

May/June 2022

The Journal

of the Pharmacy Society of Wisconsin



2022 PSW EDUCATIONAL CONFERENCE RECAP



Health Disparities

Continuing Education

6

CE for Pharmacists: **The Pharmacist Role in Veterinary Pharmacy**

Features

3

UpFront: **UpFront: It's Palpable**

12

Precepting Series: **Celebrating Pharmacy Residency Accreditation: Focus on the ASHP Commission on Credentialing**

Original Work

14

Student Feedback During COVID 19: Considerations for Future Remote Learning Innovations

20

Pharmacist-led Anti-seizure Medication Management: Delegation Protocol Implementation and Impact Analysis

25

Health at Every Size®: An Overview of a Mindful Approach for Lifestyle Change

Writing Club

32

Business Member Spotlight: Omar Eliwa, RPh - Welltopia Pharmacy

34

Business Member Spotlight: Smith Pharmacy

37

Business Member Spotlight: Trig's Pharmacy

PSW News

5

PSW Welcomes Sarah Pagenkopf, Director of Professional and Educational Services

Meeting Recap

29

2022 PSW Educational Conference Recap

The Journal

of the Pharmacy Society of Wisconsin

Pharmacist Editor

AMANDA MARGOLIS, PharmD, MS, BCACP

Managing Editor & Creative Content Director

MEGAN GRANT, mgrant@pswi.org

Copy Editor

JENNIFER PITTLERLE

CE Coordinator

PATRICIA THORNEWELL, PharmD

Peer Review Coordinators

MARISA GONINEN, PharmD, BCACP

MICHAEL NAGY, PharmD

KHYATI PATEL, PharmD

SARAH PEPPARD, PharmD, BCPS, BCCCP

ID Corner Series Coordinator

LYNNE FEHRENBACHER, PharmD, BCPS-AQ ID

Precepting Series Coordinator

MELISSA THEESFELD, PharmD

Open Access Coordinator

BRIANNA GROEN, PharmD

AMANDA EGBERT, 2024 PharmD Candidate

EDITORIAL ADVISORY COMMITTEE

CHRISTI ALBERT, PharmD, BCPS

Clinical Pharmacist,
UW Health - Anticoagulation Clinic, Madison

LOREN CARRELL, PharmD

Clinical Pharmacist/Pharmacist in Charge,
Gundersen Health System, La Crosse

MARISA GONINEN, PharmD, BCACP

Pharmacy Clinical Coordinator,
AdvocateAurora Health, Milwaukee

MELISSA HA, PharmD, BCCCP

Clinical Pharmacist, William S. Middleton
Memorial Veterans Hospital, Madison

LYNNE FEHRENBACHER, PharmD, BCPS-ID

Associate Professor of Pharmacy Practice
Concordia University School
of Pharmacy, Mequon

LYNNAE MAHANEY, MBA, BS Pharm

Director, Pharmacy Accreditation
American Society of Health-System Pharmacists

NATE MENNINGA, PharmD

Pharmacy Manager, William S. Middleton Memorial
Veterans Hospital, Madison

MICHAEL NAGY, PharmD

Assistant Professor, Department of Clinical
Sciences, Medical College of Wisconsin School of
Pharmacy, Milwaukee

MIKE OCHOWSKI, RPh, BBA

Formulary Pharmacist, Group Health Cooperative
of South Central Wisconsin, Madison

KHYATI PATEL, PharmD

Assistant Professor of Pharmacy Practice
Rosalind Franklin University of Medicine and
Science College of Pharmacy, North Chicago, IL

SARAH PEPPARD, PharmD, BCPS, BCCCP

Assistant Director of Experiential Education
Concordia University Wisconsin School of Pharmacy

CASSIE SEDGWICK, PharmD

PGY-1 Ambulatory Care Pharmacy Resident,
William S. Middleton Memorial Veterans Hospital,
Madison

TRISHA SEYS RANOLA, PharmD, CGP, CDE

Clinical Pharmacist, William S. Middleton Memorial
Veterans Hospital, Madison

SARA SMITH-SHULL, PharmD, MBA, BCPS

Drug Policy Program, UW Health, Madison

PATRICIA THORNEWELL, PharmD

Medical Education and Grants, Exact Sciences
Corporation, Madison

KRISTIN TIRY, PharmD

Pharmacy Manager, Froedtert & the Medical
College of Wisconsin, Milwaukee

JOSHUA VANDERLOO, PharmD, BCPS

Clinical Pharmacist, Drug Policy Analyst,
University of Wisconsin Hospital and Clinics,
Madison

The Journal of the Pharmacy Society of Wisconsin is a professional publication for original research, review, experience, and opinion articles that link science with contemporary pharmacy practice to improve patient care. Together we can inspire each other to advance our profession with the single purpose of enhancing the lives of our patients.

PSW EXECUTIVE BOARD

MELISSA THEESFELD, PharmD

Chairman of the Board

ELLINA SECKEL, PharmD, BCACP

President

JANET FRITSCH, RPh

President-Elect

RYAN MILLER, PharmD, BCPS

Treasurer

SARAH SORUM, PharmD

Executive Vice President & CEO

PSW BOARD

KATHERINE HARTKOPF, PharmD, BCACP

Region A Director 2019-23

GRETCHEN KUNZE, PharmD, BCPS

Region B Director 2018-22

ASHLEY HELLERMANN RANKIN, PharmD

Region C Director 2019-23

JOYLYN MOORE, PharmD

Region D Director 2018-22

DIANE ERDMAN, PharmD

Region E Director 2021-23

JUSTIN KONKOL, PharmD, BCPS

Region F Director 2018-22

MICHAEL ENDRIES, PharmD, BCPS

Director-at-Large 2019-23

SIRR GRICE, PharmD

Director-at-Large 2021-23

SCOTT LARSON, PharmD

Director-at-Large 2018-22

KATE SCHAAFSMA, MBA, MS, PharmD, BCPS

Director-at-Large 2018-22

SARAH SCHMIDT, PharmD

Director-at-Large 2018-22

NICHOLAS LADELL, PharmD, BCPS

Director-at-Large 2021-23

ERIK JORVIG, PharmD

Dean Concordia University Wisconsin SOP

STEVE SWANSON, PhD

Dean UW School of Pharmacy

GEORGE MACKINNON, PhD, MS, RPh

Dean Medical College of Wisconsin SOP

HOLLY ALTENBERGER, PharmD

Senior & LTC Section Chair 2021-2022

MIRANDA WAGNER, CPhT

Technician Section President 2021-2022

PSW STAFF

ELLEN BRUMMEL

MEGAN GRANT

AMANDA MARGOLIS, PharmD, MS, BCACP

ERICA MARTIN

HELENE MCDOWELL, MS

CHAD NECHVATAL, CPA

SARAH PAGENKOPF, PharmD

RYAN PSYCK

KAY SCHELL

SARAH SORUM, PharmD

KARI TRAPSKIN, PharmD

DANIELLE WOMACK, MPH

Send correspondence to:

Megan Grant, Pharmacy Society of Wisconsin
701 Heartland Trail, Madison, WI 53717, phone: 608-827-9200,
fax: 608-827-9292, thejournal@pswi.org

Authors are encouraged to submit manuscripts to be considered for publication in *The Journal*. For Author Guidelines, see www.jpwi.org

Advertising inquiries:

Megan Grant, Pharmacy Society of Wisconsin, 701 Heartland Trail,
Madison, WI 53717, phone: 608-827-9200, fax: 608-827-9292,
mgrant@pswi.org



The Journal of the Pharmacy Society of Wisconsin is the official publication of the Pharmacy Society of Wisconsin. Subscription included in membership dues. Published bimonthly by the Pharmacy Society of Wisconsin, 701 Heartland Trail, Madison, WI 53717. Opinions expressed by contributors do not necessarily reflect those of PSW.

UpFront: It's Palpable

by Ellina Seckel, PharmD, BCACP, DPLA

A cultural change around work in the United States is palpable. The ways we work, what employees find acceptable at work, and what is expected from work all seem to be changing.

In her podcast [How's Work?](#) psychotherapist Esther Perel teaches us that crises function as accelerators. The pandemic, war, climate change, social justice reckoning, political atmosphere, and other accelerators can cause major life questions to surface for us more intensely than before. Heck, a few weeks ago, I even thought about selling everything and moving to Mexico in search of a simpler life. Leading pool Zumba dancing could be my new calling.

People are grappling with changing priorities and boundaries around work and time. You can see it in the many businesses displaying “looking for help” signs. The degree of difficulty recruiting and hiring feels uniquely different from what we are used to. Some candidates who have been offered jobs are withdrawing at the 11th hour—if they make it that far. Experiences like “ghosting” during the hiring process feel commonplace now, when, in the not-so-distant past, such a practice would have been surprising. People are making major career shifts into industries completely outside their initial areas of training and education, or switching to fully virtual roles. Of course, these changes don't describe the experience for everyone. While many people are seeking changes to their work or job structures, many are also staying in place. But even for those staying in place, there seems to be a not-so-subtle shift in life-work priorities.

All of this makes me quite curious. Are we, as a collective

culture in the United States, evolving to have a different degree of enthusiasm or focus on work in our lives? What does that mean for healthcare as a profession focused on helping?

Esther Perel helps take us beneath the surface to reflect some of what we may be questioning. As I consider the pharmacy profession, I think some of us may be wondering:

- What does having a “full life” mean?
- Should work continue to be my main identity?
- How much am I willing to give to work now that I realize how precious time with loved ones is?
- How can I get unstuck and motivated again?
- Do I still want to be in pharmacy school, or do I want to do something else with my life?
- As a pharmacy technician who enjoys helping patients, do I advocate for better pay in my current role? Or will I have to switch professions to make enough to support my family?
- How much time do I have to spend working as a pharmacist in order to call myself a pharmacist?
- Will I still be a good leader if I work part-time?
- When I spend my time differently, do I feel that I am coasting or not doing a good enough job?
- How did I do that commute every day for so many years before COVID?
- Is it wrong for me to resent my colleagues who can work from home when I cannot?

To add to the complexity of our feelings around work, and grappling with where work lands on our priority lists, Perel also identifies that there is a whole new set of collective expectations

for work. We have never as a society expected more from work. We want from work today what societies have historically gotten from religion and community: belonging, meaning, purpose, connection. We want work to have meaning and to be engaged in work that transcends us to something bigger. Perhaps it is a sign of progress that this type of aspiration for work is available to more people than ever before. At the same time, some workers do not have the privilege of thinking about work this way. Life, socioeconomic, and family circumstances can significantly limit work choice. When you are struggling to survive or ensure your family has food to eat each day, aspiration and meaning in work is a luxury.

Part of me yearns to hang on to what was, the nostalgia of relative workplace stability and the simplicity of having work as the main focus in my life. But another part of me thinks that perhaps this is the change we've needed all along. Could this shift in

priorities be the push we needed to really practice Essentialism—can we do less but better? Can we strip away the extras to focus on the core of what patients really need from us? Can we level up our adaptability quotients and acclimate to the complexities of delivering care in a partially virtual world?

I don't know what the elusive "balanced" life looks like. Or what it means that I am lucky enough to contemplate such a question. But I do believe there is a way to prioritize our personal lives and still ensure stellar work performance for our patients. My boss, Andrew Wilcox, often says, "Let's take care of each other so we can take the best care of patients." If we keep that sentiment at the center of our decision making, we'll figure out this palpable change in our way of work, together.

- Ellina Seckel, PharmD, BCACP, DPLA
PSW President



IT'S MORE THAN A CAREER

At Concordia's School of Pharmacy, we focus on the development of the whole pharmacist in mind, body, and spirit. Throughout the curriculum, students build their skills for a career providing care to and advocating for all patients.

FOR MORE INFORMATION ABOUT CUW VISIT:
[CUW.EDU/PHARMACY](https://www.cuw.edu/pharmacy)

School of
PHARMACY  CONCORDIA
UNIVERSITY
WISCONSIN

PSW Welcomes Sarah Pagenkopf, Director of Professional and Educational Services

My name is Sarah Pagenkopf, and I'm so excited to take on the new challenge of using my knowledge, skills, and enthusiasm in the role of PSW Professional and Educational Services Director. As the newest member of the team, my role will include partnering with several of the PSW advisory committees, including the Educational Programming Committee; the Student Pharmacists Committee; the Technician & Long-Term Care section groups; the Health-System Pharmacy Advisory Committee; and the new Committee on Appointments. I'm also excited to support and collaborate with the PSW Diversity, Equity and Inclusion Taskforce; the Medication Safety Collaborative; and the Pain Stewardship Collaborative!

I will also be a key resource in coordinating educational offerings for PSW, including live and on-demand/virtual continuing education opportunities. I am a contributor to PSW's weekly Fact Facts, getting you the information you need to help you make the best decisions for your patients, practice, and community. And I will be reaching out to many of you to ask you to volunteer to share your knowledge, your practice pearls, and your expertise in care delivery with our membership. PSW members do amazing things each and every day—and I get the honor of showcasing your talents for all our members to see!

More About Me

I was born and lived the first part of my life in Mercer, Wis. Some of my family still reside in Mercer, but I grew up in Jefferson, Wis. where I attended school, before heading to UW-Whitewater for undergrad. I hoped to be a chemistry teacher, but applied to pharmacy school at the UW-Madison School of Pharmacy, and the rest is history. I started working as a Shopko pharmacy technician, and after graduation went right to work as a hospital-based clinical pharmacist. I took on a few different roles

in the last 16 years of practice, as a clinical specialist, medication safety coordinator, application analyst on the Epic team, and clinical coordinator. In my most recent role, I was the Pharmacy Director at Fort HealthCare in Jefferson County.

My pharmacy practice is based in servant leadership and a conscious commitment to investing in the leadership of pharmacy into the future. I'm especially inspired in my mentoring relationships, both with those who took the time to mentor me, and when I'm engaged in mentoring others. I believe that sponsorship of emerging leaders is key to creating paths for diverse leaders, and I believe that leading with your "authentic self" is the best method to assure you are surrounded by those who inspire you to be better, and whom you can inspire to be their best selves. I strive each day to find commonality and mutual benefit to serve the needs of others; to make idea-sharing and collaboration the standard and a safe option for all; and to avoid the creation of barriers that would impede progress toward common goals of the profession.

