change the rate and bolus was turned off immediately prior to the patient's discharge to prevent the patient from inadvertently changing the rate or self-administering any boluses. The patients were expected to wear the pain pump around the clock and received a fanny pack and instructions prior to discharge. The product contained enough ropivacaine in the pump to last a patient approximately five days.

After the patient was discharged home, a retrospective chart review using Epic was completed, and the following patient data was collected: age, sex, length of hospital stay and type of surgery (Table 1). Then, using the approved questionnaire, discharged individuals were contacted approximately one week after surgery to collect

additional information regarding opioid medication use post-operation (name, strength, directions and quantity); use of an elastomeric ropivacaine pain pump; and pain score (on a numeric rating scale of 0-10, where 0 is no pain and 10 is severe pain) on postoperative day 1 and day 3. Four additional questions were asked of the patients who received an elastomeric pain pump to collect qualitative data on the patient's experience related to using the pump.

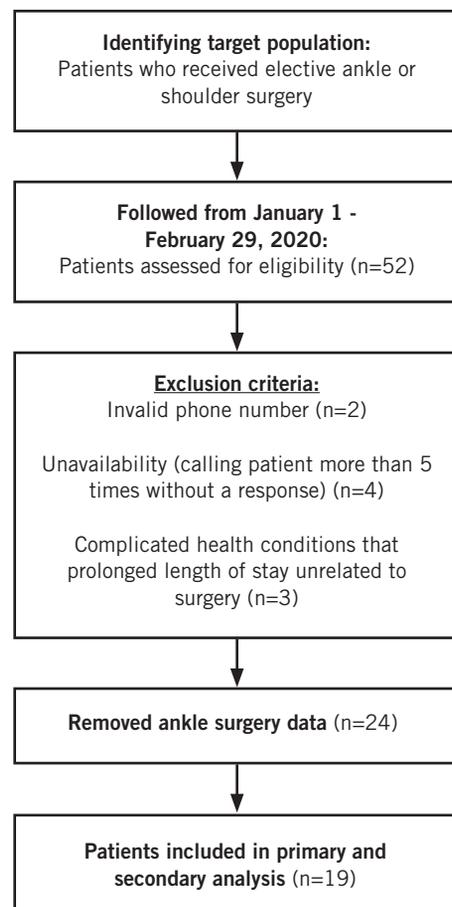
The primary outcome of this study was the difference in total opioid medication use postoperatively days 0 through 3 between patients who received ropivacaine elastomeric pain pumps to standard of care (i.e. no pump at discharge). Using the conversion factors recommended by the Washington State Agency Medical Directors' Group, an MME was calculated

for each opioid medication taken postoperatively to standardize the amount of opioids administered, as different opioids were prescribed post-operation based on surgeon preference.<sup>18</sup> Secondary outcomes were length of inpatient stay and pain score difference between postoperative day 1 and day 3.

**Data Analysis**

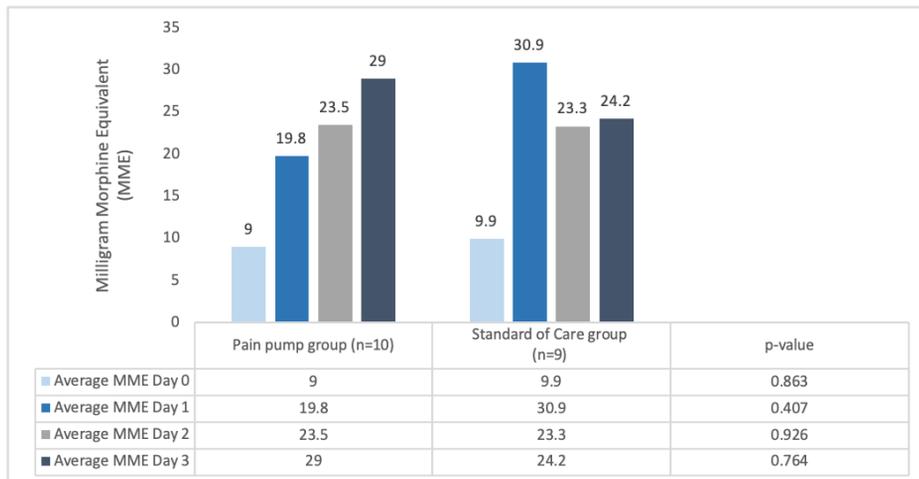
Sample size was determined in Minitab with power analysis set at 80% to detect a total difference in Milligram Morphine Equivalent (MME) of 50 between the two comparison groups for a sample size of 70 patients. A two-sided t-test was performed with statistical significance set at p<0.05. Protected health information (PHI) was kept within an encrypted computer database housed within the hospital network system. All PHI identifiers were removed during data analysis.

**FIGURE 1. Study Inclusion and Exclusion Criteria**

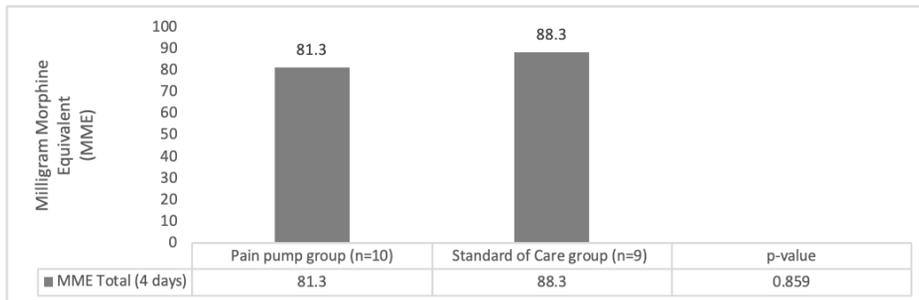


\*The complications included an additional infection requiring incision and drainage and severe anemia requiring infusions.

**FIGURE 2A. Average Opioid use Post-Operation (Milligram Morphine Equivalent Day 0, 1, 2 and 3)**



**FIGURE 2B. Average Opioid use Post-Operation (Milligram Morphine Equivalent Total)**



## Results

Fifty-two patients were identified who were 18 years of age or older and underwent an elective ankle or shoulder surgery during the study period. Ultimately, 19 patients who underwent elective shoulder surgery were included in this study; 10 received a ropivacaine elastomeric pain pump, and 9 received standard of care or no pump at discharge. The average age of patients included in the study group was 69 years old (range 38-96 years old) and the majority were female (74%).

For the primary outcome of this study, patients who underwent a shoulder surgery and received an elastomeric ropivacaine pain pump required less opioids on the day of surgery (MME of 9.0 vs 9.9,  $p=0.863$ ), the day after surgery (MME of 19.8 vs 30.9,  $p=0.407$ ) and total over the 4-day period after surgery (MME 81.3 vs 88.3,  $p=0.859$ ) than those receiving standard of care (Figures 2a and 2b). The elastomeric ropivacaine pain pump group required

more opioids on day 2 (MME of 23.5 vs 23.3,  $p=0.926$ ) and day 3 (MME of 29 vs 24.2,  $p=0.764$ ) than the standard of care group. In addition, the number of patients who were opioid free by day 3 was only 10% in the pain pump group, but it was 44.4% in the standard of care group.

The secondary outcome of mean length of stay for patients receiving an elastomeric ropivacaine pain pump was shorter (2.3 vs 3.1,  $p=0.294$ ) than the standard of care group (Figure 3). When calculating the difference in pain score postoperative day 1 from day 3 (Figure 4), there was a larger reduction in pain score for patients

receiving an elastomeric ropivacaine pain pump (-1.3 vs. -0.8,  $p = 0.728$ ) when compared to the standard of care group.

Using the standardized questionnaire (Appendix A), additional qualitative data was collected for the patients who received elastomeric ropivacaine pain pumps. Most patients said their pain was “Very Well Controlled” (50%) or “Well Controlled” (40%) since their surgery, while 10% said “Poorly Controlled” and 0 patients said “Very Poorly Controlled.” When asked, “After surgery, were you given instructions on how to manage your pain other than using a prescription pain medication?” 40% of patients said “Yes” while 60% said “No.” All 10 patients felt they received enough information to manage their pump at home. Overall, the majority felt that the pump was beneficial in controlling their pain (70%). General comments regarding the patient experience are summarized in Table 2. The overall impression based on patient comments appeared to be mixed, with some in favor of the pump but others not as convinced.

## Discussion

Patients who underwent an elective shoulder surgery and received an elastomeric ropivacaine pain pump required less opioids on the day of surgery, the day after surgery, and total over the 4-day period after surgery than the standard of care group. However, this difference was not statistically significant along with length of stay and reduction in pain score, and the overall difference in 4-day outcome was not clinically significant. The average length of stay for patients receiving an elastomeric ropivacaine pump was shorter when compared to standard of care. The reduction in pain score between postoperative day 1 and day 3 was larger for patients receiving a pain pump compared to standard of care.