Personally, I'm a mom, a sister, a daughter, a friend, a wife...and a kid-hauling taxi driver! I LOVE being with my daughter Caroline and my husband Curt on our little farm (no animals) in Ixonia. I like to read, craft, paint, and garden, and I'm a secret crochet enthusiast. So if you are too, send those patterns my way! I enjoy volunteering

my time and efforts in community-based opportunities, especially those that involve kids, food insecurity, and health literacy. (Because pharmacists are great at translating complex medical jargon into real-world speak!)

I have been so welcomed by the membership and PSW team already, and I cannot wait to meet everyone! I hope to see you at Annual Meeting. Please say hello!



PHARMACIST CE:

The Pharmacist Role in Veterinary Pharmacy

by Ashley Srb, 2023 PharmD Candidate, Melissa Smith, 2023 PharmD Candidate, Alexa Bekkerus, 2023 PharmD Candidate, Kane Carstens, 2024 PharmD Candidate, McKay Carstens, 2024 PharmD Candidate



Parmacists are a vital resource for patients and providers when it comes to prescribing the correct medication, and the correct strength, quantity, withdrawal time, and directions for use. One interesting and important subset of pharmacy practice is in veterinary pharmacy. Veterinary pharmacy is a growing field that is rapidly changing, thanks to powerful advocacy from those connected to the profession. Animals, just like humans, may require medication to treat acute or chronic illnesses, and often require a prescription to fulfill these needs. Community pharmacies are easily accessible to pet owners, and are often able to fill veterinary prescriptions. In addition to dispensing veterinary medications at a traditional outpatient pharmacies, some people choose to go into clinical veterinarian pharmacy work, where they serve at a veterinary hospital for inpatient and outpatient animals. Not all commercially made products can be used for animals; some may need to have flavor adjustments; some may need adjustments for the correct weight of the species; some may need to be compounded to be administered a different way (i.e. oral vs. rectal administration). Compounding pharmacists have a unique opportunity to formulate medication for easy administration to their patient population.

Although this is not an all-encompassing list of the ways pharmacists have a vital impact on veterinary medicine, it

CE FOR PHARMACISTS COMPLETE ARTICLE AND CE EXAM AVAILABLE ONLINE: WWW.PSWI.ORG

Learning Objectives

- Identify resources pharmacists can use to review veterinary prescriptions
- Describe what is unique about veterinary pharmacy
- List the different roles a veterinary pharmacist can have within veterinary medicine
- Identify/describe the services that veterinary pharmacists provide
- Recognize limitations and potential harms with dispensing medications to animal patients

demonstrates the wide range of roles within this field.

The authors of this manuscript interviewed a variety of pharmacists who work in veterinary practice, to help raise awareness about their profession. These pharmacists share their experiences, unique aspects of their jobs, and the changes they'd like to see.

Background

Pharmacists are the only healthcare professionals who can legally provide care to both human and non-human patients, yet many community pharmacists are not prepared to provide services to non-human patients. Approximately 42% of pharmacists work in a community pharmacy, but only 27% of pharmacy schools provide didactic coursework in veterinary pharmacy, and 60% provide experiential rotation opportunities for students.^{1,2} There are currently no requirements

Commonly Prescribed Veterinary Prescriptions

- Gabapentin**¹⁰ – agent to prevent feather plucking, anti-anxiety, pain analgesic
 - Species¹: Caged avian, canine, feline
- Insulin**¹¹ – for treatment of high blood glucose
 - Species¹: Canines, felines, ferrets
- MethIMazole**¹² – antithyroid medication to treat hyperthyroidism
 - Species¹: Felines and guinea pigs
- Veterinary-only non-steroidal anti-inflammatories (NSAID's)**¹³ – relieve pain and reduce inflammation
 - Species¹: Canines, equines, felines
- PredniSOLONE**¹⁴ – anti-inflammatory and joint pain reduction
 - Species¹: Canines, felines (cannot metabolize prednisone), ferrets
- Pregabalin**¹⁵ – anti-seizure medication, neuropathic pain management
 - Species¹: Canines, felines

¹ Species indicated is not an all-inclusive list of species prescribed this medication.

for pharmacy schools to provide this education, as the NAPLEX does not include veterinary questions.² In 2014, the American Pharmacists Association (APhA) acknowledged the need for more education for pharmacists in veterinary pharmacy and encouraged expanding knowledge of veterinary drugs and their usage. In 2021, American College of Veterinary Pharmacy (ACVP) delegates received approval to update the definition of a “patient” to include the terms human and non-human. This is a big step in expanding awareness of the growing need for more education for pharmacists.³

If a pharmacist lacks knowledge about how to review a veterinary prescription, it can cause problems for both the veterinarian prescribing the medication and the pharmacist filling the prescription. Almost all veterinary medications are dosed based on weight and are specific to the species, so it is imperative that prescriptions contain the weight and species to verify the correctness of the prescription, even though it is not required by law. In a recent study from McDaniel et al, it was found that 97.8% of veterinary prescriptions omitted the weight of the patient. This indicates that, in most cases, both the veterinarian and the pharmacist are unaware of the importance of weight-based dosing for non-human prescriptions.⁴ Another error that can occur when verifying veterinary prescriptions is making a request for a National Provider Identifier (NPI), which is a unique identification number for covered health care providers. However, veterinarians are not eligible for NPIs, because they are not defined in regulations as healthcare providers.⁵ Instead, pharmacists can request a DEA number or license number. Lastly, it is important that pharmacists know that they cannot legally recommend over-the-counter (OTC) medications for pets without a recommendation from a veterinarian.⁶ For example, ibuprofen can cause severe gastrointestinal symptoms in dogs, and kidney disease in dogs and cats.⁷ Having additional knowledge about appropriate prescription requirements, weight-based dosing, and OTC safety can help prevent medication errors and build rapport with the local veterinary community.

Pets are diagnosed with similar disease states to humans every day, and due to

Unsafe Over the Counter Medications for Pets

Acetaminophen (APAP)¹⁶

- Contraindicated in felines and ferrets
 - » Felines are deficient in uridine diphosphate glucuronosyltransferase (UGT) a pathway in the metabolism of APAP. APAP is more likely to be converted into p-aminophenol which can cause methemoglobinemia in felines causing tachycardia, increased respiratory rate, fatigue, cyanosis, and hypothermia.
- Caution use in canines
 - » Signs/symptoms: hepatotoxicity, hepatic failure, nausea/vomiting, jaundice, fatigue, anorexia, and abdominal pain

Decongestants¹⁷

- Contraindicated in felines and canines
 - » Signs/symptoms: vomiting, hypertension, dilated pupils, seizures and abnormal heart rhythms and rates

Aspirin¹⁸

- Caution use in felines
 - » Signs/symptoms: vomiting, diarrhea, seizures, CNS/respiratory depression, GI ulcers, fluid retention

Ibuprofen and Naproxen⁷

- Contraindicated in felines and canines
 - » Long half-life in canines and rapidly absorbed
 - » Felines lack glucuronidation pathway
 - » Signs/symptoms: vomiting, diarrhea, seizures, anemia, GI ulcers

their size, anatomy, and pharmacokinetics, they may need customized dosage forms of common medications. That is where the art of compounding plays a big role in veterinary pharmacy. Compounding pharmacies can provide multiple formulations, including treats and suspensions in multiple flavors, transdermal gels, and long-acting antibiotic ear gels. An important aspect of having a pet is the human-animal bond, and the goal is to make administering medications and maintaining adherence easier for the owner and improve the pet’s quality of life.⁸

Kevin Hoey, RPh

Hoey Apothecary, Madison, Wis.

Kevin Hoey, RPh, is a community and veterinary pharmacist in Madison, Wisconsin, who owns and operates his own compounding pharmacy practice. His practice, Hoey Apothecary, is a compounding-only pharmacy, but that is not where his pharmacy career began. Before Hoey Apothecary, Hoey owned Door Creek Pharmacy, where few prescriptions were compounded. At Door Creek, usually fewer than 10 compounded prescriptions were made each week. Now, at Hoey Apothecary, it’s common to see close to 1,000 compounded prescriptions weekly. Hoey Apothecary provides services in a variety of areas, including women’s health,

autoimmune disorders, hormonal health, and pain management. The pharmacy serves a whole community of patients, many of them animals.

Animals and veterinary medicine played a significant role in the evolution of Hoey Apothecary. Back when Hoey began his compounding business, he had difficulty finding providers who were interested enough to promote it. However, it was

What Should I Counsel on for Veterinary Prescriptions?¹⁹

- Recommendations of how to administer the medication to their pet
 - » Oral
 - Pill pockets
 - Placing medication in back of throat and massaging throat
 - Pet pill gun
 - » Solutions
 - Syringe applicators
 - Mix in with food if stable
 - » Injections
 - Subcutaneous: Tent skin between shoulder blades and administer between middle of tented skin area
- Review indication with applicable resource aid for the client
- Discuss side effects
- Indicate if the medication can be taken with food or without food
- Indicate if the medication can be crush

Prescription Reminders^{4,5}

- Veterinarians do not have NPI numbers
- Request a weight as most medications are weight based
- Request species to verify the dose and formulation is correct

veterinarians who were most receptive to his services. From there, he formed many partnerships with veterinarians, and veterinary pharmacy has become a large part of Hoey's current practice.

Hoey mentions the benefits of treating animals with compounded pharmaceuticals, and has emphasized the uniqueness of animal requirements across all kinds of species. For example, due to physiology, rabbits, rats, and other small rodents require water-based suspensions instead of oil-based suspensions, due to their inability to vomit.⁹ What may be therapeutic in a cat with one drug or dose may prove to be toxic in a dog or rabbit with the same drug or dose. Additionally, understanding the different biologies of each creature can help the pharmacist understand how drugs are metabolized in non-human species. An important message for pharmacy practitioners and prescribers is recognizing that compounding needs to be appropriately tailored, and knowing that there are resources available detailing what medications should and should not be given to certain animals. One suggestion Hoey has is to establish a minimum standard of care, where a certain universal level of education is met and a certification is completed, to practice compounding for animals. Achieving these credentials is one way compounding pharmacies making prescriptions for the animal population can ensure they are made correctly and safely.

Having a practice with a combination of services, treating both humans and animals, offers a unique question: What more can pharmacists do for pets and animals as far as providing quality care? For example, many studies exist about the therapeutic uses of low-dose Naltrexone in humans; however, very few studies exist explaining the potential therapeutic uses in animals. In Hoey's experience, several uses in canines have helped heal wounds, return function and mobility, and provide

extension of life. However, lack of literature is a limitation to making this treatment or similar treatments more widely known and applied. Furthermore, what is known about holistic care in humans who deal with inflammatory diseases is a subject worth exploring in animals. Hoey mentions that often the animals he treats belong to owners who consider them family members. Pharmaceutical treatments, lifestyle modifications, and counseling provided to human patients by pharmacists may also be applied by veterinary pharmacists to animal patients.

Shelby Williams, PharmD, DICVP, FSVHP

U.W. Veterinary Care Pharmacy, Madison, Wis.

Shelby Williams, PharmD, DICVP, FSVHP, is a board-certified veterinary pharmacist who is currently employed at the University of Wisconsin-Madison Veterinary Care Teaching Hospital. She's been interested in veterinary pharmacy since she was in pharmacy school, and worked as a veterinary assistant, as internships were limited in availability. As a professional working in the veterinary system, Williams herself owns multiple pets. One of her pets had behavioral issues, and Williams would often need to visit the veterinarian's office to pick up prescribed medications. In her case, she discovered that most veterinarians did not have accurate knowledge about the pharmacological specificities of the medications, and how they affected various animal species. This frustrated her and made her want to change this, especially for pets whose owners aren't medically fluent. This led Williams to explore the world of veterinary pharmacy following her pharmacy school graduation from Washington State University, in the form of a veterinary pharmacist residency at North Carolina State University.

When Williams describes her site, she explains that, since it is a veterinary teaching hospital, they carry out many different specialties, including ophthalmology, critical care, emergency, primary care, and dermatology. Her practice serves large and small animals, and their partnership with the veterinary school enables them to treat a wide variety of unique cases. A few especially noteworthy patients Williams

Valuable Resources

Ontario Veterinary College - Firstline²⁰

- Online: <https://app.firstline.org/en-cvma/clients/552-ontario-veterinary-college>

Exotic Animal Formulary²¹

- Online: <https://www.sciencedirect.com/book/9780323444507/exotic-animal-formulary>
- Paper copy available

Pet Poison Helpline²²

- Online: <https://www.petpoisonhelpline.com/>

Plumb's Veterinary Handbook²³

- Online: <https://plumbs.com/features/drug-monographs/>
- Paper copy available

Saunders Handbook of Veterinary Drugs²⁴

- Paper copy available

has treated include sick exotic animals from the local zoo—like when she needed to compound anesthetic water to place a fish under anesthesia for a procedure, or compound chicken gummies for a Binturong. She also mentions that treating the local zoo animals is her favorite part of her job, as it gives her these unique opportunities, like making narcotic kits for polar bears. Animals also can have a variety of different medications which keeps Williams on her toes, especially since dosing for different animal species varies widely. Another opportunity her practice site focuses on is inpatient and outpatient services for the community. This helps Williams spread her knowledge of using medications in animals to pet owners, so they don't run into the same issue she did all those years ago. She runs a robust cancer research program as well, where she provides chemotherapy for various species. They also perform non-sterile compounding to make

Formulation Options for Compounding

- Treats (variety of flavors)
- Suspensions
 - » Oil based (cats, dogs)
 - » Water based (cats, dogs, small mammals, reptiles)
- Transdermal gels (common for cats)
- Long acting antibiotic ear gels⁷
- Topical creams

Training/Certification/Licensure Needed to Work in Veterinary Pharmacy

Students

- Shadow
- Apply for a job at a compounding pharmacy, veterinary teaching hospital, APPE rotation at a Veterinary school, compounding pharmacy or PCCA drug information
- Veterinary pharmacy didactic course (through school or virtual course)
- PCCA veterinary compounding online course- students can attend this course after second year of pharmacy school (summer/fall)
<https://www.pccarx.com/PCCAEducation/Institute>

Pharmacists

- Graduate from an accredited pharmacy institution
- PowerPak- continuing education, but also good info for students
<https://www.powerpak.com/vet/>

suspensions and capsules in addition to filling medications.

Williams stays up to date on her knowledge of medication use in animals through various organizations, such as the American College of Veterinary Pharmacists (ACVP) and Society of Veterinary Hospital Pharmacists (SVHP). She does this by attending meetings and networking with others to learn from experts in the field. Williams says that there is a variety of resources that can be used by other veterinary pharmacists or any pharmacist in the healthcare field. Some of these resources include Plumbs, Carpenters exotic formulary, Saunders Handbook of Veterinary Drugs, and the Food Animal Residue Avoidance Databank (FARAD). They provide pertinent information regarding drug interactions, dosing, withdrawal times for food animals, and pharmacokinetic and pharmacodynamic information related to animals.

Williams says that her dreams for the future of veterinary pharmacy are seeing veterinary therapeutics become a required course in pharmacy schools and seeing the implementation of required veterinary medicine continuing education. Another important point she emphasizes is improving communication with community pharmacies, because they fill many veterinary prescriptions. Education of pharmacy students is one area where Williams feels veterinary pharmacists can have an impact. Here, they can teach students about prescription safety, how to verify veterinary prescriptions, and address medication diversion that could be seen in veterinary medicine.

Deborah Clark, RPh

Professional Compounding Centers of America, Charlotte, North Carolina

Deborah Clark, RPh, is a clinical compounding and veterinary pharmacist who works for the Professional Compounding Centers of America (PCCA) with specialized knowledge and expertise in the medication formulation for and treatment of animals. She is trained in modern compounding techniques and has had vast experience applying her skills to a diverse population of veterinary patients. As a consultant, a unique part of her practice is taking phone calls from PCCA members, such as pharmacists, physicians, and veterinarians, from around the United States to answer questions related to both human and veterinary pharmacy. Topics can relate to drug dosing, formulation, or delivery. The questions specific to animals can pose an extra challenge—they require extensive knowledge of the physiology and pharmacokinetics of different species and how those factors can affect treatment outcomes.

These challenges are what make veterinary pharmacy practice unique. The care for animals is an important area of pharmacy, but knowledge about the medicinal treatment of different species is not always accessible to community pharmacists, especially those with little to no exposure to veterinary needs. Clark uses her pharmacy practice and expertise to provide guidance to help fill those knowledge gaps. If the information is not readily available, possibly due to limited studies on a particular species, she maximizes literature research and data collection to recommend

the best solution. In many cases, this allows veterinary pharmacists to become creative in their treatment strategies. For example, an aquarium shark that has sustained a wound poses a challenge for treatment. A multitude of considerations have to be taken into account: the location of the wound, the swimming needs of the shark, drug formulation and delivery requirements, and durability of the medication. Veterinary pharmacists with compounding training are equipped to address these concerns. This sort of attention to care can go a long way for animal patients. Animals suffering from disease or injury can find relief, especially when commercial products do not perfectly fit the situation. For example, a canine patient with recurrent ear infections can benefit from a compounded medication formulated and delivered to its specific needs.

Many pharmacists are in a position to provide care to both humans and animals, but the usually limited knowledge of veterinary pharmacy can lead to gaps in care and missed opportunities. A great way to educate pharmacists is to introduce them to veterinary pharmacy while in pharmacy school. This can be a challenge, because some schools do not have any form of veterinary coursework. The institutions that do, however, typically only offer vet-related courses as electives. This may be enticing to those interested in veterinary pharmacy, but it can be a difficult sell to those who have no interest or experience with veterinary pharmacy practice. If there is a way to introduce it within the required pharmacy curriculum, it may promote more interest in taking the elective. At minimum, Clark wants to keep animals safe from medication mistakes that occur when pet owners or pharmacists mistakenly assume a particular drug or formulation will help.

What conferences are available to attend?

- American College of Veterinary Pharmacist (ACVP) Veterinary Pharmacy Conference
- Society of Veterinary Hospital Pharmacists (SVHP) Conference
- Veterinary Pharmacy Conference (VPC)
- Midwest Veterinary Conference (MVC)
- Veterinary Meeting & Expo (VMX)

An example is dispensing gabapentin that contains xylitol (a toxicity to cats and dogs), which is a formulation commonly found in community pharmacies. Animals have different dietary requirements, metabolisms, and kinetics that can cause significant toxicity and death with this formulation. Clark encourages others to use resources like her, veterinary pharmacists in the community, or a veterinary hospital that contains a pharmacy to receive credible information on the best way to care for an animal.

Conclusion

The practice of veterinary pharmacy encompasses a wide variety of active and engaged pharmacists. Each one of the pharmacists highlighted here shared their passion for their career path and their continuous advocacy for the improvement of student pharmacist education, as well as their passion to continually engage and network with others in the profession. Lastly, each pharmacist expressed their willingness to constantly promote the improvement of veterinary medicine.

The authors of this publication would like to give a warm thank you to Kevin Hoey, RPh; Shelby Williams, PharmD, DICVP, FSVHP; and Deborah Clark, RPh, for their willingness to share information regarding their practice and expertise in veterinary medicine.

Ashley Srb, Melissa Smith, and Alexa Bekkerus are 2023 PharmD Candidates at the University of Wisconsin-Madison School of Pharmacy in Madison, WI. Kane Carstens and McKay Carstens are 2024 PharmD Candidates at the University of Wisconsin-Madison School of Pharmacy in Madison.

Acknowledgements: We want to thank the three pharmacists interviewed for this article. We appreciate your time and willingness to share your experiences and thoughts. You all have been very valuable resources and without you, we would not have been able to complete this article.

Disclosure: The authors declare no real or potential conflicts or financial interest in any product or service mentioned in the manuscript, including grants, equipment, medications, employment, gifts, and honoraria.

References

1. Pharmacists: Occupational outlook handbook. U.S. Bureau of Labor Statistics. Published April

18, 2022. Accessed April 20, 2022. <https://www.bls.gov/ooh/healthcare/pharmacists.htm#tab-3>

2. Elaimy C, Melton B, Davidson G, Persky A, Meyer E. Appraisal of the availability of veterinary pharmacy didactic and experiential learning opportunities at pharmacy programs. *Am J Pharm Educ.* 2022;86(4):8681. doi:10.5688/ajpe8681

3. ACVP proposal to expand definition of "patient" approved by APhA House of Delegates. American College of Veterinary Pharmacists. Published March 17, 2021. Accessed April 15, 2022. <https://vetmeds.org/acvp-proposal-to-expand-definition-of-patient-approved-by-apha-house-of-delegates>

4. McDaniel M, Glazier E, Truong N, et al. Veterinary prescription errors in a community pharmacy setting: a retrospective review. *J Am Pharm Assoc.* 2022;62(2):512-518. doi:10.1016/j.japh.2021.11.007

5. National Provider Identifier (NPI) numbers and veterinarians. American Veterinary Medical Association. Accessed April 15, 2022. <https://www.avma.org/advocacy/state-local-issues/national-provider-identifier-numbers-and-veterinarians>

6. Frankel G, Kusno A, Louizos C. Five things every community pharmacist should know when dispensing for 4-legged patients [published correction appears in *Can Pharm J (Ott)*. 2016 Mar;149(2):NP1]. *Can Pharm J.* 2016;149(2):99-106. doi:10.1177/1715163516628543

7. Ibuprofen is toxic to dogs. Pet Poison Helpline. Accessed April 15, 2022. <https://www.petpoisonhelpline.com/poison/ibuprofen>

8. Veterinary knowledge strengthens human-animal bond. Veterinary Practice News. Published June 3, 2021. Accessed April 15, 2022. <https://www.veterinarypracticenews.com/veterinary-knowledge-strengthens-human-animal-bond>

9. Mealey KL. Pharmacotherapeutics for Veterinary Dispensing. Hoboken: Wiley Blackwell; 2019.

10. Gabapentin. Drug Monograph. Plumb's Veterinary Drugs | Webster Family Library. Accessed April 15, 2022. <https://plumbs.com>

11. Insulin Glargine. Drug Monograph. Plumb's Veterinary Drugs | Webster Family Library. Accessed April 15, 2022. <https://plumbs.com>

12. Methimazole. Drug Monograph. Plumb's Veterinary Drugs | Webster Family Library. Accessed April 15th, 2022. <https://plumbs.com>

13. Nonsteroidal Anti-inflammatory Drug (NSAID). Patient guide. 2022.

14. Prednisolone. Drug Monograph. Plumb's Veterinary Drugs | Webster Family Library. Accessed April 15, 2022. <https://plumbs.com>

15. Pregabalin. Drug Monograph. Plumb's Veterinary Drugs | Webster Family Library. Accessed April 15, 2022. <https://plumbs.com>

16. Acetaminophen. Pet Poison Helpline. Published April 1, 2022. Accessed April 15, 2022. <https://www.petpoisonhelpline.com/poison/acetaminophen>

17. Decongestants. Pet Poison Helpline. Published March 3, 2020. Accessed April 15, 2022. <https://www.petpoisonhelpline.com/poison/decongestants>

18. Aspirin. Pet Poison Helpline. Published March 3, 2020. Accessed April 15, 2022. <https://www.petpoisonhelpline.com/poison/aspirin>

19. Black T. How to give medicine to your pet by mouth. ACVO Public. Published September 16, 2020. Accessed April 25, 2022. <https://www.acvo.org/tips-treatments-tricks/how-to-give-medicine-to-your-pet-by-mouth>

20. Firstline. Clinical decision support platform. Firstline. Accessed April 25, 2022. <https://firstline.org>

21. Exotic Animal Formulary. ScienceDirect. Accessed April 25, 2022. <https://www.sciencedirect.com/book/9780323444507/exotic-animal-formulary>

22. Pet Poison Helpline. Published July 3, 2021. Accessed April 25, 2022. <https://www.petpoisonhelpline.com>

23. Find up-to-date Veterinary Drug Information: Plumb's Veterinary Drugs. *Plumb's*. Published May 26, 2021. Accessed April 25, 2022. <https://plumbs.com/features/drug-monographs>

24. Papich MG. Saunders Handbook of Veterinary Drugs. Missouri: Saunders Elsevier; 2007.

Assessment Questions

- What resources can pharmacists use to review veterinary prescriptions?
 - Plumb's
 - Lexicomp
 - Micromedex
 - Epocrates
- What medication is appropriate for a veterinary patient?
 - Prednisone for a cat
 - A compounded oil-based suspension for a rabbit
 - A compounded water-based suspension for a cat
 - Ibuprofen for a dog
- True or False:** Veterinary pharmacists mainly work in clinical settings.
 - True
 - False
- True or False:** compounding, outsourced consultation, and clinical pharmacy are all areas veterinary pharmacists can be found.
 - True
 - False
- True or False:** Veterinarians meet the requirements for National Provider Identifier (NPI) numbers, therefore it is required for prescriptions.
 - True
 - False
- True or False:** legally pharmacists can recommend over the counter medications if a client is recommended a product from their veterinarian.
 - True
 - False
- Which answer best describes the role of a veterinary clinical compounding pharmacist?
 - Provide guidance to community and veterinary pharmacists on the best treatment for many species

- b. To compound medications generically for various animal species
 - c. Work in a veterinary hospital alongside veterinarians
 - d. Administer compounded injectable medications to animals
8. What can pharmacy students and pharmacists do to increase their knowledge within veterinary pharmacy?
 - a. Pharmacy students can seek out a veterinary pharmacy course while in pharmacy school
 - b. Pharmacists can choose veterinary specific continuing education through PowerPaks or attendance at a Veterinary Pharmacy conference.
 - c. Use Plumb's or other drug resources when reviewing commonly prescribed veterinary medications
 - d. All the above
 9. Did the activity meet the stated learning objectives? (if you answer no, please email sarahs@pswi.org to explain)
 - a. Yes
 - b. No
 10. 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.
 11. 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.
 12. 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.
 13. How useful was the educational material?
 - a. Very useful
 - b. Somewhat useful
 - c. Not useful
 14. How effective were the learning methods used for this activity?
 - a. Very effective
 - b. Somewhat effective
 - c. Not effective
 15. Learning assessment questions were appropriate.
 - a. Yes
 - b. No
 16. Were the authors free from bias?
 - a. Yes
 - b. No
 17. If you answered "no" to question 16, please comment (email info@pswi.org).
 18. Please indicate the amount of time it took you to read the article and complete the assessment questions.

CE FOR PHARMACISTS

Continuing Education Credit Information



The Pharmacy Society of Wisconsin is accredited by the Accreditation Council for Pharmacy Education as a provider of continuing pharmacy education.

Continuing education credit can be earned by completing the self assessment questions. Questions may be completed online at www.pswi.org or by mailing completed answer form to PSW, 701 Heartland Trail, Madison, WI 53717. Participants receiving a score of 70% or better will be granted 1 hour (0.1 CEU) credit through CPE Monitor within 60 day of quiz completion. Accurate birth date (MMDD) and CPE Monitor ID must be provided in order to receive this credit as required by ACPE.

This CE offering is offered free-of-charge to all PSW members. Nonmembers are charged \$20 for each exam submitted to cover administrative costs.

Submit Your CE Online!

www.pswi.org/Education/Journal-CE



Quiz Answer Form

circle one answer per question

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

May/June 2022

The Pharmacist Role in Veterinary Pharmacy

ACPE Universal Activity Number:
0175-0000-22-100-H04-P

Target Audience: Pharmacists

Activity Type: Knowledge-based

Release Date: May 1, 2022

(No longer valid for CE credit after May 1, 2025)

Name _____ Designation (RPh, PharmD, etc.) _____

CPE Monitor # _____ DOB (MMDDYY) _____

Preferred Mailing Address _____

City _____ State _____ Zip _____

Is this your home or work address?

PRECEPTING SERIES:

Celebrating Pharmacy Residency Accreditation: Focus on the ASHP Commission on Credentialing

by Marnie Wickizer, PharmD, Julie Dagam, PharmD, BCPS, FASHP

The American Society of Health-System Pharmacists (ASHP) is the sole accrediting body for pharmacy residency training programs.¹ The ASHP Commission on Credentialing (COC) is responsible for developing and recommending pharmacy residency training program accreditation standards and administering the accreditation, including assessing program compliance with the standards and recommending accreditation status.² The COC consists of appointed individuals with diverse backgrounds and areas of practice,³ who are each passionate about residency training and its continuous improvement. The COC regularly considers and collaborates with other residency accreditation bodies (medical, nursing, etc.), professional pharmacy organizations, and practice advancement focus groups.