**TABLE 2. Patient Feedback on User Pump Experience**

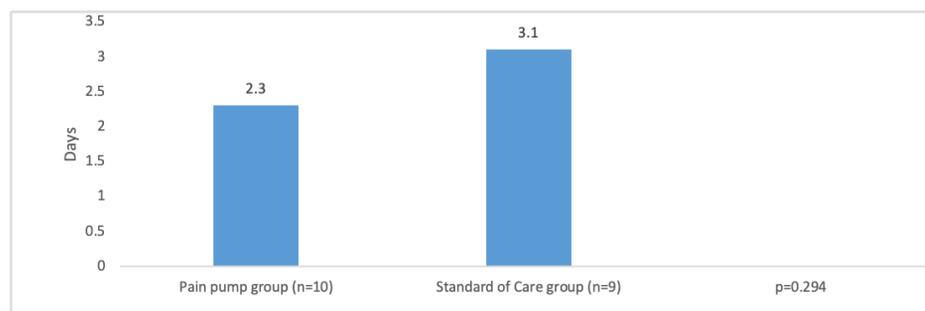
Positive Comments	Negative Comments
“Everyone should use the pump” “Pump is awesome”	“Liked it [the pump] but cumbersome” “Pain pump didn’t work. No pain relief. Not functioning correctly.” “Pump did not help any. Maybe the nerve block was not in the right place?” “I was in severe pain, the pump didn’t work. They took it out” “The anesthesiologists seem to have mixed opinions on the pump”

Previous studies have also evaluated the use of an infusion pump in reducing clinical outcomes after various surgeries. Forastiere and colleagues investigated 0.5% continuous ropivacaine infusion post open nephrectomy and found a clinically significant reduction in visual analogue scale (VAS) pain scores at 48 hours (0 vs 1.1) on a 10-point scale, morphine consumption over the first 48 hours post operation (11.5 vs 21.8 mg), and mean length of hospitalization (2.1 vs 3.2 days) in the ropivacaine group as compared to 0.9% NaCl.<sup>14</sup> Similarly, Gómez-Cardero et al. found a reduction in mean length of hospital stay (5.72 vs 7.32 days), pain intensity measured by VAS (3.2 vs 5.2) and opioid use requirement on day 1 (14% vs 38%), day 2 (4% vs 22%) and day 3 (0% vs 3%) post total knee arthroplasty (TKA) in those receiving 0.2% ropivacaine as compared to saline.<sup>16</sup> In addition, Fujii and colleagues created a questionnaire to identify opioid prescribing and use patterns after surgery to inform evidence-based practices. They found that 76% of patients received an opioid after surgery with a median MME use of 24. Only 18% of patients received disposal instructions, while 84% of all patients received instructions on non-opioid strategies.<sup>17</sup>

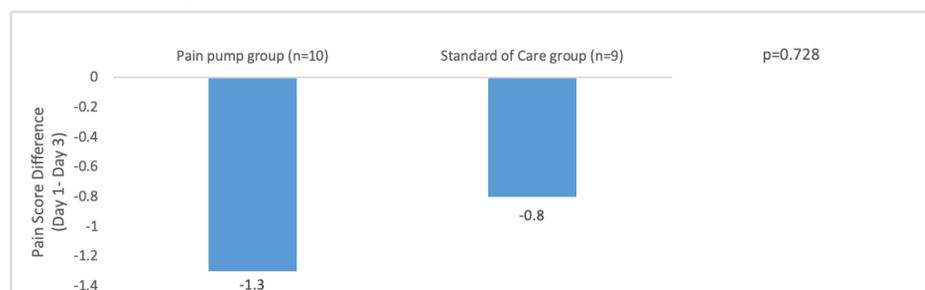
Our institution received mixed results regarding patient experience using the pain pump. Per the questionnaire, the majority of ropivacaine pain pump patients said their pain was well controlled. Interestingly, half of the ropivacaine pump patients said they were not given instructions on how to manage their pain other than using a prescription pain medication after surgery. This suggests an opportunity to improve patient education on how to manage pain other than using a pain medication, such as ice or heat modalities. Though this information might have been in the discharge instructions, this might have not been covered verbally by a member of the care team prior to discharge.

All patients felt they received enough information to manage their pump at home, and the majority felt that the pump was beneficial in controlling their pain. However, 3 patients felt the pump did not work because the pump was not functioning correctly, or it was not inserted into the correct location. Further

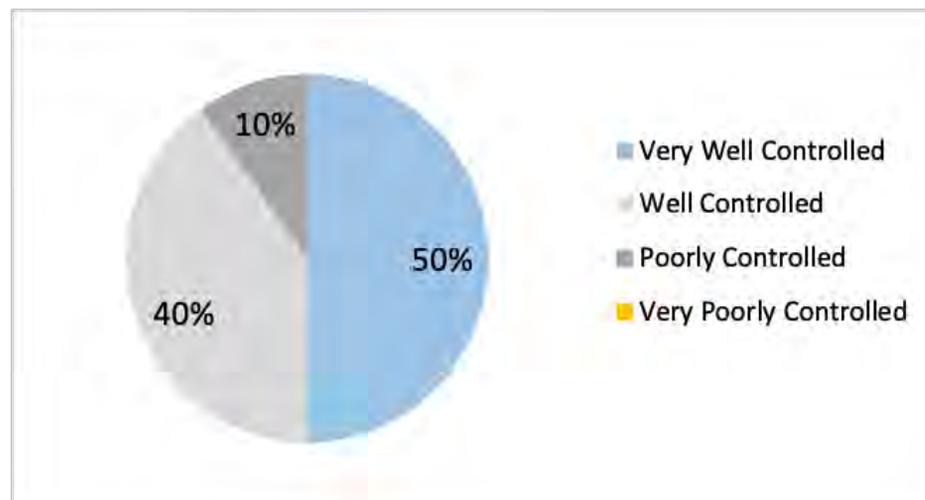
**FIGURE 3. Average Length of Stay**



**FIGURE 4. Average Difference in Pain Score**



**FIGURE 5. When asked “How well has your pain been controlled since your surgery?”**



investigation will need to be done to understand the functionality of the pump to ensure no errors occur in the future. Additionally, creating a diagram to outline the ropivacaine pump workflow might improve efficiency and eliminate staff confusion regarding this process.

Ultimately, the study was unable to collect a large enough sample size to achieve 80% power. The reasons for this are twofold: removal of ankle surgery patient data, and shorter duration than anticipated for data collection. Unfortunately, out of 24 elective ankle surgeries, only one patient ultimately received a ropivacaine pain

pump, so this population was removed from final evaluation. Additionally, due to the COVID pandemic, elective surgeries were cancelled in early March, which significantly impacted data collection.

### Limitations

There are several limitations to this study. As this was a retrospective evaluation, there was no opportunity to prospectively randomize patients. Additionally, there could be variance in postoperative pain due to variation in surgical technique and type of shoulder surgery. The small sample size decreases the ability to interpret the

results and generate statistically significant findings. Information about non-opioid analgesia medication was not collected due to patient difficulty recalling over-the-counter medication regimens and dosing. This could be a confounding factor affecting opioid consumption and pain scores. Lastly, post-discharge information related to opioids administered and pain scores were based off of patient memory and thus could be unreliable.

## Conclusion

This study evaluated the impact of a postoperative elastomeric ropivacaine pain pump on opioid use, length of stay, and pain score for patients post shoulder surgery compared to standard of care. Based on the information presented in this study, the institution will be reconsidering the use of elastomeric ropivacaine pain pumps given the limited impact it had on pain scores, opioid use, and length of stay compared to standard of care. From the small sample, it appears that the pain pumps add additional cost without clear benefit on clinical outcomes. Overall, some patients did seem to have a positive impression of the benefits of the pain pump. Further research with larger sample sizes is needed to confirm whether there is a difference in clinical outcomes for patients who use elastomeric ropivacaine pain pumps postoperatively compared to standard of care.