History and Growth

The history of pharmacy residency training began in the early 1960s, when the first formal residency training programs and accreditation standards were developed. Since then, the practice of pharmacy, residency programs, and accreditation standards have evolved to meet the needs of our patients and our profession.⁴ Accordingly, the past several decades have seen significant residency-program growth and development across practice environments; changes in nomenclature and length of accreditation cycle; development and implementation of tools and technology to support the recruitment process and program administration; and many other advancements.

The COC was created in 1977 and reports to the ASHP Board of Directors.^{5,6} Since its inception, the COC, in partnership with the Accreditation Services Office

(ASO) of ASHP, plays an integral part in advancing our profession through residency training. Residency growth, distribution, and capacity information and COC updates are available regularly through sources including the Accreditation Services and COC Residency Town Hall sessions held at national meetings (like the ASHP Midyear Clinical Meeting and the National Pharmacy Preceptors Conference) and the ASHP Accreditation Services newsletter *Communique*, which is published twice each year and available online.⁷

What are the Regulations, the Standard, and the CAGOs?

The *ASHP Regulations on Accreditation of Pharmacy Residencies* document describes the policies governing the accreditation process and procedures for seeking and maintaining accreditation.⁸

The ASHP Accreditation Standard (“The Standard”) describes the criteria used in the evaluation of programs that apply for accreditation and reaccreditation. It is organized into sections encompassing the requirements for all aspects of residency training and for the practice site in which the training is conducted, including requirements and selection of residents, program requirements and policies, residency program design and conduct, requirements of the residency program director and preceptors, and pharmacy services.⁹ These requirements serve as the basis for evaluating a residency program. Accreditation helps ensure that residents receive high-quality training consistent with the required competency areas, goals, and objectives (CAGOs).^{10,11}

The CAGOs are specific to the residency type, and are a required component of residency training. The competency areas

are overarching categories that describe capabilities of residency graduates. Each competency area is supported by one or more goals (broad statements of abilities), and each goal is further defined by one or more objectives (observable, measurable statements describing what residents will be able to do as a result of participating in the residency program). For example, if “Patient Care” is an overarching category (called a “Competency Area”), and one of the goals supporting patient care is “Ensuring continuity of care during patient transitions between care settings,” then defining that residents will be able to “Manage transitions of care effectively” is an associated objective.¹⁰ Programs are required by The Standard to include the CAGOs in their design.

Residency program directors and preceptors can view the relationship between these three critical components in this way:

- The *ASHP Regulations on Accreditation of Pharmacy Residencies* state the rules to follow.
- The Standard describes how to conduct your program.
- The CAGOs detail what skills to teach and evaluate over the course of the program.

The COC, in partnership with ASHP Accreditation Services, creates and maintains these components as well as guidance materials, policies, preceptor/program development tools, and examples of documents compliant with The Standard for programs to reference. While all materials have evolved with time, they have always served to challenge programs to continue to elevate the competence of residents and advance pharmacy practice.

Biannual COC Meetings

The COC members, ASHP Accreditation Services Office leadership and ASHP Lead Surveyors meet twice yearly in March and August. The meetings are typically held in person at ASHP headquarters in Bethesda, Maryland, although they have been held virtually during the pandemic. A component of the total body of work the COC accomplishes is assessing program accreditation compliance through the survey process and recommending accreditation decisions to the ASHP Board of Directors. The timing of the biannual meetings is intentional to best support the COC's significant role in accomplishing this charge. When programs are due for an initial or reaccreditation survey, the survey team, consisting of an ASHP Lead Surveyor and one or more volunteer practitioner surveyors, conducts a thorough review of each program against The Standard. In addition to serving as volunteer practitioner surveyors, COC members are closely involved in reviewing documentation from all programs surveyed during each cycle. Together, this partnership ensures consistency and quality in the entire process.

Although the timing of the COC meetings corresponds with the cycle of survey team review and recommendations, the COC handles many other accreditation-related responsibilities. COC workgroups are often formed to address specific issues. These workgroups, in partnership with ASHP Accreditation Services and Lead Surveyors, inform and support accomplishing the breadth of the COC's work. Depending on the nature of the issue and time sensitivity, the COC often meets virtually in addition to meeting in March and August to discuss and vote on workgroup recommendations and other pertinent issues.

The Future

The ASHP long-range vision report acknowledges that growth in pharmacy residencies is necessary to meet pharmacy school graduate demand and employer needs. Additionally, resident training will include further soft skill development and leadership experience, along with population health, social determinants of health, technology and data, and interprofessional care expertise.¹²

The process of revising the accreditation standards for Post-Graduate Year One and Year Two (PGY1 and PGY2) residency training is currently underway. The main goals with this revision include:

- Harmonize all PGY1 (Pharmacy, Community-Based, and Managed Care) and PGY2 Standards into a single Residency Accreditation Standard that applies to all programs
- Add well-being and resilience into The Standard
- Add diversity and cultural competence into The Standard
- Simplify and reduce duplications
- Address preceptor qualifications
- Refresh pharmacy services

Many source documents were used to guide the revision, including the ASHP Long Range Vision for the Pharmacy Workforce¹² and the ASHP Practice Advancement Initiative 2030 Recommendations,¹³ to ensure the revision is forward-thinking and continues to promote the advancement of our profession. The COC focus on innovation, optimized patient health, and high-quality training will, of course, remain. The revised Standard became available for public comment at the end of 2021, and feedback is currently being incorporated. With the current timeline, programs will adopt the revised and harmonized Residency Accreditation Standard in 2023.

Marnie Wickizer is the Residency Program Director, PGY1 Managed Care Pharmacy at Navitus Health Solutions in Madison, WI. She is the current AMCP representative to the ASHP Commission on Credentialing. Marnie serves as a practitioner surveyor for PGY1 Managed Care Pharmacy Residency Programs and PGY2 Population Health Management and Data Analytics Pharmacy Residencies. Julie Dagam is the Residency Program Manager at Advocate Aurora Health in Milwaukee, WI. She is the past-chair of the ASHP Commission on Credentialing, and was Chair in 2021. Julie serves as a practitioner surveyor for PGY1 Pharmacy Residency Programs and PGY2 Neurology Pharmacy Residency programs.

Corresponding authors:

marleen.wickizer@navitus.com
Julie.dagam@aah.org

Disclosure: The authors declare no real or potential conflicts or financial interest in any product or

service mentioned in the manuscript, including grants, equipment, medications, employment, gifts, and honoraria.

References

1. Accreditation Services – ASHP. Accessed November 18, 2021. <https://www.ashp.org/professional-development/accreditation-services?loginreturnUrl=SSOCheckOnly>
2. Councils and Committees – Commission on Credentialing – ASHP. Accessed November 18, 2021. <https://www.ashp.org/about-ashp/our-leadership/councils-and-committees/commissions/commission-on-credentialing>
3. Commission on Credentialing – ASHP. Accessed November 18, 2021. <https://www.ashp.org/professional-development/residency-information/other-information/commission-on-credentialing?loginreturnUrl=SSOCheckOnly>
4. Letendre DE, Brooks PJ, Degenhart ML. The evolution of pharmacy residency training programs and corresponding standards of accreditation. *Pharm Pract Manag Q.* 1995;15(2):30-43.
5. Clark T. Celebrating 50 years of advancement in pharmacy residency training. *Am J Health Syst Pharm.* 2014;71(14):1190-1195. doi: 10.2146/ajhp140112
6. Letendre DE. Directions for postgraduate pharmacy residency training. *Am J Hosp Pharm.* 1990;47:85-91.
7. Residency Program Resources – ASHP. Accessed November 18, 2021. <https://www.ashp.org/professional-development/residency-information/residency-program-resources?loginreturnUrl=SSOCheckOnly>
8. ASHP Regulations on Accreditation of Pharmacy Residencies. Accessed November 18, 2021. <https://www.ashp.org/-/media/assets/professional-development/residencies/docs/accreditation-regulations-residencies.ashx>
9. Guidance Document for the ASHP Accreditation Standard for Postgraduate Year One (PGY1) Pharmacy Residency Programs (Guidance Updated March 2021). Accessed November 18, 2021. <https://www.ashp.org/-/media/assets/professional-development/residencies/docs/guidance-document-PGY1-standards.ashx>
10. PGY1 Competency Areas – ASHP. Accessed November 18, 2021. <https://www.ashp.org/professional-development/residency-information/residency-program-resources/residency-accreditation/pgy1-competency-areas>
11. PGY2 Competency Areas – ASHP. Accessed November 18, 2021. <https://www.ashp.org/professional-development/residency-information/residency-program-resources/residency-accreditation/pgy2-competency-areas>
12. ASHP long-range vision for the pharmacy workforce in hospitals and health systems. *Am J Health Syst Pharm.* 2020;77(5):386-400. doi: 10.1093/ajhp/zxz312
13. ASHP Practice Advancement Initiative 2030: new recommendations for advancing pharmacy practice in health systems. *Am J Health Syst Pharm.* 2020;77(2):113-121. doi: 10.1093/ajhp/zxz271

Student Feedback During COVID19: Considerations for Future Remote Learning Innovations

by Amber B. Clemmons, PharmD, BCOP, FHOPA, Zachary A. Pape, PharmD, BCACP, Michael W. Nagy, PharmD, Beth Phillips, PharmD, FCCP, FASHP, BCPS, BCACP

The COVID-19 pandemic prompted faculty in higher education to deliver instruction and assessment via a fully remote learning environment (RLE) to accommodate the new social distance guidance.^{1,2} As the learning environments within pharmacy programs across the country were adapted to meet student needs in accordance with the Center for Disease Control (CDC) guidelines, students and faculty were faced with new challenges related to course delivery, communication, class participation, assessment, and ensuring curricular goals continued to be met. As schools moved forward with new plans for course delivery within the RLE, assurance that programs could adapt and meet student needs played an even greater role in the academic setting. Student-based feedback has traditionally been a valuable tool for ensuring quality improvement within a pharmacy curriculum, and with rapid conversion to full RLE, this feedback was sought out by many programs to enhance and ensure student competency was maintained. We aim to report student perceptions of implementation of RLE in two distinctive schools of pharmacy in order to provide further insight into optimization of RLE during the COVID-19 pandemic.

Methods

This study combined student course evaluation data from two schools of pharmacy. Surveys from both schools were administered electronically to students following the completion of courses in the spring of 2020 during the COVID-19 pandemic, following at least one round of RLE utilization within their respective curriculums. This project was approved by the University of Georgia (UGA) Institutional Review Board (IRB) and was

Abstract

Introduction: The COVID-19 pandemic abruptly changed higher education from face-to-face delivery to remote learning environments. Student feedback is a valuable tool that ensures innovations in content delivery are effective and challenges are addressed during the pandemic.

Objective: Evaluate student perceptions on remote learning in two distinctive schools of pharmacy.

Methods: This report details student feedback in the remote learning environment at two schools of pharmacy during the pandemic in spring 2020. Schools of pharmacy organized distinct surveys which included both Likert scale and qualitative questions reflecting on student experiences with remote learning. Responses were reported descriptively, and qualitative comments analyzed via content analysis.

Results: Student responses within both programs were positive regarding the transition to remote learning with students outlining several beneficial aspects of the change. Students also reported some challenges related to distractions, learning environment, engagement, and groupwork. Reported benefits include comments about technology, communication, self-paced materials, and lack of commute.

Conclusions: Student feedback should be utilized to ensure that challenges, barriers, and preferences of students are addressed as the remote learning environment persists.

deemed to be non-human subject research by the Medical College of Wisconsin (MCW) IRB.

The UGA College of Pharmacy offers a four-year Doctor of Pharmacy degree, with the first three years (P1, P2, and P3) primarily classroom based, including intermittent experiential educational requirements, Introductory Pharmacy Practice Experiences (IPPEs), and fourth year as experiential block rotations. In the P3 year, students attend classes in person through distance learning on one of four campuses. All P1 through P3 students

were systematically asked two questions regarding the change to RLE on a 4-point Likert scale (1=adversely impacted me, 4=positively impacted me) and a 5-point Likert scale (1= not well at all; 5=extremely well) during anonymous course evaluations at end of the spring 2020 semester. Likert questions asked students to reflect on their transition to remote learning, how students would rate the transition's impact on their ability to achieve course outcomes/objectives (4-point Likert), and how they would rate the faculty's ability to adapt their instruction to the fully RLE (5-point

TABLE 1. Quantitative Questionnaire Data from UGA College of Pharmacy

		<i>Reflecting on transition to remote learning, how would you rate its impact on your ability to achieve outcomes/objectives for this course? *</i>			<i>Overall, how would you rate the faculty's ability to adapt to fully remote/digital learning during COVID-19? †</i>		
<i>Groups</i>	<i>Required Courses Surveyed n (%)</i>	<i>Median (IQR)</i>	<i>P value</i>	<i>Survey Responses (n)</i>	<i>Median (IQR)</i>	<i>P value</i>	<i>Survey Responses (n)</i>
Total	15 (75%)	3.0 (2.0 – 3.0)		1779	5.0 (4.0 – 5.0)		1814
P1 (n=148 students)	6 (75%)‡	2.0 (2.0 – 3.0)	p<0.05 [§]	767	4.0 (4.0 – 5.0)	p<0.05 [§]	767
P2 (n=138 students)	5 (100%)	2.0 (2.0 – 3.0)		601	5.0 (4.0 – 5.0)		601
P3 (n=130 students)	4 (57%) [^]	3.0 (2.0 – 3.0)		406	5.0 (4.0 – 5.0)		406
Course Type							
Skills Courses	2 [^]	2.0 (2.0 – 3.0)	p>0.05 [§]	243	5.0 (4.0 – 5.0)	P<0.05 [§]	244
Didactic/Other Courses	13	3.0 (2.0 – 3.0)		1536	4.0 (4.0 – 5.0)		1570
[^] 1=adversely impacted me, 4=positively impacted me [†] 1=not well at all, 5=extremely well [‡] P1 courses not included in survey: Introductory Pharmacy Practice Experience, Career Opportunities [^] P3 courses not included in survey: 2 skills-based and 1 Health Services Outcomes course [§] Kruskal-Wallis test; [§] Mann Whitney U							

Likert) (Table 1). Results were reported by year and course type: skills or didactic, which included foundational and patient care-related courses. Further, students enrolled in the P3 Pharmacotherapy IV course were asked additional questions. Survey questions for P3 students included Likert-style questions that asked students to rate how likely they were to engage in the pre-class and in-classroom activities within the RLE (Table 2). This course traditionally required pre-class reading/lecture and unannounced in-class quizzes to incentivize attendance. During RLE, quizzes were

omitted due to the concern for potential variability in student access to internet and live class attendance, which could result in disadvantages for some students.

The MCW School of Pharmacy offers a three-year Doctor of Pharmacy degree, where the first two years are primarily didactic instruction with weekly IPPEs and patient care labs. The third academic year consists of experiential rotations. At the end of the spring session, all students in the didactic curriculum (P2 and P3 equivalence years) were provided with a voluntary 15-question de-identified survey

containing both five-point Likert scale and open response questions. Questions within this survey sought to address several areas. The 5-point Likert scale questions (1=functioned very poor/did not enhance at all, 5 =functioned very well/enhanced greatly) asked students to rate their perception of functionality of technology, achievement of course objectives, and overall communication (Table 4). Students were also provided with a list of perceived challenges that they could choose from in order to identify areas for improvement in course delivery (Table 5). Open-ended

TABLE 2. UGA College of Pharmacy – Impact of the Remote Learning Environment Questionnaire for Pharmacotherapy IV Course: “During remote learning as compared to on-site classroom environment, were you more likely to . . .”

	<i>Yes, more likely</i>	<i>Somewhat more likely</i>	<i>Neither</i>	<i>No, less likely</i>
Actively participate via electronic methods (i.e., chat), n (%)	35 (28%)	49 (40%)	21 (17%)	19 (15%)
Participate in pre-class groupwork, n (%)	11 (9%)	35 (28%)	9 (7%)	69 (56%)
Participate with group during class, n (%)	10 (8%)	44 (36%)	4 (3%)	66 (53%)
Attend class, n (%)	13 (11%)	11 (9%)	78 (63%)	22 (18%)
Ask questions of instructor, n (%)	16 (13%)	38 (31%)	37 (30%) (never, regardless) + 17 (14%) (always, regardless)	16 (13%)

qualitative questioning sought to organize additional student comments on perceived benefits and challenges of a RLE.

Results are descriptively reported using median and interquartile range. Nonparametric tests compared ordinal data. Statistical analyses were completed using IBM SPSS Statistics for Windows, Version 26.0 (IBM Corp, Armonk, NY). A multi-step content analysis was performed on open-ended responses where faculty categorized responses into individual statements, then further into summary themes.³

Results

UGA College of Pharmacy

Overall, 1,814 course evaluation responses were collected; students reported RLE had no impact on their ability to meet course objectives (Table 1). However, between cohorts, P1 and P2 students overall felt RLE adversely impacted their learning. Skills-based courses were particularly affected, according to student responses, with RLE reported as “somewhat impacting” students’ ability to achieve course outcomes ($p > 0.05$). P1 students rated the instructor’s ability to adapt instruction to RLE as a 4.0 on a 5-point scale, while the P2 and P3 students rated a 5.0 ($p < 0.05$) (Table 1). P1 and P2 students rated the skills-based instructor’s ability higher than foundational course instructors in adapting to a RLE ($p < 0.05$).

UGA College of Pharmacy - Pharmacotherapy Course Data

Despite the majority of students favorably rating adaptation to RLE (84% very well or extremely well), more students reported being adversely impacted by the change to RLE (59%) than those reporting benefit (23%). Overall, 47% of students reported RLE hindered learning in the course (10% significantly, 37% somewhat, with 7% unknown impact) while only 12% reported benefit.

Most students (79%) reported continued likelihood of preparing for class despite lack of quiz incentive (41% extremely likely, 38% likely). Additionally, most students appeared to be more likely to participate during in-class discussion within the RLE, although their likelihood of participating in groupwork was lesser. Notably, attendance did not seem to be impacted according to

TABLE 3. Qualitative Student Feedback Regarding Benefits and Challenges of a Remote Learning Environment

	UGA (n = 98)	MCW* (n = 32)
Benefits of the Remote Learning Environment		
Technology/Virtual Communication/Collaboration (e.g. audience response/chat, prefer to distance technology of multi-campus, better microphone/audio)	21	8
Pre-Recorded Lectures	2	12
Flexible Attendance and Reduced Commute Burden	9	4
Fewer In-Class Distractions/Improved Focus	5	0
Virtual Organization/Assessment Policies	1	4
Student Identified Challenges with the Remote Learning Environment		
Lack of Engagement/Participation/Active Learning & Difficulty Focusing	25	2
Ineffective Groupwork/Difficulty Communicating/Collaborating	15	14
Managing Home Environment/Distractions	12	6
Time /Workload Management	--	14
Prefer Face-to-Face	8	0
Technology	2	7
Lack of Motivation	4	1
Virtual Assessment Process/Calculations	1	3
Pre-recorded Lecture	--	1
Mental Health	--	1
*12 responses omitted (blank or responded ‘nothing’, etc.)		

survey results (Table 2).

When asked about potential preference for RLE over a traditional classroom setting, 50 comments stated “no,” 33 “somewhat,” and 15 “yes.” Collation of individual comments into content areas are listed in Table 3.

MCW School of Pharmacy

Overall, 32 of 96 students (33%) voluntarily responded to the 15-question survey. Technology functioned well for most students with the live breakout sessions being least functional according to collected responses (Table 4). P3-equivalent students felt virtual adaptation somewhat enhanced learning independent of the instructional delivery. No differences existed between cohorts regarding functionality of technology or the enhancement to learning based on instructional delivery (4.0). However, P2 class reported a general preference for asynchronous over synchronous virtual learning ($p < 0.05$).

Regarding qualitative comments, the most common challenge students cited

was “not having a dedicated home learning space” as reported by 62.5% of respondents between P2 and P3 cohorts (Table 5). Further, categorized open-ended responses determined that technological issues and virtual assessment processes were the most commonly mentioned for P3 cohort, while time-management and communication issues arose for P2 cohort (Table 5). Overall, the most cited aspect of virtual learning to continue was use of pre-recorded lecture material. The most commonly reported challenges were related to time management and ineffective groupwork (Table 3).

Discussion

Innovations in higher education are desperately needed to ensure consistency in quality education, achievement of learning outcomes, and student satisfaction. Student data should be used in overcoming barriers and enhancing any potential benefits with RLE. Overall, despite generally positive student satisfaction with faculty ability to transition to RLE, this survey revealed several student-identified barriers: lack of

TABLE 4. MCW School of Pharmacy Functionality of Technology and Enhancement to Learning

	<i>P3 Students (N=14)</i>	<i>P2 Students (N=18)</i>	<i>Cumulative (N=32)</i>
Functionality of Technology* How well did the technology function for you during virtual learning?	Median (IQR)		
Email/Announcements	4.0, (4.0-5.0)	4.0, (4.0-5.0)	4.0, (4.0-5.0)
Learning Management Software	4.0, (4.0-5.0)	4.0, (4.0-5.0)	4.0, (4.0-5.0)
Assessment Software	4.0, (3.3-5.0)	4.0, (4.0-4.0)	4.0, (4.0-5.0)
Live Video Conferencing Software [†]	4.0, (3.3-4.0)	3.5, (2.0-4.0)	4.0, (2.0-4.0)
Breakout Room Software [§]	3.5, (3.0-4.3)	3.5, (3.0-4.0)	3.5, (3.0-4.0)
Enhancement to Learning* How well did these things assist you in learning the necessary content and achieving course objectives during virtual learning?	Median (IQR)		
Synchronous Teaching [†]	4.0, (3.3-5.0)	3.0, (1.0-4.0)	4.0, (2.8-5.0)
Asynchronous Teaching [†]	4.0, (2.5-4.8)	4.5, (4.0-5.0)	4.0, (4.0-5.0)
Breakout Rooms	4.0, (3.0-4.8)	4.0, (3.0-4.0)	4.0, (3.0-4.3)
Online Class Exercises / Polling	4.0, (4.0-4.8)	4.0, (3.3-5.0)	4.0, (4.0-5.0)
Communication from Faculty	4.0, (4.0-5.0)	4.0, (2.0-5.0)	4.0, (3.0-5.0)
Communication[‡]	Median (IQR)		
Amount of communication	2.0, (1.3-2.0)	2.0, (1.3-2.0)	2.0, (1.0-2.0)
*1=functioned very poor/did not enhance at all, 5 =functioned very well/enhanced greatly			
[‡] 3-point Likert scale [1=too little, 2=just right, 3=too much]			
[†] Mann Whitney U test performed with all comparisons between cohorts having p > 0.05			
[§] Breakout rooms primarily used with P2 cohort			

TABLE 5. MCW School of Pharmacy Qualitative Student Reported Challenges with the Remote Learning Environment

	<i>P3, Class of 2021, P3 Students (N=14)</i>	<i>P2, Class of 2022, P2 Students (N=18)</i>	<i>Cumulative (N=32)</i>
Which of the following elements have been so challenging for you that it affected your ability to learn during virtual learning?*	Number of Students (%)	Number of Responses (%)	Number of Responses (%)
No dedicated home learning space	9 (64.3)	11 (61.1)	20 (62.5)
Not being able to study with classmates in person	5 (35.7)	14 (77.8)	19 (59.4)
Managing my feelings about the future	5 (35.7)	14 (77.8)	19 (59.4)
Maintaining my mental health	6 (42.9)	11 (61.1)	17 (53.1)
Instructors holding synchronous classes (e.g., live lectures or video conferencing at a set time)	4 (28.6)	13 (72.2)	17 (53.1)
Losing the ability to work with classmates on team assignments	4 (28.6)	12 (66.7)	16 (50.0)
Not seeing faculty in person / having to schedule virtual office session	5 (35.7)	8 (44.4)	13 (40.6)
Instructors holding asynchronous classes (e.g., recorded lectures you watch on your own)	5 (35.7)	1 (5.6)	6 (18.8)
*Number of challenges per response			
1-2	7	3	10
3-4	4	4	8
5-6	2	7	9
7-8	1	4	5

engagement and focus, home environment distractions or lacking space, technology issues with synchronous learning, as well as difficulty with groupwork. Results suggest RLE does not negatively impact attendance or participation.

Notably, students reported several potential benefits from RLE, which faculty can leverage—such as use of chat technology allowing for in-class discussion. Further, results suggest schools should provide ample mental health resources as well as assist students with building individual time management skills and the creation of dedicated workspaces at home, which can aid in overcoming some of the challenges reported by students to date.

Previous research on online learning has shown similar educational outcomes when compared to in person learning.⁴⁻⁷ These outcomes are consistent across a wide range of disciplines, including medicine, nursing, and pharmacy.⁶ Specific to synchronous versus asynchronous learning in the healthcare graduate and pharmacy professional communities, limited research is available prior to the COVID-19 pandemic.⁸ Past research investigated questions of performance and pharmacy student satisfaction within the RLE concluding while performance was maintained, students were typically more satisfied with synchronous (live interactive) learning compared to asynchronous virtual done at a student's own pace.⁹ However, what is different now in this environment is that courses were abruptly transitioned to RLE without time to mentally or physically prepare.^{2,10,11} This can be seen in our survey results as we report some students' subjective preference for pre-recorded lectures, which may reflect change over time in student learner preferences and updates in technology. Another study compared face-to-face, synchronous virtual, or asynchronous virtual in a group of dental residents.¹² Success and preference were highly dependent on the technology used to facilitate learning, but learners preferred face-to-face interaction as more conducive for interactions between instructors and learners. While this study found virtual learning to be an acceptable method, these postgraduate residents overall preferred either face-to-face or asynchronous remote learning over synchronous virtual.¹² These results more closely align with the subjective

reports within the results herein of UGA and MCW pharmacy students, particularly their comments about pre-recorded lecture material and technology being a focal point for students as both strengths and weaknesses, respectively.

Limitations of this study include response rate and lack of course-specific data from MCW that was focused on surveying entire cohorts and overall RLE experiences, while UGA gathered some course-specific data but cannot necessarily draw conclusions all aspects of their curriculum as a whole. Furthermore, minor differences existed in open-ended question wording between each school's student surveys, as they were developed by faculty at the respective institutions separately. Strengths are the timeliness of students response data in relation to the COVID-19 pandemic and different structures of the two pharmacy programs which enhances generalizability.

A few themes emerged from student feedback from the two colleges surveyed regarding the transition to a RLE due to COVID-19. Even though students appreciated the quality of efforts by faculty, the change led to new barriers and challenges such as distractions in home environment and lack of space leading to difficulty focusing as well as engaging in the material remotely, a lack of connection to colleagues with a lack of groupwork, and technology issues especially with synchronous instruction. With RLE, students had less structure to their schedule which likely benefited those with strong time management skills but hurt those who rely on external structure and oversight. Overall, a consistent theme to overcome the challenges was the use of asynchronous pre-recorded lectures, which allowed students to learn the material at their own time and pace without distractions. Pairing asynchronous lectures with either synchronous application-based practice cases or low-stakes asynchronous practice cases or quizzes was preferred by students. This minimizes the risk of technology impacting learning while also ensuring students are keeping up with the material. An area for future investigation should be evaluating how to effectively incorporate groupwork into RLE. A hybrid approach may be ideal given the inherent limitations of the RLE for skills-based learning, as evidenced by our quantitative results.

Conclusion

Schools should consider student perspective to ensure RLE is optimized. Barriers identified by students, such as difficulty with group work, time management, and mental health, should be specifically addressed in curricular structure during the COVID-19 pandemic. Further study is needed to evaluate specific teaching formats to determine optimal RLE for student success.

Amber Clemmons is a Clinical Professor at the University of Georgia School of Pharmacy in Augusta, GA. Zach Pape is an Assistant Professor Department of Clinical Sciences at the Medical College of Wisconsin School of Pharmacy in Milwaukee, WI. Michael Nagy is an Assistant Professor Department of Clinical Sciences at the Medical College of Wisconsin School of Pharmacy in Milwaukee, WI. Beth Phillips is the Rite Aid Professor, Director, PGY2 Ambulatory Care Residency Program, and Assistant Dean for Residency Programs at the University of Georgia School of Pharmacy in Athens, GA.

PR This article has been peer-reviewed.
The contribution in reviewing is greatly appreciated!