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## References

1. Gan TJ. Poorly controlled postoperative pain: prevalence, consequences, and prevention. *J Pain Res.* 2017;10:2287-2298.
2. Gan TJ, Habib AS, Miller TE, White W, Apfelbaum JL. Incidence, patient satisfaction, and perceptions of post-surgical pain: results from a US national survey. *Curr Med Res Opin.* 2014;30(1):149-160.
3. Institute of Medicine. Relieving pain in America: a blueprint for transforming prevention, care, education, and research. Washington: National Academies Press; 2011.
4. Chou R, Gordon D, de Leon-Casasola OA, et al. Guidelines on the management of postoperative pain. *J Pain.* 2016;17(2):131-157.
5. Benyamin R, Trescot AM, Datta S, et al. Opioid complications and side effects. *Pain Physician.* 2008;11(suppl 2):S105-S120.
6. Dahan A, Aarts L, Smith TW. Incidence, reversal, and prevention of opioid-induced respiratory depression. *Anesthesiology.* 2010;112(1):226-238.
7. Schumacher MA, Basbaum AI, Way WL. Opioid analgesics & antagonists. In: Katzung BG, Masters SB, Trevor AJ, eds. *Basic & Clinical Pharmacology.* 12th ed. New York, NY: McGraw-Hill Medical; 2012.
8. Grunkemeier DM, Cassara JE, Dalton CB, Drossman DA. The narcotic bowel syndrome: clinical features, pathophysiology, and management. *Clin Gastroenterol Hepatol.* 2007;5(10):1126-1122.
9. Kessler ER, Shah M, Gruschus SK, Raju A. Cost and quality implications of opioid-based postsurgical pain control using administrative claims data from a large health system: opioid-related adverse events and their impact on clinical and economic outcomes. *Pharmacotherapy.* 2013;33(4):383-391.
10. Horsley RD, Vogels ED, McField DAP, et al. Multimodal postoperative pain control is effective and reduces opioid use after laparoscopic roux-en-y gastric bypass. *Obes Surg.* 2019;29(2):394-400.
11. Zink W, Graf BM. The toxicity of local anesthetics: the place of ropivacaine and levobupivacaine. *Curr Opin Anaesthesiol.* 2008;21(5):645-650.
12. Kuthiala G, Chaudhary G. Ropivacaine: a review of its pharmacology and clinical use. *Indian J Anaesth.* 2011;55(2):104-110.
13. Ilfeld BM, Enneking FK. A portable mechanical pump providing over four days of patient-controlled analgesia by perineural infusion at home. *Reg Anesth Pain Med.* 2002;27(1):100-104.
14. Forastiere E, Sofra M, Giannarelli D, Fabrizi L, Simone G. Effectiveness of continuous wound infusion of 0.5% ropivacaine by On-Q pain relief system for postoperative pain management after open nephrectomy. *Br J Anaesth.* 2008;101(6):841-847.
15. Joshi GP, Ogunnaike BO. Consequences of inadequate postoperative pain relief and chronic persistent postoperative pain. *Anesthesiol Clin North Am.* 2005;23(1):21-36.
16. Gómez-Cardero P, Rodríguez-Merchán EC. Postoperative analgesia in TKA: ropivacaine continuous intraarticular infusion. *Clin Orthop Relat Res.* 2010;468(5):1242-1247.
17. Fujii MH, Hodges AC, Russell RL, et al. Post-discharge opioid prescribing and use after common surgical procedures. *J Am Coll Surg.* 2018;226(6):1004-1012.
18. Washington State Agency Medical Directors' Group. Interagency guideline on prescribing opioids for pain. 2015.

# Appendix A: Patient Telephone Questionnaire

Hello, I'm trying to reach [patient's name]. My name is [researcher's name] and I am a pharmacist. We are doing a research study about pain control after surgery. The study is quite simple, it involves asking you some questions about your pain control over the past week and should take less than 10 minutes. You were identified as a potential candidate for this study based on a limited review of your medical record. Your answers will be kept confidential and will not change your care in any way. You may choose to stop participating at any time during the phone survey.

1. Name
2. DOB
3. Would you like to take part in this study? (Y/N)
4. How well has your pain been controlled since your surgery? (very well controlled, well controlled, poorly controlled, very poorly controlled)
5. After surgery, were you given instructions on how to manage your pain other than using a prescription pain medication? (Y/N)
6. Did the instructions include using acetaminophen (Tylenol), ibuprofen (Advil, Motrin) or naproxen (Aleve)?
7. After surgery, were you given a prescription pain medication to take at home? (Y/N)
8. What was the name of this or these medication(s)? (name)
9. Is the pill bottle available to help answer some of our questions? (Y/N)
10. How many pills were you prescribed? (#)
11. Have you used any of this pain medication? (Y/N)
12. Are you still taking this pain medication? (Y/N)
13. How many pills are you taking a day? (#)
14. How many pills do you have left? (#)
15. If 0, did you call a doctor for refill on pain med? (Y/N/IDK)
16. What was your pain level the 1st day after surgery? (scale 0-10, 0=no pain, 10=severe pain)
17. What was your pain level on day 3? (scale 0-10)
18. Do you feel you received enough info to manage your pump at home? (Y/N/NA)
19. Do you feel the pump was beneficial in controlling your pain? (Y/N/NA)
20. What questions do you have?

Thank you for taking the time to talk with me today. Hope you have a great rest of your day.

## The Consideration of At-Home Administration of Omalizumab

by Anna K Lattos, 2021 PharmD Candidate, Kate Hartkopf PharmD, BCACP, James Langley PharmD, MS

Part of every pharmacist's job involves selecting the safest medication regimen to fit each patient's medical needs and achieve compatibility with individual lifestyles. Over time, developments in monoclonal antibody therapies have provided symptom control benefits for patients living with severe allergic asthma. Omalizumab (Xolair®), a monoclonal antibody medication for IgE-mediated asthma, was approved by the FDA for in-clinic use in 2003. In 2018, the European Commission approved this agent's use for at-home self-administration; this supported increased access and fewer in-clinic trips for patients.<sup>1</sup> However, in the United States, omalizumab largely remains administered in the clinic only.

Due to the COVID-19 pandemic, there has been a recent push to decrease the amount of in-person clinic visits. Over the past 17 years, practitioners in the United States have applied cautionary measures in prescribing omalizumab for at-home use due to its black-box warning for anaphylaxis. However, in August of 2020, Novartis announced the FDA acceptance of a supplemental Biologics License Application for an omalizumab (Xolair®) pre-filled syringe for self-administration, and it will be up for approval in quarter 1 of 2021.<sup>2</sup> With patient access and safety in mind, this clinical inquiry explores the rates and risk factors associated with anaphylaxis that have been reported in the literature for omalizumab.

### Evidence Summary

In a one-arm observational case study, 25 patients newly started on omalizumab were observed for the safety outcomes of at-home administration.<sup>3</sup> Patients were given one or two doses in-clinic, and, once a patient could demonstrate ability to self-administer, they were approved for at-home administration of therapy. Inclusion criteria

encompassed patients with uncontrolled IgE-mediated asthma for greater than or equal to 1 year. Twenty-five patients were included and observed over a 2-month to 4-year time period to assess for severe adverse events. Results showed that no patients reported anaphylaxis or the need to use epinephrine or antihistamines during the total of 1,017 omalizumab at-home doses reported. Limitations of this study relate to its one-arm nature, because there is no comparator group and no ability to measure the portion of effect due to variables other than the intervention. The authors demonstrated the potential of implementing an at-home administration framework.

A 2017 observational study assessed real-life adverse effects from omalizumab administration in-clinic over a 9-year period.<sup>4</sup> Inclusion criteria included patients greater than or equal to 12 years of age with uncontrolled severe persistent asthma, defined by the 2017 GINA report, who had at least 1 injection of omalizumab. Ninety-one patients were included, and this group of patients received 10,472 injections over the study period. There were no anaphylaxis events reported throughout the study. A weakness is that the clinical conclusions are limited due to the lack of a comparator group. This study might support the low rate of anaphylaxis due to omalizumab.

In a post-marketing surveillance report covering data from 2003 to 2005, authors assessed anaphylaxis events reported to Genentech omalizumab (Xolair®).<sup>5</sup> Inclusion criteria included patients with asthma on omalizumab (n = 39,510) and those who had an anaphylactic reaction to omalizumab. The authors identified criteria for an anaphylactic reaction based on the National Institute of Allergy and Infectious Diseases and the Food Allergy and Anaphylaxis Network's (NIAID/FAAN) definition.<sup>6</sup> The outcome was

determined to be 35 patients with anaphylaxis observed at a rate of 0.09%.<sup>5</sup> In this report, authors noted that 75% of anaphylaxis cases occurred within 2 hours after injection for the first 3 injections, and within 30 minutes for the fourth injection and beyond. In addition, a post-marketing adverse event report covering data from 2003 to 2006 was published with similar inclusion criteria and definition of anaphylaxis as the previous report (n = 57,300).<sup>7</sup> Authors assessed the frequency and properties of anaphylactic reactions, and the outcome was determined to be 124 cases of anaphylaxis observed at a rate of 0.2%. Of note, this data summary reported anaphylactic reactions that took place up to 4 days after injection (5 out of 124 cases). A limitation of both studies is the risk for confounding due to severity bias, as patients with more severe disease might influence the outcome of anaphylaxis separately. Another limitation of these studies is that there was no control over mandating the patients and/or healthcare providers to report all cases of anaphylaxis; therefore, the study is at risk for information bias.

In a 2020 pharmacoeconomic evaluation, historical data from 2016 to 2018 was used to estimate the cost effectiveness of at-home versus in-clinic administration of omalizumab and mepolizumab.<sup>8</sup> This study performed the analysis by an incremental cost-effectiveness ratio (ICER) comparison. The analysis was calculated from that of the societal and health system perspective. Direct and indirect costs of the injection, distance traveled by the patient, and risk of anaphylaxis were compared in each setting. The data sources used for safety risks were determined based on prescribing information, drug approval status from Europe, and two retrospective studies. The number of simulations in the model was 10,000. The results of the ICER, from

the health care perspective, for in-clinic to at-home administration was \$445,861,774 per fatality prevented and from the societal perspective \$500,648,430 per fatality prevented. One limitation of this study is that adherence to at-home therapy was unaccounted for and assumed to be at 100%, which is not a realistic assumption. This analysis attempted to address the theoretical cost savings and justification for at-home administration.

In a series of letters to the editor, small case reports have shared various characteristics that might be associated with a higher risk of anaphylaxis when taking omalizumab.<sup>9-11</sup> This compiled data indicated reactions to be more likely to occur within 2 hours of the first 3 doses, within 30 minutes from the fourth dose on, or with a previous history of anaphylaxis. Weaknesses within these reports come from the risk for confounding due to limited controls, and the concern for overreporting in patients with severe allergic asthma; however, these findings can provide more information when considering each patient individually as a candidate for at-home use.

## Recommendations from Others

The 2020 Global Initiative for Asthma (GINA) report addresses recommendations for management of asthma in adults and children greater than 5 years old.<sup>12</sup> When considering omalizumab therapy, the report states that it is indicated as add-on therapy for patients who still have uncontrolled IgE-mediated asthma despite other treatments. It additionally outlines that self-administration is an option if the agent meets acceptable criteria from local payers and prescribers, and education is provided to identify adverse effects, including hypersensitivity reactions. Overall, the GINA report stresses the role of the individualized patient-and-asthma-team relationship in supporting and educating patients to strengthen self-confidence in managing asthma therapies day to day.

## Evidence-Based Answer

Home-administration may have a similar safety profile compared to in-clinic administration regarding risk of anaphylaxis in patients living with asthma

on omalizumab therapy. (Strength of recommendation = B, based on lower quality evidence of observational studies, post-marketing surveillance reports, a pharmaco-economic analysis, and letters to the editor with patient-oriented outcomes.) Further research and evaluation of at-home administration is necessary to increase practitioner confidence in the safety profile for omalizumab. For clinicians considering the transition of patients to at-home administration, there should be adequate risk-benefit discussions, patient education and demonstration in injection technique, and education in allergic reaction medication administration for each patient. Furthermore, all adverse reactions should be well-documented, reported, and electronically retrievable for quick and reportable population-health data.

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## References

1. Novartis International AG. Novartis receives European Commission approval for self-administration of Xolair® across all indications. Novartis. Published December 13, 2018. Accessed August 14, 2020. <https://www.novartis.com/news/media-releases/novartis-receives-european-commission-approval-self-administration-xolair-across-all-indications>
2. Novartis Pharmaceuticals Corporation.

- Novartis announces FDA filing acceptance of Xolair® (omalizumab) prefilled syringe for self-administration across all indications. PR Newswire. Published August 13, 2020. Accessed October 6, 2020. <https://www.prnewswire.com/news-releases/novartis-announces-fda-filing-acceptance-of-xolair-omalizumab-prefilled-syringe-for-self-administration-across-all-indications-301111352.html>
3. Liebhaber M, Dyer Z. Home therapy with subcutaneous anti-immunoglobulin-E antibody omalizumab in 25 patients with immunoglobulin-E-mediated (allergic) asthma. *J Asthma*. 2007;44(3):195-196. doi: 10.1080/02770900701209749
4. Di Bona D, Fiorino I, Taurino M, et al. Long-term “real-life” safety of omalizumab in patients with severe uncontrolled asthma: a nine-year study. *Respir Med*. 2017;130:55-60. doi: 10.1016/j.rmed.2017.07.013
5. Cox L, Platts-Mills TAE, Finegold I, Schwartz LB, Simons ER, Wallace DV. American Academy of Allergy, Asthma & Immunology/American College of Allergy, Asthma and Immunology joint task force report on omalizumab-associated anaphylaxis. *J Allergy Clin Immunol*. 2007;120(6):1373-1377. doi: 10.1016/j.jaci.2007.09.032
6. Sampson HA, Munoz-Furlong A, Campbell RL, et al. Second symposium on the definition and management of anaphylaxis: summary report—Second National Institute of Allergy and Infectious Disease/Food Allergy and Anaphylaxis Network symposium. *J Allergy Clin Immunol*. 2006;117(2):391-397. doi: 10.1016/j.jaci.2005.12.1303
7. Limb SL, Starke PR, Lee CE, Chowdhury BA. Delayed onset and protracted progression of anaphylaxis after omalizumab administration in patients with asthma. *J Allergy Clin Immunol*. 2007;120(6):1378-1381. doi:10.1016/j.jaci.2007.09.022
8. Shaker M, Briggs A, Dbouk A, Dutille E, Oppenheimer J, Greenhawt M. Estimation of health and economic benefits of clinic versus home administration of omalizumab and mepolizumab. *J Allergy Clin Immunol Pract*. 2020;8(2):565-572. doi: 10.1016/j.jaip.2019.09.037
9. Cox L, Lieberman P, Wallace D, et al. American Academy of Allergy, Asthma & Immunology/American College of Allergy, Asthma & Immunology Omalizumab-Associated Anaphylaxis Joint Task Force follow-up report. *J Allergy Clin Immunol*. 2011;128(1):210-212. doi: 10.1016/j.jaci.2011.04.010
10. Lieberman PL, Umetsu DT, Carrigan GJ, Rahmaoui A. Anaphylactic reactions associated with omalizumab administration: analysis of a case-control study. *J Allergy Clin Immunol*. 2016;138(3):913-915.e2. doi: 10.1016/j.jaci.2016.03.030
11. Lieberman PL, Jones I, Rajwanshi R, Rosen K, Umetsu DT. Anaphylaxis associated with omalizumab administration: risk factors and patient characteristics. *J Allergy Clin Immunol*. 2017;140(6):1734-1736.e4. doi: 10.1016/j.jaci.2017.07.013
12. Global Initiative for Asthma. Global strategy for asthma management and prevention, 2020. Global Initiative for Asthma. Published 2020. Updated April 3, 2020. Accessed July 9, 2020. [https://ginasthma.org/wp-content/uploads/2020/04/GINA-2020-full-report\\_-final-\\_wms.pdf](https://ginasthma.org/wp-content/uploads/2020/04/GINA-2020-full-report_-final-_wms.pdf)

## 2020 Technician Educational Forum Recap

by Shelby Van Engel, CPhT

The PSW Technician Educational Forum is a wonderful opportunity provided to pharmacy technicians in Wisconsin each year and 2020 is no exception! Even with the COVID pandemic in the midst, PSW pushed on and allowed the Technician Forum to be launched virtually for the first time. We are so fortunate to have the Pharmacy Society of Wisconsin to host such an event, and thank you to all of the volunteers and speakers who helped put this event on virtually rather than cancelling.

We had 34 registered attendees, and 6 staff/volunteers attend the live conference on Friday, October 23rd, 2020 hosted by Zoom. The conference began shortly after 1:00pm, and was kicked off by PSW Technician Section Immediate Past President, Miranda Peek. The Zoom software gave attendees the opportunity to chat with one another privately, or as a whole group, which was a wonderful way for attendees to network, even in a virtual setting. Shortly after the conference started, Miranda revealed the PSW Pharmacy Technician of the Year, Gabby Gaura, from Streu's Pharmacy in Green Bay. We then had the pleasure of meeting the new 2020-2021 Technician Section Board, and hear them be installed. The 2020-2021 Technician Section Board is as follows:

- Sarah Raether, President
- Miranda Peek, Past President
- Miranda Wagner, President Elect
- Carrie Plier, Secretary
- Shelby Van Engel, Region A Director
- Barbara Ranzenberger, Region B Director
- Joseph Santilli, Region C Director
- Jennifer McLarty, Region D Director
- Karen Suchon, Region E Director
- Jennifer Leitner, Region F Director

Sarah Raether then gave quite the uplifting speech, giving attendees a bode of confidence to continue on through the upcoming year, while also thanking

each of us for our role, duties, sacrifices, and successes over the course of the past year especially through the pandemic. Her speech was truly inspiring, and really helped attendees feel that they are valued, and a very important part of the health care system. Sarah stated, "I hope the takeaway from this conference is that without you, Pharmacy would not exist" along with later in her speech, "This is our year to shine!" Such true and memorable statements are truly inspiring for each and every technician no matter their role within Pharmacy.

The virtual platform was then handed off to Ali Godin, Certified Life Coach. Ali is from Wisconsin, but now lives in Florida. As Ali's career evolved with Disney, she was consumed by the fast pace business world and struggled to keep up on her own personal self-care. In 2018, Ali decided to re-evaluate her life style, and decided to put joy first. After the completion of her own path to happiness she started her own business "Ful Life Coaching" and is a very successful life coach helping others on their journey to fulfill joy and happiness. Ali put on a wonderful presentation, "Living a Ful Life during a Pandemic, Professionally and Personally." Ali explained that there are seven steps to leading a "Ful Life", and those steps are: Self-Exploration, Blocks, Options, Planning, Research & Testing, Sustaining Change, and Mastering Skills. Along with explaining these skills to us, Ali also took time to explain to attendees how to make SMART (Specific, Measureable, Achievable, Realistic, Time Specific) goals. SMART goals are so important in the world of pharmacy, as it helps ensure that the goals we have are best for our patients and will actually have an overall impact on the world of health care and for technicians specifically, the world of pharmacy.

After Ali's wonderful presentation, the conference moved onto breakout groups, where we got to network and meet with fellow technicians. The members of the technician board spent much time asking technicians how things are going with

the pandemic, and technician's struggles. The board also asked technician's what they as a board could do to help. They provided the opportunity for technician's to ask each other for advice on situations or struggles taking place in their current pharmacies. Additionally, the other session spent time asking technician's how they feel the pandemic has affected their roles in pharmacy, and where and how they would like to see the technician role expand in the future. Mainly, what roles they would like to be added to the technician scope of practice. Technicians were very responsive and open, and it was a great experience to get to network and share ideas amongst one another.