Disclosures: We declare no conflicts of interest or financial interests that the authors or members of their immediate families have in any product or service discussed in the manuscript, including grants (pending or received), employment, gifts, stock holdings or options, honoraria, consultancies, expert testimony, patents and royalties.

Treatment of Human Subjects: IRB approval required and obtained from MCW; IRB at UGA determined project was non-human subject research.

References

1. Binkley C. The coronavirus is upending higher ed. here are the latest developments. The Chronicle of Higher Education. Published July 22, 2020. Accessed August 31, 2021. <https://www.chronicle.com/article/the-coronavirus-is-upending-higher-ed-here-are-the-latest-developments/>
2. Brazeau GA. Lessons learned and brighter opportunities for pharmacy education amid covid-19. *Am J Pharm Educ*. 2020;84(6):ajpe8230. doi:10.5688/ajpe8230
3. Auerbach CE, Silverstein LB. *Qualitative Data: An Introduction to Coding and Analysis*. New York University Press; 2003.
4. Russell TL. The no significant difference phenomenon: as reported in 355 research reports, summaries and papers; a comparative research annotated bibliography on technology for distance education. Univ. North Carolina State University, Office of Instructional Telecommunications; 1999.

5. Stack S. Learning outcomes in an online vs traditional course. *Georgia Educational Researcher*. 2015;9(1):5. doi:10.20429/ijstl.2015.090105

6. Tomlinson J, Shaw T, Munro A, et al. How does tele-learning compare with other forms of education delivery? a systematic review of tele-learning educational outcomes for health professionals. *NSW Public Health Bull*. 2013;24(2):70. doi:10.1071/nb12076

7. Euzent P, Martin T, Moskal P, D. Moskal P. Assessing student performance and perceptions in lecture capture vs. face-to-face course delivery.

Journal of Information Technology Education: Research. 2011;10:295-307. doi:10.28945/1515

8. Buxton EC. Pharmacists' perception of asynchronous VERSUS asynchronous distance learning for continuing education programs. *Am J Pharm Educ*. 2014;78(1):8. doi:10.5688/ajpe7818

9. Moridani M. Asynchronous video streaming vs. synchronous videoconferencing for teaching a pharmacogenetic pharmacotherapy course. *Am J Pharm Educ*. 2007;71(1):16. doi:10.5688/aj710116

10. Romanelli F, Rhoney DH, Black EP, Conway J, Kennedy DR. Pharmacy education

crosses the rubicon. *Am J Pharm Educ*. 2020;84(6):ajpe8131. doi:10.5688/ajpe8131

11. Schlesselman LS, Cain J, DiVall M. Improving and restoring the well-being and resilience of pharmacy students during a pandemic. *Am J Pharm Educ*. 2020;84(6):ajpe8144. doi:10.5688/ajpe8144

12. Kunin M, Julliard KN, Rodriguez TE. Comparing face-to-face, synchronous, and asynchronous learning: postgraduate dental resident preferences. *J Dent Edu*. 2014;78(6):856-866. doi:10.1002/j.0022-0337.2014.78.6.tb05739.

New Statewide Standing Order for Naloxone

Starting April 7, 2022, Dr. Jasmine Zapata became the new physician signing the Wisconsin Statewide Standing Order for Naloxone.

What does this mean for your pharmacy?

For Pharmacies who Currently Use the Statewide Standing Order for Naloxone:

In order to continue providing naloxone through the Statewide Standing Order, use Dr. Jasmine Zapata's prescriber number going forward and [print the new copy of the standing order](#) to keep on file in your pharmacy. Dr. Jon Meiman's prescriber number can no longer be used.



You do not need to go into RedCap to re-sign or newly commit to the requirements of the Statewide Standing Order for Naloxone.

Under this new standing order, there are new resources available through the enhanced Dose of Reality Initiative. Patient education regarding overdose recognition and naloxone administration can be found on the following webpages:

- Review common questions about opioids and address risk factors that can put someone at increased risk of overdose: [Dose of Reality: Get the Facts on Opioids](#)
- Provide overview of how to recognize an overdose and proper procedure to respond to an overdose: [Dose of Reality: Overdose](#)
- Discuss how to administer naloxone and when: [Dose of Reality: Safer Use](#)
- Discuss how to safely dispose of opioids and other unused prescription medication: [Dose of Reality: Safe Disposal](#)

If you have questions, reach out to: DHSOpioids@dhs.wisconsin.gov.

For Pharmacies who Wish to Begin Using the Statewide Standing Order for Naloxone for the First Time: Follow instructions under "Information for Pharmacists" [here](#).

Pharmacist-led Anti-seizure Medication Management: Delegation Protocol Implementation and Impact Analysis

by Christine A. Garmoe, PharmD, Katie E. Sherman, PharmD, Lisa A. Hawk, PharmD, BCPP, Nicholas A. Olszewski, Scott J Hetzel, Rebecca L. Lauscher, PharmD, BCACP, Katherine J. Hartkopf, PharmD, BCACP

In the United States, more than three million adults and children live with epilepsy.¹ Approximately 50% of newly diagnosed patients will not respond to an initial anti-seizure medication (ASM) trialed.² The standard of care for epilepsy treatment includes a trial of ASM monotherapy; if the patient fails two or three ASMs as monotherapy, polytherapy is commonly started.³ Guidelines for initial and subsequent ASM selection do not exist. Many factors influence ASM choice for patients, including unique pharmacokinetic properties of the drug, adverse effects, seizure type, adherence, dosage form, and insurance status. In relation to pharmacokinetics, many ASMs have significant dependence on hepatic isoenzymes to metabolize the compounds; several also inhibit or induce isoenzymes themselves, which can alter the metabolism of other medications. Notably, the side effect profiles of ASMs vary greatly. However, many have both systemic and neurologic side effects, such as fatigue, somnolence, ataxia, tremor, dizziness, and nausea. Additionally, the various mechanisms by which ASMs act have differing effects on certain seizure types, which, in turn, adds another layer of complication to the selection and maintenance of these medications. These factors, combined with reduced patient response to ASMs, lead to frequent medication changes.

Transitional polytherapy is a technique that is used to make ASM changes while reducing breakthrough seizure risk. This involves gradually titrating the new ASM to a target dose. Once the target is achieved, the baseline ASM is gradually withdrawn.^{4,5} The Study by a Panel of Experts: Considerations in Replacement in Antiepileptics (SPECTRA) provides

Abstract

Background: Anti-seizure medication (ASM) management is complicated and time-consuming; delegating management to pharmacists could minimize the burden. Data suggests improved outcomes with pharmacist medication management. Without data in ambulatory settings, there is a need to identify the impact of delegating ASM management to pharmacists.

Methods: A pharmacist delegation protocol was developed, implemented, and analyzed to evaluate the impact of pharmacist-led ASM management in an epilepsy clinic. This delegation protocol allowed pharmacists to titrate and taper ASMs, sign prescription orders, and enter laboratory orders. A chart review was conducted before and after implementation of the protocol to determine the time to initiation of ASMs and workflow efficiency.

Results: The pre-implementation cohort included 47 patients; 24 (51%) were male, and the average age was 42 years (SD 18.0). The post-implementation cohort included 50 patients; 24 (48%) were male, and the average age was 45 years (SD 15.8).

The average time to initiation of ASMs was 32.3 hours (SD 31.6) and 35.2 hours (SD 44.5) in the pre- and post-implementation groups, respectively. The average number of electronic medical record (EMR) messages sent between the care team was 4 (SD 1.9) and 0.3 (SD 0.6), respectively.

The number of messages sent by the following groups was reduced after the implementation of the delegation protocol: care team (-3.7; $P < 0.001$), providers (-1.2; $P < 0.001$), pharmacists (-1; $P < 0.001$).

Conclusion: Implementation of a pharmacist-driven ASM management delegation protocol increases the efficiency of caring for patients with epilepsy without sacrificing the timely initiation of ASM medications.

recommendations on best practices for titration and taper of various ASMs.⁴

Transitional polytherapy can be time consuming for epilepsy providers, and there could be benefits for delegating this responsibility to pharmacists. Studies have

demonstrated improved clinical outcomes with pharmacist-driven management of medications with a narrow therapeutic index.^{6,7} Specific to epilepsy, a multi-center study using national pharmacy services databases evaluated the outcomes

of pharmacist ASM management in hospitalized Medicare patients. Both the death rate and length of stay were significantly lower in hospitals with this service.⁸ Despite these positive findings, the generalizability is limited due to the age and inpatient nature of the study population. There is no data on the impact of pharmacist ASM management in ambulatory care.

At the tertiary academic medical center where this study took place, pharmacists are embedded within the epilepsy clinic and provide medication support at the request of providers. At the time of this study's initiation, the adult epilepsy clinic at this site followed approximately 2,100 patients. Four epilepsy-trained pharmacists fulfilled 1.0 pharmacist full-time equivalent position that supported seven epilepsy providers and multiple other neurological practitioners. To be considered an epilepsy-trained pharmacist, individuals demonstrated competency by accurate completion of a select group of ASM titrations and tapers of varying difficulty with direct oversight from a previously

trained epilepsy pharmacist. Prior to this study, pharmacists developed ASM titration, taper, and cross-titration regimens for patients using the transitional polytherapy method, assessed adverse drug reactions and monitored for drug-drug interactions at the request of providers. Each regimen created one or more pharmacotherapy recommendations that required provider approval. The approval was most commonly obtained through electronic medical record (EMR) messaging, which required action from the provider and led to workflow inefficiencies and delayed ASM initiation. The recommendations were approved by providers with minimal or no changes. Given the limited evidence of the benefits of pharmacist-driven ASM management in an ambulatory care setting and the potential impact of workflow efficiencies on patient care at this site, there is a need to explore the utility of pharmacists in the role of ASM management. The purpose of this study was to assess the impact of a pharmacist-driven ASM management delegation protocol on the workflow efficiency and time to ASM initiation when implemented in an adult

epilepsy clinic. To our knowledge, this study is the first to describe the impact of pharmacist ASM management in ambulatory care.

Methods

Development and Implementation of Protocol

An interdisciplinary workgroup of epilepsy providers and pharmacists reviewed SPECTRA recommendations⁴ and other expert opinions from the literature, professional experience, and ASM package inserts to develop a pharmacist-driven ASM management protocol which delineated pharmacist scope of practice. Subsequent to a provider selecting the ASM, goal dose, and titration type, the protocol delegated the creation of ASM titration, taper, and cross-titration regimens to a single pharmacist. It allowed the pharmacist to determine the rate and duration of ASM titrations, tapers, or cross-titrations to reach the goal dose. Providers activated the protocol by specifying the ASM(s) to be changed, goal dose(s), rationale for medication change, and whether the

FIGURE 1. Flowchart of Patient Inclusion and Exclusion

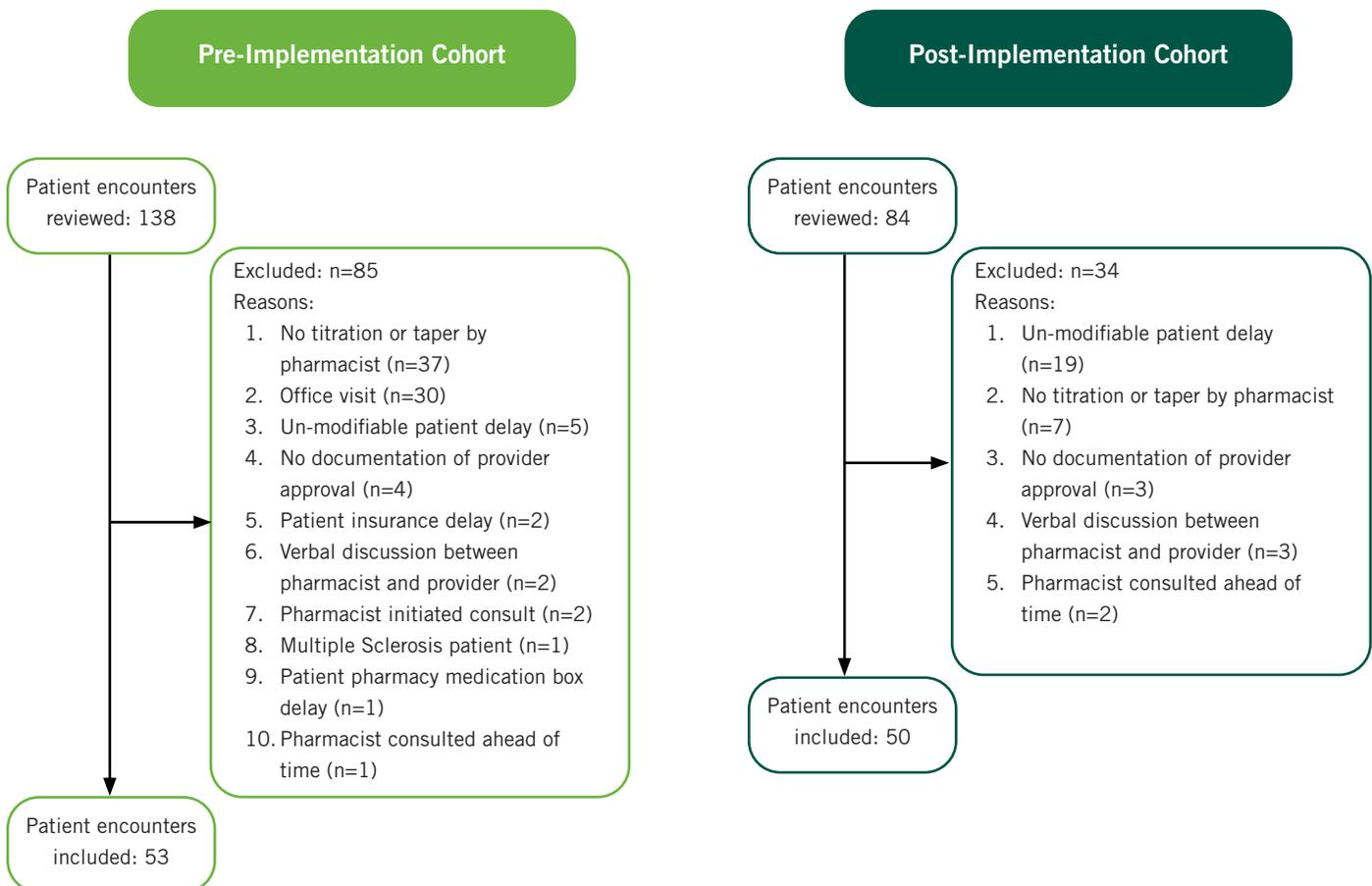


TABLE 1. Results of statistical analysis for each titration method comparing values before and after the implementation of pharmacist-led anti-seizure medication (ASM) management delegation protocol. Results reported as mean (standard deviation)