In past years, the conference then would have broken out into educational sessions, in which attendees could pick and choose certain sessions to attend. This year, with the conference being virtual attendees had the opportunity to view all six educational sessions online on their own time. There were six educational sessions (or CE's) offered:

1. Opioids: Past, Present, and Future (A review for Pharmacy Technicians)
2. Diversion: Awareness and Prevention
3. Sterile Compounding: A Review
4. Research Basics – You Can Do This!
5. Pulse on Wisconsin Provider Status: An Update for Pharmacy Technicians
6. Changes to Telehealth in Wisconsin in 2020

All of these presentations are great educational resources for pharmacy technicians, and will have great value to their respective pharmacy's work flow. PSW did a wonderful job ensuring a mix of presentations in this year's sessions. They ensured that there were presentations that apply to all pharmacy settings, such as the Opioids, Diversion, Research, Provider Status, and Telehealth Sessions. They also threw in a session about Sterile Compounding, which although specific to a few pharmacy settings, is also a great

# Finding Your Fit: Your Professional Home in Pharmacy

## 2020 Virtual PSW Technician Educational Forum

### Friday, October 23, 2020



refresher to those of us in retail, or non-compounding pharmacy settings. These educational opportunities are much appreciated, and are truly vital for the technician role overall in pharmacy.

As technicians, we all have at least one example of times where health care professions, employers, the general public, or sometimes even our families, don't understand the role we as technicians play in the overall health care system. Although PSW has made, and continues to make amazing leaps and strides to bridge this gap, we all as technicians have times where we are undervalued, or not understood. Our education as technicians is the base of narrowing this gap even more. This conference each year is one of the biggest opportunities for growth technicians have. The experiences, education, and connections from this conference each and every year are a vital part to a technician's individual growth. Technicians leave this conference having grown individually with skills, education, leadership, and confidence to implement into their daily workflow, and patient care. For those technicians that missed out this year, make sure to sign up for the 2021 Technician Educational

Forum!

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"MORTAR & PENCIL" CONCORDIA UNIVERSITY WISCONSIN SCHOOL OF PHARMACY STUDENT WRITING CLUB:

# Business Member Spotlight: Ascension Wisconsin Center for Pain Management - Jordan Wulz, PharmD, MPH, BC-ADM

by Joseph J. Champoux, 2024 PharmD Candidate, Ryan G. Rypel, MBA, 2024 PharmD Candidate

The Ascension Wisconsin Center for Pain Management is based in Milwaukee and has outpatient clinics throughout the metropolitan area, which make up parts of Ascension Wisconsin's Pain Management Clinic. In the middle of an opioid crisis during which providers are reluctant to prescribe opioids, these clinics provide chronic-pain patients with holistic, evidence-based medicine. The Center for Pain Management provides team-based care, which includes an anesthesiologist, a physical medicine and rehabilitation physician, a physician assistant, a clinical pharmacist, and a pain psychologist. Within the various outpatient clinics, treatment with medications and injections is common, and is often paired with physical or behavioral therapy, emphasizing a four-pronged approach to pain management.

As the pharmacist on the team, Dr. Jordan Wulz, PharmD, MPH, works with a wide variety of medical professionals. Dr. Wulz practices at mainly at the clinic located at Ascension Columbia St. Mary's Ozaukee Campus 2 days per week, in close proximity to and communication with a physical medicine and rehabilitation physician. He meets with nearly every patient that enters the clinic. He begins by collecting a medication history to ensure that he has the most up-to-date information. Dr. Wulz then assesses patient progress toward functional treatment goals. If Dr. Wulz determines that a patient's treatment needs to be adjusted, he communicates therapeutic recommendations to both the physician and the patient. This process allows the physician to focus more on diagnosis and interventional treatment,

such as intraarticular injections or nerve blocks. Additionally, since the pharmacist and the physician work in the same office, therapeutic medication adjustments can be made in real time.

## Comprehensive Care

The clinic employs a unique approach to pain management. In addition to the multidisciplinary focus on treating pain, there is an understanding that mental health can have a major impact on pain levels and functional impairment. Mental health is treated both passively and actively at the clinic. Dr. Wulz consults on the use of some psychiatric medications, such as serotonin-norepinephrine reuptake inhibitors (SNRIs) and tricyclic antidepressants (TCAs), which can be used to treat both pain and accompanying mood disorders. Prescribing medications, however, is only one part of mental health treatment. The clinic often involves behavioral therapy in a person's treatment, led by a pain psychologist. This focus on physical and mental health is essential for optimizing chronic-pain treatment and is evidence-based. Chronic pain is often interconnected and comorbid with mood disorders such as major depressive disorder, anxiety, and bipolar disorder.

The clinic also offers unique educational experiences for learners. Dr. Wulz has developed an advanced pharmacy practice experience (APPE) for students interested in pain management and public health. During this rotation, students spend two days in clinic, two days at a local health department, and one day in the Milwaukee Drug Treatment Court. Primary and secondary prevention of substance use/abuse, including opioids, is the focus of the public health portion of this

rotation, providing student pharmacists a comprehensive view of the opioid crisis and how pharmacists can have a positive impact in this area.

## Adjusting Expectations through Education

The current opioid crisis in the United States has brought about many challenges for both patients and pain management providers. One of the biggest challenges within the pain management clinic is unrealistic or inappropriate patient expectations. In the recent past, many patients were prescribed chronic opioids for chronic non-cancer pain. Because of this, there is often a baseline expectation from patients that pain management is equivalent to prescribing opioids. While prescription opioids can be a useful tool in the treatment of acute and chronic pain, they should not be the mainstay of treatment. Dr. Wulz and his colleagues work to adjust these expectations through patient education and cognitive behavioral therapy.

Patient education at the clinic is meant to maximize a person's treatment while reducing medication side effects. This is done by first explaining to the patient the best way to take the medication. With opioids, and in the context of chronic pain, this often means using these medications on an as needed basis to avoid the development of tolerance and physical dependence. Dr. Wulz also likes to counsel patients' caregivers and family members on the side effects of these medications. It is important to educate those people around the patient about both common and serious side effects, including respiratory depression, so they can recognize the signs



**Above:** Columbia St. Mary's campus in Ozaukee, WI. **Right:** Jordan Wulz, PharmD, MPH, BC-ADM



of an opioid overdose should one occur. Knowing when to call 911 or administer naloxone can be the difference between life and death for patients using opioid therapy.

At the pain management clinics, patients are encouraged to become active in their pain management treatment. Getting people to be active in their treatment can be a difficult task. There continues to be a transactional expectation, of medications for pain-management complaints, likely as a result of previous pain management practices. Anecdotally, the healthcare team often sees greater improvement in patients' pain and function when they become active in their treatment. Often, this entails involvement in physical or behavioral therapy, but appropriate exercises can also be quite beneficial.

## Moving Forward

Pain management is a healthcare specialty that has growing demand as a result of the ongoing opioid crisis. The need for healthcare providers with specialized training in pain management has been heightened by historically limited or inappropriate pain management education in medical and pharmacy schools. As healthcare providers work to tackle the complexities and challenges of chronic pain management, it will be important to optimize pharmacist involvement in the comprehensive treatment of chronic pain.

Chronic pain cannot always be explained by a physical abnormality or disorder. In some cases, physical pain

can be a manifestation of a psychologic disorder. In other cases, physical pain can be exacerbated by psychologic disturbances. In both scenarios, the perceived pain is real and should be treated accordingly. Often, this means medication should not be the only course of treatment. Because of this, cognitive behavioral therapy can be an especially helpful tool for individuals who suffer from chronic pain.

Current pharmacy education generally provides information on various prescription and non-prescription pain medications; however, it typically doesn't provide information about possible non-pharmacologic remedies or non-therapies.

Clinical and ambulatory care pharmacy are relatively young concepts in healthcare that are continuously evolving. Ambulatory care pharmacists with a specialty in chronic pain management can be especially valuable in the primary care setting, where patients often present first. This focus on pain in the primary care setting would allow providers to spend more time managing other chronic disease states such as diabetes, hypertension, or dyslipidemia.

In addition to placing pharmacists in primary care offices, increasing pharmacists' legal abilities will help to advance care in this area. One specific change Dr. Wulz would like to see is the ability for pharmacists to receive a DEA number. This would allow pain management pharmacists to prescribe pain medications for their patients. Dr. Wulz would also like to get rid of the special training required for

prescribing naloxone/buprenorphine. This, in combination with obtaining a DEA number, would allow pain management pharmacists to provide the best care possible for their patients.

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Joseph Champoux and Ryan Rypel are First Year Doctor of Pharmacy Candidates at Concordia University Wisconsin School of Pharmacy in Mequon, WI.

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# Network Health Creates Innovative Services to Get Their Medicare Members Vaccinated During COVID-19 Pandemic

by Jenevieve Van Order, 2021 PharmD Candidate



As a result of the COVID-19 pandemic, routine vaccination rates have decreased throughout all United States populations, causing public health concerns.<sup>1</sup> The Centers for Disease Control and Prevention (CDC) have noted that this has become a nationwide occurrence, perhaps due to shelter-in-place and safer-at-home orders.<sup>2</sup> According to the CDC, influenza vaccinations for the 2020-2021 season will be of the utmost importance, in order to help reduce influenza-associated burden on the already-stressed healthcare system.<sup>2</sup> While influenza vaccinations are crucial at this time, it is also important to provide these vaccinations in a way that minimizes the risk of COVID-19 spread and makes patients feel comfortable and safe. This is something Network Health has been striving do for its members.

Network Health is a local health insurance company that has been serving its members in northeast and southeast Wisconsin for more than 35 years. The leadership team knew they needed to find an innovative way to provide their members with vaccinations this year. Andy Wheaton (pictured above), PharmD., started working at Network Health in 2016 and is now the manager of the pharmacy department. Wheaton worked with a team to create safe outdoor vaccination clinics for Medicare members. “We began our focus with our Medicare population, because this group is generally a higher-risk population,” explained Wheaton. Network Health partnered with Walgreens and Walmart to offer these open-air vaccination clinics, which allow members to properly social distance and avoid gathering in large

groups.

In previous years, Network Health held Medicare member events in October where patients were provided with benefit updates, including pneumococcal and influenza vaccinations. In 2019, roughly 8,500 members attended these events, and approximately 6,500 vaccinations were provided. “This year, we had to explore new options with COVID-19 restrictions and precautions,” said Wheaton. Invitations were sent out via mail to a total of 65,000 members in mid-August to invite them to register for and participate in the “tent events” hosted in collaboration with Walgreens and Walmart. A Medicare member simply selected an outdoor clinic location, date, and one-hour time slot and then registered for that specific tent event and time. Members could register via a newly created online registration portal, by mail, or by phone call to the Member Experience call center. After a member registered, they received a registration confirmation and a vaccination form via mail or via an electronic method.

When Network Health decided to hold outdoor vaccination clinics, they needed to consider new factors, like the weather. According to Wheaton, “Typically, October tends to get much colder and weather is more unpredictable, compared to September. So we decided to move the events to September for better weather potential.” Network Health worked with Walgreens and Walmart to form alternate plans for inclement weather in order to avoid canceling events. “We felt we prepared for all weather scenarios.”

These outdoor tent events were held in areas of northeast and southeast Wisconsin (Network Health’s service area) and

featured elevated safety precautions in light of COVID-19. Members were screened for COVID-19 symptoms, had temperatures checked prior to vaccination, and wore masks throughout their visit. Pharmacists wore masks and face shields, and all tables, chairs, clipboards, and pens were sanitized between members. Wheaton elaborated, “We normally bring a team of Network Health employees along to our member events, but we made the decision to provide these with minimal staffing, to allow for COVID-19 precautions for the safety of our members, our partners, our employees, and the community we all share.”

The main focus of the outdoor clinics was influenza vaccinations; however, Network Health encouraged their partners to administer other vaccinations to their members who needed them for gap closure. Wheaton stated, “Pneumonia, Shingrix, and TDAP were all [also] provided during these events.” For the majority of Network Health Medicare members, there was no charge associated with influenza or pneumococcal vaccinations. “If a member chooses to get a Shingrix vaccine, there [is] generally a \$42 copay associated with this Medicare Part D benefit.”

In total 7,003 Medicare members received vaccinations and a total of 7,850 vaccinations were provided. Wheaton said that members appreciated the ability to schedule a specific time that worked best for them and that they didn’t have to wait in a long line. Most wait times were a maximum of 5-10 minutes, and members were both shocked and thankful that the process was so efficient and safe. “In general, our members had overwhelming, positive feedback about their experiences.”

With the outdoor vaccination events

complete, the Network Health team will now regroup and reflect on their experiences with these clinics, and plan to debrief with Walgreens and Walmart. Wheaton explained that they will “take a deep-dive look at what went well and discuss where [there] are improvement opportunities.” Wheaton has already reflected on some unanticipated scenarios with their tent events, including strong winds that bent the metal tent posts when under enough pressure. Another issue arose when scheduling patients in one-hour time increments; most patients showed up at the beginning of the hour, and by the end of the hour, there was a lull in patients. In the future, 30-minute time slots will be considered to keep a better patient flow during the events. In addition, Wheaton found that having multiple modes of registration caused problems with the hourly cap of members that could register, and it required a lot of time to call

members and reschedule them. For future clinics, Network Health will consider raising the time slot caps.

Looking ahead, Network Health is planning a Shingrix vaccination campaign and vaccination events. They are also collaborating with local providers to form a plan for delivering COVID-19 vaccinations once they become available. Network Health is dedicated to partnering with local pharmacies. Wheaton said, “For a pharmacy to partner with us, all they need to do is reach out to our team.”

Perhaps the key to the success of Network Health’s outdoor vaccination clinics was the team behind the events—not only Network Health staff members, but their partners, Walgreens and Walmart. Their partnerships allowed them to create an innovative opportunity for their members to get vaccinated while remaining safe. Wheaton stated, “Although my name may be on this article, I worked on a

team and had a number of people behind this team working to make these events a success... We could not have done this without everyone pitching in to make it happen.”

Jenevieve Van Order is a 4th Year Doctor of Pharmacy Candidate at the University of Madison-Wisconsin School of Pharmacy in Madison, WI.

### References

1. Issue brief: the impact of COVID-19 on US vaccination rates. National Foundation for Infectious Disease. Accessed October 14, 2020. <https://www.nfid.org/keep-up-the-rates/issue-brief-the-impact-of-covid-19-on-us-vaccination-rates/>
2. Interim guidance for routine and influenza immunization services during the COVID-19 pandemic. Centers for Disease Control and Prevention. Updated October 20, 2020. Accessed October 24, 2020. <https://www.cdc.gov/vaccines/pandemic-guidance/index.html>

Below: Flu shot postcard sent by Network Health.

## Find a flu shot event near you.

Location	Date	Time
Oshkosh Walgreens 315 W Murdock Ave., Oshkosh	Thursday, August 27 and Friday, August 28	Hourly, from 9 a.m. to 3 p.m.
Chilton Walmart 810 S Irish Rd., Chilton	Tuesday, September 1	Hourly, from 8 a.m. to 3 p.m.
Neenah Walgreens 500 S Commercial St., Neenah	Wednesday, September 2 and Thursday, September 3	Hourly, from 9 a.m. to 3 p.m.
Green Bay West Walmart 2440 W Mason St., Green Bay	Wednesday, September 2	Hourly, from 8 a.m. to 1 p.m.
Green Bay East Walmart 2292 Main St., Green Bay	Thursday, September 3	Hourly, from 8 a.m. to 1 p.m.
Fond du Lac Walmart 377 N Rolling Meadows Dr., Fond du Lac	Wednesday, September 9 and Thursday, September 10	Hourly, from 8 a.m. to 4 p.m.
Waupaca Walgreens 925 W Fulton St., Waupaca	Thursday, September 10	Hourly, from 9 a.m. to 3 p.m.
Waukesha Walmart 2000 S West Ave., Waukesha	Friday, September 11	Hourly, from 8 a.m. to 11 a.m.
Neenah Walmart 1155 W Winneconne Ave., Neenah	Tuesday, September 15	Hourly, from 8 a.m. to 4 p.m.
Green Bay Walgreens 2204 University Ave., Green Bay	Wednesday, September 16 and Thursday, September 17	Hourly, from 9 a.m. to 3 p.m.
Oshkosh Walmart 351 S Washburn St., Oshkosh	Wednesday, September 16 and Thursday, September 17	Hourly, from 8 a.m. to 4 p.m.
Pleasant Prairie Walgreens 7520 118th Ave., Pleasant Prairie	Wednesday, September 16	Hourly, from 9 a.m. to 3 p.m.
Brookfield Walgreens 15738 W Capitol Dr., Brookfield	Thursday, September 17	Hourly, from 9 a.m. to 3 p.m.
Berlin Walmart 861 County Road F, Berlin	Friday, September 18	Hourly, from 8 a.m. to 3 p.m.
West Bend Walgreens 1921 S Main St., West Bend	Friday, September 18	Hourly, from 9 a.m. to 3 p.m.
Darboy Walmart 3701 E Calumet St., Appleton	Tuesday, September 22 and Wednesday, September 23	Hourly, from 8 a.m. to 4 p.m.

Fond du Lac Walgreens 1060 E Johnson St., Fond du Lac	Wednesday, September 23 and Thursday, September 24	Hourly, from 9 a.m. to 3 p.m.
Grand Chute Walmart 955 N Mutual Way, Appleton	Thursday, September 24	Hourly, from 8 a.m. to 4 p.m.
Plover Walmart 250 Crossroads Dr., Plover	Friday, September 25	Hourly, from 8 a.m. to 3 p.m.
Manitowoc Walmart 4115 Calumet Ave., Manitowoc	Tuesday, September 29	Hourly, from 8 a.m. to 4 p.m.
Appleton Walgreens 729 W Northland Ave., Appleton	Wednesday, September 30 and Thursday, October 1	Hourly, from 9 a.m. to 3 p.m.
Sheboygan Walmart 4433 Vanguard Dr., Sheboygan	Wednesday, September 30	Hourly, from 8 a.m. to 4 p.m.
Shawano Walmart 1244 E Green Bay St., Shawano	Thursday, October 1	Hourly, from 8 a.m. to 1 p.m.
New London Walmart 1717 N Shawano St., New London	Friday, October 2	Hourly, from 8 a.m. to 1 p.m.