Method	Variable	Pre-implementation	Post-implementation	P-value*
All Methods	Time to ASM Initiation – hours	32.3 (31.6)	35.2 (44.5)	0.629
	Care Team Messages	4.0 (1.9)	0.3 (0.6)	< 0.001
	Provider Messages	2.2 (1.0)	1.0 (0.6)	< 0.001
	Pharmacist Messages	1.6 (0.9)	0.6 (0.7)	< 0.001
Concurrent Cross-titration	Time to ASM Initiation – hours	21.9 (28.9)	39.9 (53.3)	0.485
	Care Team Messages	3.6 (1.7)	0.4 (0.7)	< 0.001
	Provider Messages	2.1 (0.9)	1.2 (0.6)	0.004
	Pharmacist Messages	1.4 (0.8)	0.7 (0.9)	0.018
Sequential Cross-titration	Time to ASM Initiation – hours	45.3 (34.9)	27.3 (29.9)	0.139
	Care Team Messages	4.7 (2.5)	0.2 (0.4)	< 0.001
	Provider Messages	2.5 (1.2)	0.8 (0.6)	< 0.001
	Pharmacist Messages	1.9 (1.2)	0.6 (0.5)	< 0.001
Taper only	Time to ASM Initiation – hours	17.5 (16.3)	29.0 (25.9)	0.335
	Care Team Messages	3.4 (1.7)	0.2 (0.4)	< 0.001
	Provider Messages	1.9 (0.8)	1.0 (0.0)	0.02
	Pharmacist Messages	1.4 (1.1)	0.3 (0.5)	0.008
Titration only	Time to ASM Initiation – hours	36.5 (32.8)	45.3 (60.7)	0.881
	Care Team Messages	4.1 (1.5)	0.5 (0.5)	< 0.001
	Provider Messages	2.4 (0.9)	0.8 (0.4)	< 0.001
	Pharmacist Messages	1.6 (0.7)	0.7 (0.8)	0.006

*p-value from t-test of log-transformed data

pharmacist should titrate only, taper only, cross-titrate concurrently, or cross-titrate sequentially when designing the ASM regimen. Following protocol activation, the pharmacist devised a titration, taper, or cross-titration regimen based on patient-specific factors and information from the provider. Once a regimen was created, the pharmacist counseled and followed up with the patient until successful completion of the medication transition or until provider consultation was required.

Two EMR tools were developed to support consistent protocol use and documentation among users. An electronic referral order was used by providers to initiate the protocol and specify the required elements. The second tool was a standard documentation template that incorporated all required protocol elements, allowing for consistent pharmacist documentation. The template was formatted in situation, background, assessment, and recommendation (SBAR) format with explicit follow-up plans.

Following organizational approvals of the protocol and EMR tools, epilepsy-trained pharmacists received verbal

education highlighting the use of EMR tools, provider consultation requirements, and laboratory orders they were approved to order. Epilepsy providers were notified of the delegation protocol and virtually trained on the appropriate use of the electronic referral order.

Study Design

To evaluate the impact of the pharmacist-driven ASM management protocol, time to initiation of ASM therapy and workflow efficiency were evaluated pre- and post-implementation of the pharmacist ASM management protocol. Time to initiation of ASM therapy was defined as the time elapsed between provider consult and prescription signature by the provider. Workflow efficiency was quantified as the quantity of messages sent through the EMR between members of the care team. Messages were stratified into groups: those sent by a provider, a pharmacist, and the care team. The number of messages sent by the care team is the summation of messages sent by a provider, pharmacist, registered nurse, or medical assistant. A message was counted if its purpose was to clarify goal

dose(s) of ASM, method of ASM change, or the intent of ASM change. All EMR messages included in the analysis were sent during the time of initiation of ASM therapy, as defined previously. Message quantity did not include those sent to a patient. Data was further stratified based on method of ASM medication change. Four methods may be requested based on patient factors and include: cross-titration concurrently, cross-titration sequentially, titration only, or taper only. Patients 18 years and older were included if a provider requested pharmacist assistance in the creation of an ASM regimen. Patients were excluded if the provider referral occurred at an in-person clinic visit where the consult time was unmeasurable; if the patient had unmodifiable delays in therapy greater than five days (e.g., some patients did not want to immediately start therapy); and other reasons as outlined in Figure 1. This study was granted exemption by the University of Wisconsin-Madison Institutional Review Board.

Statistical Methods

Data were summarized by pre/post

implementation by mean (SD). All outcome variables were non-normally distributed and skewed right. Normality assumptions were met after a log(x+1) transformation. Comparison of outcomes between pre/post implementation for all processes and for each process individually utilized a t-test on the transformed data. Due to the small number of repeated subjects, their data were treated as independent samples. Significance level was set at 5% and all analyses were conducted in R version 4.0.

Results

Pre-Implementation

The patient demographics of each group were similar. The average age of those included was 42 (SD 18.0), and 24 patients (51%) were male. Pre-implementation data was collected retrospectively from January 2017 to December 2019, identifying 138 patient encounters with 130 unique patients that were reviewed for exclusions. The final analysis included 53 patient encounters for 47 unique patients.

Of the pre-implementation group, 14 encounters were concurrent cross-titration regimens (26.4%), 15 were sequential cross-titration regimens (28.3%), 16 were titration-only regimens (30.2%), and 8 were taper-only regimens (15.1%). In all, the average time to initiation of ASM therapy was 32.3 hours (SD 31.6). The average number of EMR messages sent among the care team was 4 (SD 1.9).

Post-Implementation

Post-implementation data was collected retrospectively from April 2020 to March 2021. In this group, 84 patient encounters were reviewed for exclusions. The final analysis included 50 patient encounters with 50 unique patients. The average age of those included was 45 (SD 15.8), and 24 patients (48%) were male.

Of the post-implementation group, 22 encounters were concurrent cross-titration regimens (44%), 15 were sequential cross-titration regimens (30%), 5 were titration-only regimens (10%), and 6 were taper-only regimens (12%). In all, the average time to initiation of ASM therapy was 35.2 hours (SD 44.5). The average number of EMR messages sent among the care team was 0.3 (SD 0.6).

Comparison of Pre and Post-Implementation Results

Table 1 shows the results for time to

initiation of ASM therapy and workflow efficiency pre- and post-implementation of the pharmacist-led ASM management delegation protocol. There were no statistically significant differences in time to initiation of ASM therapy for any of the titration methods between the pre- and post-implementation groups. The number of messages from all groups significantly reduced following the implementation of the pharmacist-driven ASM management delegation protocol.

Discussion

The goal of our study was to assess the impact of a pharmacist-driven ASM management delegation protocol on the workflow efficiency and time to ASM initiation when implemented in an adult epilepsy clinic.

The analysis of this study shows that workflow efficiency is significantly improved for all methods of ASM change as defined by reduced EMR messages exchanged between the care team. Reducing the amount of time that these healthcare professionals are required to efficiently initiate their patients' ASM therapy allows them to shift their energy to alternative workflows or expand their ability to care for additional patients.

The results show that the implementation of a pharmacist-driven ASM management delegation protocol does not significantly change the time to ASM initiation. These results suggest that institutions can shift ASM management workflows from exclusively physician-driven to pharmacist-led management without increasing the amount of time to initiation of ASM therapy. This ability for pharmacists to play a larger role in the care for patients taking ASM medications provides financial benefit to institutions by using pharmacists in this role without requiring extensive time from physicians. Additionally, these results show that institutions can provide increased access to care for patients by allowing the redistribution of physician time to other needed responsibilities or additional care opportunities.

Limitations

Subjective management of patients prior to protocol implementation could have led to inconsistencies in the therapeutic decisions made. Additionally, a small sample size for this study lowers its power to expose statistical differences. Furthermore,

it is difficult to evaluate clinical outcomes without standard objective measures for this population. Considering the measure of time to initiation, several factors have an impact on this value that are beyond control of the pharmacists; however, this may be the reality in many healthcare environments.

Conclusion

The implementation of a pharmacist-driven ASM management delegation protocol increases the workflow efficiency of caring for patients with epilepsy without sacrificing the timely initiation of ASM medications.

Christine A. Garmoe is a Clinical Pharmacist - Critical Care & Cardiology at UW Health in Madison, WI. Katie Sherman is a PGY1 Clinical Pharmacy Resident at Northwestern Memorial Hospital in Chicago, IL. Lisa Hawk is a Clinical Pharmacist - Neurology Clinic at UW Health in Madison, WI. Nicholas Olszewski is a 2022 PharmD Candidate at the University of Wisconsin-Madison School of Pharmacy in Madison, WI. Scott Hetzel is a Biostatistician at the University of Wisconsin-Madison Department of Biostatistics and Medical Informatics in Madison, WI. Rebecca Lauscher is an Ambulatory Clinical Pharmacist at UW Health in Madison, WI. Katherine Hartkopf is the Pharmacy Manager - Ambulatory Care Service at UW Health in Madison, WI.

PR

This article has been peer-reviewed.
The contribution in reviewing is greatly appreciated!

Disclosure: The author(s) declare no real or potential conflicts or financial interest in any product or service mentioned in the manuscript, including grants, equipment, medications, employment, gifts, and honoraria.

Christine A. Garmoe, PharmD had full access to all the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis

References

- Centers for Disease Control and Prevention. Epilepsy data and statistics. Updated September 30, 2020. Accessed January 18, 2022. www.cdc.gov/epilepsy/data/index.html
- Kwan P, Brodie MJ. Phenobarbital for the treatment of epilepsy in the 21st century: a critical review. *Epilepsia*. 2004;45(9):1141-1149. doi:10.1111/j.0013-9580.2004.12704.x
- Kwan P, Brodie MJ. Effectiveness of first antiepileptic drug. *Epilepsia*. 2001;42(10):1255-1260. doi:10.1046/j.1528-1157.2001.04501.x
- St Louis EK, Gidal BE, Henry TR, et al. Conversions between monotherapies in epilepsy: expert consensus. *Epilepsy Behav*. 2007;11(2):222-

234. doi:10.1016/j.yebeh.2007.04.007

5. Garnett WR, St Louis EK, Henry TR, Bramley T. Transitional polytherapy: tricks of the trade for monotherapy to monotherapy AED conversions. *Curr Neuropharmacol*. 2009;7(2):83-95. doi:10.2174/157015909788848884

6. Downing A, Mortimer M, Hiers J. Impact of a pharmacist-driven warfarin management protocol on achieving therapeutic International Normalized Ratios. *Am J Health Syst Pharm*. 2016;73(5 Suppl 1):S69-S73. doi:10.2146/sp150039

7. Smith AP, Millares-Sipin CA, James M,

Cohen H. Impact of a Pharmacist-Initiated Vancomycin Monitoring Program. *Consult Pharm*. 2016;31(9):505-510. doi:10.4140/TCP.n.2016.505

8. Bond CA, Raehl CL. Clinical and economic outcomes of pharmacist-managed antiepileptic drug therapy. *Pharmacotherapy*. 2006;26(10):1369-1378. doi:10.1592/phco.26.10.1369

Pharmacy Quality™

COMMITMENT+

A continuous quality improvement program can be a lifesaver!

MAKE YOUR PATIENTS AND YOUR PHARMACY SAFER.

FOR LESS THAN A DOLLAR A DAY ...

- Increase patient safety - learn from collected safety data and online resources
- Maintain compliance - meet accreditation, credentialing, PBM and state QA requirements
- Reduce costs - increase operations efficiency, reduce potential risk and cut down on "re-do" Rxs
- Safeguard your data - Patient Safety Organizations offer confidentiality and legal protection

 **APMS**
Alliance for Patient Medication Safety

Learn more at www.medicationsafety.org or call us at (866) 365-7472.

The Alliance of Medication Safety (APMS) is a federally listed Patient Safety Organization (PSO).



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

Health at Every Size®: An Overview of a Mindful Approach for Lifestyle Change

by LaNea E. Bartel, 2023 PharmD Candidate

LEARNING OBJECTIVES

- Understand the background of Health at Every Size (HAES)®.
- Learn about literature and research that support and refute HAES principles.
- Identify concerns and limitations with HAES.
- Learn how pharmacists can educate patients on HAES.

Health care professionals are searching for new methods to combat the obesity epidemic in the United States. Currently, 42.4% of the U.S. population is considered obese (Table 1).² Weight loss solutions are marketed and encouraged in many parts of everyday life, from fad diets in magazines to health care practitioners recommending weight loss. However, weight loss is not easy, and studies have shown how difficult it is to maintain significant weight loss with traditional weight-loss approaches, like calorie deficits and exercise.^{3,5} One analysis found that one-third to two-thirds of dieters regain more weight after a diet than they lost on their diets.⁶ Concerns have also been raised about the negative physical and mental impacts of an obsession with weight loss.^{4,7} Innovative approaches are needed to help patients develop a sustainable, healthy lifestyle. One such approach is the Health at Every Size (HAES®) movement. This approach is considered "weight neutral" and promotes psychological and behavioral changes. While the HAES approach

needs more research, it can be used by practitioners and pharmacists to help improve the mental and physical well-being of patients.