## Register for your flu shot today by using one of our convenient options



### Online at [networkhealth.com/flushot](https://networkhealth.com/flushot)

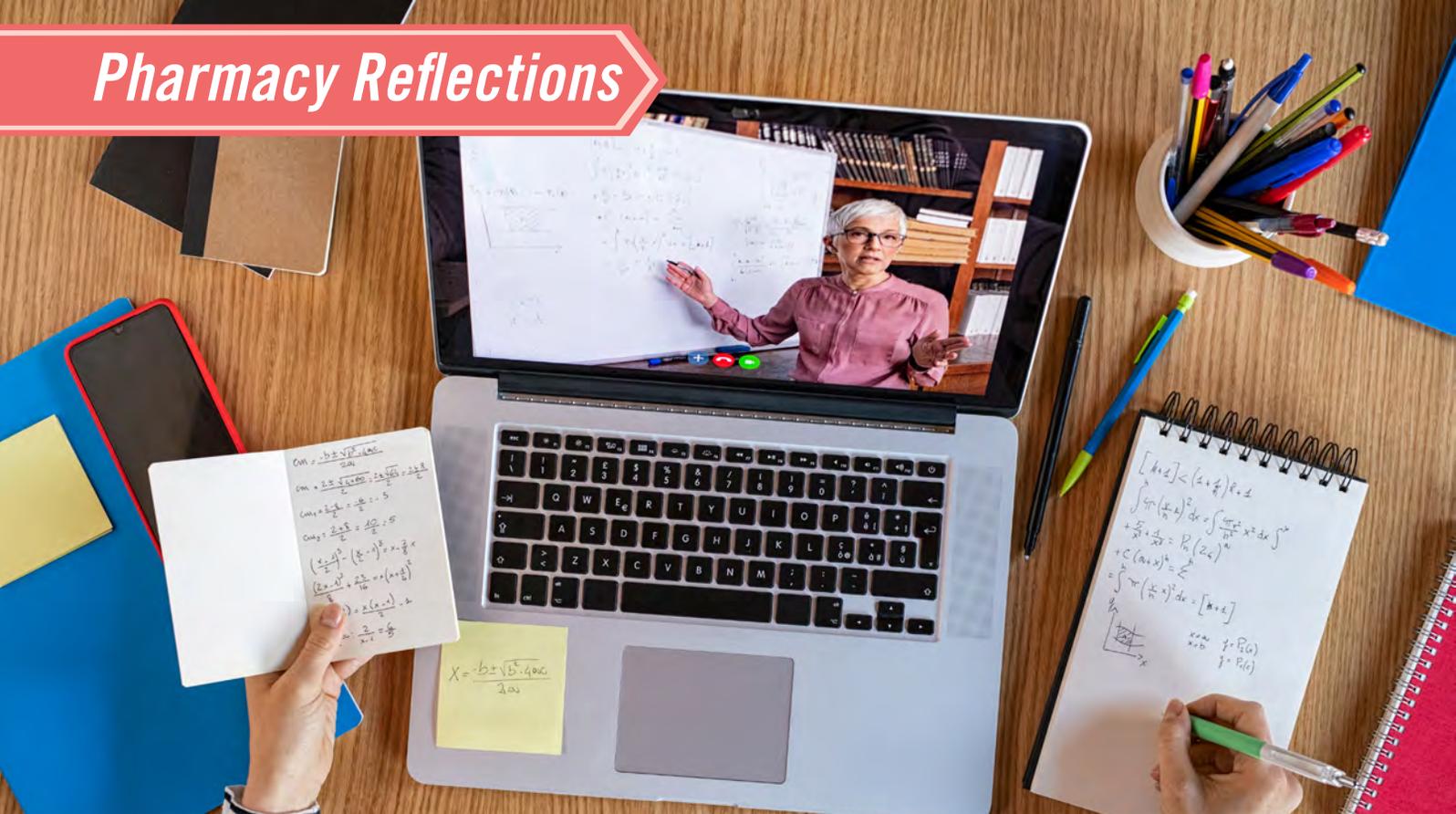
You will select a one-hour window for your vaccination. You'll also receive an online confirmation (make sure you save this) and a link to the vaccination form. Save time by printing and completing your vaccination form before you arrive. There will be forms available at the location as well.

– OR –



### Complete the postage-paid registration card and drop it in the mail

**Can't Attend?** If you can't attend any of our outdoor flu shot clinics, you can still protect yourself by getting a flu shot another way. Flu shots are offered throughout the community. Contact your local pharmacy, health department or your doctor's office for more information.



## Remote Learning: A Student's Perspective

by Nicholas L Adler

### Abstract

Student pharmacists completing their Advanced Pharmacy Practice Experiences (APPEs) remotely are in a unique position of managing their experiential learning offsite. Work environment, time management, and professional development are key areas of focus for a successful remote APPE. Remote learners are encouraged to adapt and prepare alongside their preceptors to achieve a successful remote rotation.

Remote learning is nothing new; it first appeared more than a quarter of a century ago. The COVID-19 pandemic exponentially increased the demand for remote learning experiences for pharmacy students. The transition from traditional classes to online

classes and then to online Advanced Pharmacy Practice Experiences (APPEs) has required adaptation by pharmacy students. Since the beginning of my fourth-year experiential training, I have had two remote APPEs: medication use strategy and innovation, and pharmacy informatics, in addition to one 4-week semi-remote administrative APPE. I have found that focusing on three key areas—work environment, time management, and professional development—can lead to a successful remote experience.

### Work Environment

New physical environments for APPE students can create distinct location-based responsibilities that are not present while remote. For example, traveling to a hospital daily for an APPE creates physical distance between professional and personal lives, while the commute for remote experiences is nonexistent. In the first days of my remote APPEs, I took the time to organize and revitalize my workspace as a critical step to maintain focus and energy for learning throughout the day.

Setting up a productive work environment can relieve stress and provide a sense of accomplishment. Learners should take care to maintain a clean work environment that is void of clutter and distractions. This not only helps to organize the space but also decreases time to find resources.

Using online file storage systems like Google Drive or Microsoft OneDrive can further improve remote experiences. Storing journal articles and documents in a shared Google Drive has been invaluable for maintaining organization among my preceptors and I. Additionally, as a form of open communication, I have used a shared Google document with my preceptor to record my priorities and end-of-day accomplishments. Using my computer for entire workdays meant I constantly had access to storing notes and other information digitally. OneNote has served as the bedrock of my remote learning by serving as a hub for all the projects, information, articles, and notes that I accumulate from day to day.

Developing the skills to use technology efficiently while working remotely is

invaluable for future pharmacists, and managing a good work environment is a significant step to a more effective remote learning experience. However, technical setbacks, such as restricted electronic health record access, the inability to access data stored on an internal network, and decreased frequency of spontaneous learning opportunities, continue to pose challenges to remote learning APPEs.

## Time Management

Strong time management skills are required for successful remote APPEs. I use multiple strategies to effectively structure my time. In my past experiences, preceptors have directed me to LinkedIn Learning courses on time management, such as Time Management Fundamentals.<sup>1</sup> These courses have been useful in developing a base to structure my days. “Blocking” time uses pre-defined sections of the day in an online calendar, with each section devoted to a specific project.

Working with preceptors to find frequent times to touch base and discuss the day is a critical component of a successful remote learning experience. In my experience, I found that having more frequent opportunities to directly communicate with preceptors has greatly benefited me during my remote rotations. For example, I have used weekly debriefs with additional one-on-one instruction, and morning meetings, which incorporated didactic teaching and instruction, followed by brief touch-base meetings with preceptors. Communication tools such as online video call software (e.g., WebEx, Zoom, or Teams) as well as email and phone communication are essential for successful remote experiences. Individual schedules are ultimately up to the learner and preceptor to decide.

Consistent scheduling can also help with the organization of a remote learning experience. Time management is a skill that, like a muscle, can be exercised and pushed to improve.

## Professional Development

Lastly, allotting time for professional development can make a student’s downtime during their remote experience more productive. During my remote APPEs, I have spent time developing my

CV; researching residency opportunities; volunteering at the UW Health pharmacy department’s drive-through flu clinic; listening to pharmacy informatics podcasts such as *PharmacyIT and Me*;<sup>2</sup> reviewing various other online informatics resources (including Pharmacy Informatics Academy<sup>3</sup> and the American Society of Health-System Pharmacists’ resources for students related to informatics<sup>4</sup>); and networking.

As future pharmacists, we commit to constantly developing and improving our skills. Remote learning experiences provide students the opportunity to work on their written communication skills through email and written drug information questions; verbal skills by presenting virtually and communicating via video conference; and organizational and time management skills by reading, researching health literature, reviewing school materials, and exploring new developments in healthcare.

Networking poses another challenge during remote experiential learning. Normally, most professional interaction and networking occur through ad hoc interactions in person. Some things I have done to bridge the gap include using video calls, following up on email communication, engaging in casual conversation before and after meetings, sharing information resources, and keeping up with professional organization news. Other recommendations for networking while remote include participating in virtual recess, using professional social media, using existing connections, reaching out to alumni, and creating professional learning opportunities.<sup>5,6</sup> Some might consider these tasks best for “off” hours, but with proper time management, there will inevitably be a time when you have ten minutes before an online meeting, are stuck on a project, or need a change of pace.

Remote experiential learning will play a key role in pharmacy experiential education for the foreseeable future. We need to be able to effectively learn on rotation whether working in person or remotely. Work environment, time management, and professional development are areas to focus on when presented with the opportunity to complete a remote experience.

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PR

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## References

1. Crenshaw D. Time management fundamentals. LinkedIn Learning website. Updated August 13, 2018. Accessed October 23, 2020. <https://www.linkedin.com/learning/time-management-fundamentals>
2. Dao T. Pharmacy, IT, & me: your informatics pharmacist podcast. [Podcast]. United states: Apple podcasts. December 12, 2018. Accessed October 23, 2020. <https://podcasts.apple.com/us/podcast/pharmacy-it-me-your-informatics-pharmacist-podcast/id1446544379>.
3. Dao T, Fung B, Shah B, Vu D. Pharmacy Informatics academy website. Accessed October 26, 2020. <https://pharmacyinformaticsacademy.com/>
4. American Society of Health System Pharmacy. Informatics. ASHP website. Updated 2020. Accessed October 26, 2020. <https://www.ashp.org/Pharmacy-Practice/Resource-Centers/Informatics?loginreturnUrl=SSOCheckOnly>
5. Gottlieb M, Egan D, Kryzysaniak S, Wagner J, Weizberg M, Chan T. Rethinking the approach to continuing professional development conferences in the era of COVID-19. *J Contin Educ Health Prof.* 2020;40(3):187-191. doi:10.1097/CEH.0000000000000310
6. Gottlieb M, Sheehy M, Chan T. Number needed to meet: ten strategies for improving resident networking opportunities. *Ann Emerg Med.* 2016;68(6):740-743. doi:10.1016/j.annemergmed.2016.05.020

## Remote Teaching: A Preceptor's Perspective

by Julie Pawola PharmD

### Abstract

Remote precepting can be a rewarding experience. Because the need for remote experience will continue into the future, it is essential for preceptors to:

- Determine the best learning model for both the student and the preceptor
- Outline and prepare rotation activities in advance
- View all rotations as continuous quality improvement projects
- Constantly share successes and opportunities for improvement with colleagues

At the end of July 2020, I started to outline our team's teaching plan for the 2020-2021 school year and realized that two fourth-year pharmacy students had signed up for our pharmacy informatics elective rotation. I brainstormed how to successfully precept students while working remotely with my own two school-aged children at home. I met with a pharmacist colleague who had recently completed a remote rotation. This meeting was invaluable for helping me learn the keys to success and begin to formulate ideas about what a remote rotation could look like.

My chosen profession comes with a commitment to lifelong learning, so I sought out resources to determine what information was available to advise preceptors in a remote setting. I contacted the Experiential Education Program office at the University of Wisconsin-Madison School of Pharmacy, and the education and development coordinator in our department to identify resources. As an active member of the American Society of Health System Pharmacists (ASHP), I also investigated the resources that

were available through my professional pharmacy organization. I used the following resources to get practical suggestions for how to be a successful remote preceptor.

1. ASHP podcast: *From the Frontline of COVID-19: Managing Remote Rotations*<sup>1</sup>
2. ASHP webinar series: *Innovative Teaching and Learning Models in the COVID-19 Era: Parts I & II*<sup>2</sup>
3. University of California at San Francisco: *Best Practices for Remote Learning*<sup>3</sup>
4. Journal of the Pharmacy Society of Wisconsin: *I am a Pharmacy Professional and a... Virtual Teacher*<sup>4</sup>

The first decision that needs to be made with remote teaching is to determine the learning model of the rotation: completely in person, hybrid, or virtual only. My team was already working remotely, the COVID-19 cases in my area were continuing to rise, and for personal reasons, I needed to remain at home. I communicated to the School of Pharmacy and to the student scheduled for the rotation that it would be offered as a completely remote experience. The major limitation of this model was that the student would not have access to our electronic medical record (EMR) or to the files that are available on our internal network. However, our management team provided an opportunity for the student to work at either the pharmacy services building or an office building if I deemed this access was necessary. I felt that the objectives of a pharmacy informatics rotation could easily be accomplished in a completely remote learning model, unlike the significant challenges of completing an inpatient clinical rotation virtually.

Prior to starting the rotation, I outlined the experience and began with the following quote: "The only constant in life is change," by Heraclitus. Based on feedback from my colleague, I decided to schedule a "virtual office" with the student every morning for one hour and every afternoon for 30 minutes. The morning

touch-base served as time for didactic teaching, while the afternoon touch-base provided the student with an opportunity to ask questions about the meetings we attended during the day or the projects that we were working on. This time also allowed us to review the plans for the next day. I made the decision that these virtual hours would be conducted with cameras on to provide for personal interaction. I allocated activities for the required 240 hours that the student had to complete, which included introductory videos to watch during the first week, two potential larger rotation projects, weekly journal articles for us to review, and a number of smaller projects that the student could work on.

During the rotation, I used Google Drive functionality to share journal and reference documents with the student, and Google Docs to share the rotation overview and daily informatics touch-base documents. WebEx technology was used to provide the student with the opportunity to interact with the EMR, and to learn how build is completed within it. Our pharmacy department uses the layered learning model to assist residents in enhancing their precepting skills. To incorporate this model in the remote environment, our informatics PGY-2 resident participated in our weekly journal club discussions, evaluated the student's journal club presentation, and completed his major project evaluation. I viewed this rotation as a continuous quality improvement project. On a weekly basis, we reviewed our perspectives of what was going right with the rotation and what could be improved, along with how the improvements could be implemented. For example, I realized the need to outline our didactic topic discussions on a weekly basis to allow myself and the student adequate time to prepare for them. Also, I found different resources to increase the student's exposure to pharmacy informatics. In the middle of the rotation, I felt like I might have been overwhelming the student with things to do, so I communicated a prioritized list to him and started to classify different activities as "Must Be Done" and



“Nice To Accomplish.” Finally, at the end of the day when I completed a review of my children’s virtual school, I extended my review time to include my student’s accomplishments for the day to ensure he was on track to successfully complete the rotation.

For the remainder of the academic year, I am scheduled to precept a PGY-1 resident and PGY-2 informatics resident, and plan to use some of the above precepting strategies. I will have video-on morning touch-bases with them for didactic teaching, and afternoon check-ins to ensure that their rotation goals and objectives are being met and provide them with the opportunity to ask questions. I will be asking the resident to evaluate the rotation on a weekly basis to determine how to improve their experience. I will also continue to seek out different resources to enhance my remote precepting skills. During the resident rotations, however, I will not require them to document their end-of-the-day accomplishments, and since both residents are employees, access to the EMR and files within the internal network will not be an obstacle.

The COVID-19 pandemic has

challenged pharmacists in both their professional and personal lives. I was initially hesitant about precepting a remote rotation. However, I was satisfied overall with how my first remote pharmacy informatics rotation turned out. I believe there are adequate resources available for pharmacists to plan and prepare for remote teaching. However, it is important to communicate the rotation format up front so students can prepare, and to be sure that they both want to and are able to complete it. Outlining the rotation in advance is a necessary step to ensure the student has a successful learning experience, while highlighting that plans might need to change to meet the needs of your job responsibilities and the student’s interest.

Julie Pawola is a Clinical Pharmacist, Pharmacy Informatics at UW Health in Madison WI.

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### References

- Gallegos, P, Bonenfant, S, Basalyga V. From the frontline of COVID-19: managing remote rotation. ASHP Podcasts: 2020. Accessed August 15, 2020. <https://www.ashp.org/Professional-Development/ASHP-Podcasts/COVID-19-Updates/COVID-19-Managing-Remote-Rotations?loginreturnUrl=SSOCheckOnly>
- American Society of Health System Pharmacy. (Producer). (2020). Innovative teaching and learning models in the COVID-19 era: parts I & II. [Video]. <http://elearning.ashp.org/products/8277/innovative-teaching-and-learning-models-in-the-covid-19-era-parts-i-ii>.
- Best practices for remote learning at UCSF. University of California San Francisco. Accessed August 15, 2020. <https://ucsf.box.com/s/nqy9ujyf75ypbzquaw2wz8l3ac7z8w0r>
- Bunnell K, Conley E, Stanton M, et al. I am a pharmacy professional and a... virtual teacher. *J Pharm Soc Wisc.* 2020;23(5):6-9. <https://www.jpwi.org/i-am-a-pharmacy-professional-and-a-virtual-teacher.html>

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