The Background of HAES

The concept behind HAES was first outlined in 1967, in an article published by Lew Louderback titled, "More People should be Fat!" The movement gained steam later, in 2008, when Lindo Bacon, PhD, published the book *Health at Every Size*.⁵ Since then, the Association for Size Diversity and Health (ASDAH) has further developed the approach and published a curriculum to educate health professionals about HAES. At its core, HAES is a weight-neutral approach that seeks to promote healthy behaviors without focusing on size and weight. Instead, it teaches people to eat intuitively and to find joy in physical activity. It also wants to increase acceptance for the diversity of all types of bodies, rather than focusing on the mainstream "ideal" body type.^{3,8}

The primary difference between HAES and traditional weight loss approaches is its lack of a prescribed regimen of diet and exercise and a goal of weight loss. Instead, HAES says, exercise should happen because people enjoy moving. There should be intrinsic motivation to move, which includes exercise to relieve stress and to improve sleep, self-confidence, and social interactions. The HAES diet does not restrict calories or any type of food. It implements mindful and intuitive eating. This approach encourages people to minimize distractions while eating, to check in with their bodies, and to be aware of the way food makes them feel.^{3,8} People listen to their internal cues of satiety and

choose foods based on how their mood, concentration, energy, and hunger are affected.⁹ Mindfulness is used to reduce cravings and help curb emotional eating. By responding to the body, people can naturally make healthier food choices for a longer period, rather than following a strict diet. HAES also looks to improve mental health surrounding body size and weight.^{3,8} Its premise is that by promoting self-love and body acceptance, people will feel more confident to make lifestyle changes and practice self-care.⁹ It aims to help alleviate eating disorders, reduce anxiety or guilt from dieting, and prevent weight cycling from diets and short-term weight loss.^{3,8}

Literature Supporting HAES

One point of frustration for overweight and obese patients is the way weight is traditionally discussed at health appointments. Many patients report that some providers seem to only see weight, rather than other health concerns, and patients are told that weight loss is the

TABLE 1. CDC Definitions of Obesity in Adults¹

BMI (kg/m ²)	Category
< 18.5	Underweight
18.5 – 24.9	Healthy weight
25 – 29.9	Overweight
>30	Obesity <ul style="list-style-type: none"> • Class I: BMI 30-34.9 • Class II: BMI 35-39.9 • Class III: BMI >40

BMI = Body Mass Index

TABLE 2. Study Designs and Results of Literature Testing a HAES Intervention

<i>Title of Study</i>	<i>Experimental Design and Sample Size</i>	<i>Inclusion Criteria</i>	<i>Interventions and Control</i>	<i>Measurements</i>	<i>Results</i>
Carbonneau E, Bégin C, Lemieux S, et al. A Health at every size intervention improves intuitive eating and diet quality in Canadian women ¹²	Quasi experimental N= 216	Women who were interested in a HAES program. The most common BMI was >30 mg/kg ² .	Intervention: 13 three-hour weekly meetings and a six-hour intensive day over 16 months. Topics discussed include enjoyment of physical activity, healthy nutrition, and realistic objectives about the body Control: Waiting list	Food Frequency Questionnaire, Intuitive Eating Scale, diet quality, and HEI	The HAES group significantly increased their intuitive eating score (3.04 vs 2.79, p< 0.0001) and diet quality at t=4 months compared to control. The HEI for HAES was significantly improved at t=4 months (76.82 vs 72.12 p=0.0462), but there was no difference at t=16 months (74.93 vs 72.98, p value not given)
Provenber V, Bégin C, Tremblay A, et al. Short-term effects of a “health at every size” approach on eating behaviors and appetite ratings ¹³	Randomized controlled trial N= 144	Premenopausal women with a BMI of 25-35 kg/m ²	Interventions: 14 weekly sessions focused on general well-being, a healthy lifestyle, enjoyment of physical activity, body acceptance, and a food diary Control: Waiting list	Three Factor Eating Questionnaire and appetite sensations scales	The HAES group had increased flexible restraint (3.6 vs 2.7, p=0.42) and significantly decreased susceptibility to hunger (1.5 vs 1.9, p= 0.02), external hunger (1.7 vs 2.4 p=0.0005), and desires to eat postprandially (932 vs 1,124, p=0.02)
Provencher V, Bégin C, Tremblay A, et al. Health-at-every-size and eating behaviors: 1-year follow-up results of a size acceptance intervention ¹⁴	Randomized controlled trial N= 144	Women with a BMI of 25-35 kg/m ³ and a stable body weight for at least 2 months	Intervention: This study is a follow up study at the end of 4 months, 6 months, and 1 year post intervention of the study cited above. Control: Waiting list	Three Factor Eating Questionnaire and appetite sensations scales	The HAES group had a decrease susceptibility to hunger at 4 months (-0.9, p <0.001) and 16 months (p <0.02) and decreased situation susceptibility to disinhibition (2.5 vs 3.3, p<0.03)
Uljan M, Pinto AJ, de Morais Sato P, et al. Effects of a new intervention based on the health at every size management of obesity: The “health wellness in obesity” study ⁷	Randomized controlled trial N=58	Women between 25 and 50 years old and a BMI of 30-39.9 kg/m ²	Interventions: Thrice weekly physical activity sessions, bimonthly individual nutrition sessions, and five philosophical workshops over 7 months Control: Bi-monthly educational sessions on HAES principles	Psychological and behavioral assessments using Figure Rating Scale, BAQ, and health related to quality of life measurements (WHO-QOL-BREF)	The HAES group had significantly decreased consumption of ultra-processed foods (Pre= 32, post = 21.7 p=0.0001) and increased daily consumption of fruits (Pre= 8.8, post= 12, p=0.026) and vegetables (Pre= 13.9, post= 18.9, p=0.018). The HAES group had improved body image perception and satisfaction on the BAQ scale (p ≤ 0.05). Both groups had an increase in health-related quality of life parameters for WHO-QOL-BREF domains (p=0.03)

BAQ = Body-Attitude Questionnaire; BMI = Body Mass Index; HAES = Health at Every Size; HEI = Healthy Eating Index

only way to prevent chronic conditions.³ While literature shows that there are correlations between weight and certain health conditions, HAES attempts to refute that health outcomes are determined by weight alone.^{4,10} Advocates for HAES often cite a Journal of the American Medical Association (JAMA) meta-analysis that suggests being slightly overweight may lead to better survival, which is known as the “obesity paradox.” This analysis studied more than 2 million subjects and found that those who were overweight and in the Grade I obesity category were not at an increased risk of all-cause mortality, and people who were overweight had significantly lower all-cause mortality than other weight groups.¹¹ Studies also suggest that weight loss may lead to endocrine changes like decreased insulin secretion, leptin signaling, energy expenditure, and satiety, while ghrelin

signaling, hunger, and energy storage increase. That is, the body may change to promote weight regain back to its baseline.⁴ By breaking down the relationship between health and weight, HAES can advocate for healthy lifestyles without a strong focus on weight loss to prevent disease.

There has also been some research to determine the effectiveness of a HAES intervention. These studies have found that women participating in HAES had improved body image perceptions and sense of self. Their eating habits changed to include more fruits and vegetables and to eat intuitively with less susceptibility to hunger. The details of these studies are outlined in Table 2. In general, the evidence shows that with intense HAES-based interventions, the women had improved diet quality and increased body satisfaction.^{7,12,13}

Concerns with HAES

Despite literature supporting HAES, some health experts have concerns about some of its principles. One debate is around whether people can truly be healthy at every size. A study in JAMA showed a correlation between higher BMI and higher rates of metabolic abnormalities.¹⁵ One article raises concerns about homeostatic changes that occur when people are chronically overweight. It discusses the body’s natural defense mechanisms against weight gain, and how these systems change as weight stays increased. The homeostatic set point of the body will shift to accommodate a heavier weight, which may have a role the difficulty of sustained weight loss. However, if lifestyle changes could be implemented early when weight begins to shift, these metabolic changes may be prevented.¹⁶

There is also a practical concern, that if people consistently eat processed food because they enjoy it, they may continue to eat those foods because HAES does not require any specific dietary changes. HAES addresses this concern, saying that, by paying attention to how food makes the body feel, people will naturally eat nutritious foods. Also, weight gain has not been significantly shown in studies conducted with a HAES intervention.⁹ Mindful eating can also help people understand their emotions and make steps to reduce binges and emotional eating. More data and studies are needed to know if these concerns are substantial.

Clinical Implications of HAES

More research is needed to maximize the clinical benefits of HAES. There is still more data needed before the approach can be broadly applied to a general population. A limitation of the current studies of HAES is the small sample sizes. Most of the participants were middle-aged white women who were in the overweight or Grade I obesity category. The interventions also involved lengthy and intense classes, which may be hard to standardize for the public, especially if there is limited access and resources. There has not been a long-term study conducted on the HAES approach. The existing studies had a trial period of 4 to 16 months and did not track physiologic outcomes like weight changes or metabolic changes.¹⁷ Furthermore, the current HAES curriculum does not implement an algorithmic approach that practitioners are familiar with, and there is no certification required to be considered a HAES informed provider.

However, the general information presented in HAES can be used by pharmacists promoting lifestyle change. It offers an approach for patients that is different from traditional recommendations. Patients may be discouraged if traditional lifestyle changes fail to achieve a certain weight or size. Pharmacists can recommend this alternative lifestyle approach and reduce the focus on weight. It can also be paired with motivational interviewing to facilitate change. The framework for motivational interviewing involves having an open discussion with the patient, discussing discrepancies between the patient's goals and their behaviors, avoiding arguments, and supporting self-efficacy and maintaining optimism.¹⁸ Studies using motivational interviewing for obesity

have also demonstrated improvements in impulsive eating and body dissatisfaction.¹⁹ The principles of HAES are similar to those in motivational interviewing. They both meet patients where they are, set goals based on patient preferences, and avoid arguments and confrontation. HAES principles could be incorporated into a non-pharmacologic approach to changing behaviors and changing people's relationship with their body. The utility of HAES with pharmacologic therapy has not been studied, but it could be used as a lifestyle change before initiating drug therapy. After people's mindsets and habits change, other add-on pharmacologic therapies to further improve health and reduce weight can be considered

Conclusion

There is promising data that HAES may be helpful to help treat eating disorders and to positively influence people's relationship with food. By promoting mindful eating and movement, people will find more joy in their lifestyles and in their body sizes. However, more research is needed to apply these concepts to public health.

LaNea Bartel is a 2023 Doctor of Pharmacy Candidate at Concordia University Wisconsin School of Pharmacy in Mequon, WI.

PR This article has been peer-reviewed.
The contribution in reviewing is greatly appreciated!

Acknowledgements: I would like to thank Dr. Sarah Peppard and Dr. James Lokken, members of Concordia University Wisconsin faculty, who provided feedback and guidance for the article. Their time and contributions are greatly appreciated.

Conflict of interests: The author(s) declare no real or potential conflicts or financial interest in any product or service mentioned in the manuscript, including grants, equipment, medications, employment, gifts, and honoraria

References

1. Defining Adult Overweight and Obesity. CDC. Updated June 7, 2021. Accessed February 1, 2022. <https://www.cdc.gov/obesity/adult/defining.html>
2. Adult obesity facts. CDC. Updated September 30, 2021. Accessed January 5, 2022. <https://www.cdc.gov/obesity/data/adult.html>
3. HAES® curriculum. ASADH, NAAFA, SNEB. n.d. Accessed January 5, 2022. <https://haescurriculum.com/>
4. Bombak A. Obesity, health at every size, and public health policy. *Am J Public Health*. 2014;104(2):e60-e67. doi:10.2105/AJPH.2013.301486

5. Byrne C. The 'Health at Every Size' philosophy aims to make health care more inclusive of larger-sized bodies. Well + Good. Published November 9, 2020. Accessed January 5, 2022. <https://www.wellandgood.com/health-at-every-size/>
6. Mann, T, Tomiyama J, Westling E, Lew A, et al. Medicare's search for effective obesity treatments: diets are not the answer. *The Am Psych*. 2007;62(3). doi: 10.1037/0003-066x.62.3.220
7. Ulian DM, Pinto AJ, de Moraes Sato P, et al. Effects of a new intervention based on the Health at Every Size approach for the management of obesity: the "Health and Wellness in Obesity" study. *PLoS One*. 2018;13(7):e0198401. doi:10.1371/journal.pone.0198401
8. HAES® approach. ASADH. n.d. Accessed January 5, 2022. <https://asadh.org/health-at-every-size-haes-approach/>
9. Bacon L, Aphramor L. Weight science: evaluating the evidence for a paradigm shift [published correction appears in *Nutr J*. 2011;10:69]. *Nutr J*. 2011;10:9. doi:10.1186/1475-2891-10-9
10. Rishi Caleyachetty R, Thomas G, Konstantinos A, et al. Metabolically healthy obese and incident cardiovascular disease events among 3.5 million men and women. *J Am Coll Cardiol*. 2017;70(12):1429-1437. doi/10.1016/j.jacc.2017.07.763
11. Flegal KM, Kit BK, Orpana H, Graubard BI. Association of all-cause mortality with overweight and obesity using standard body mass index categories: a systematic review and meta-analysis. *JAMA*. 2013;309(1):71-82. doi:10.1001/jama.2012.113905
12. Carbonneau E, Bégin C, Lemieux S, et al. A Health at Every Size intervention improves intuitive eating and diet quality in Canadian women. *Clin Nutr*. 2017;36(3):747-754. doi:10.1016/j.clnu.2016.06.008
13. Provencher V, Bégin C, Tremblay A, et al. Short-term effects of a "Health-At-Every-Size" approach on eating behaviors and appetite ratings. *Obesity*. 2007;15(4):957-966. doi/pdf/10.1038/oby.2007.638
14. Provencher V, Bégin C, Tremblay A, et al. Health-at-every-size and eating behaviors: 1-year follow-up results of a size acceptance intervention. *J Am Diet Assoc*. 2009;109(11):1854-1861. doi:10.1016/j.jada.2009.08.017
15. Wildman RP, Muntner P, Reynolds K, et al. The obese without cardiometabolic risk factor clustering and the normal weight with cardiometabolic risk factor clustering: prevalence and correlates of 2 phenotypes among the US population (NHANES 1999-2004). *Arch Intern Med*. 2008;168(15):1617-1624. doi:10.1001/archinte.168.15.1617
16. Sainsbury A, Hay P. Call for an urgent rethink of the 'health at every size' concept [published correction appears in *J Eat Disord*. 2014;2:13]. *J Eat Disord*. 2014;2:8. doi:10.1186/2050-2974-2-8
17. Penney TL, Kirk SF. The Health at Every Size paradigm and obesity: missing empirical evidence may help push the reframing obesity debate forward. *Am J Public Health*. 2015;105(5):e38-e42. doi:10.2105/AJPH.2015.302552
18. Duff A, Latchford G. Using motivational interviewing to improve medicines adherence. *The Pharm J*. 2016. Accessed March 21, 2022. <https://pharmaceutical-journal.com/article/ld/using-motivational-interviewing-to-improve-medicines-adherence>
19. Christie D, Channon S. The potential for motivational interviewing to improve outcomes in the management of diabetes and obesity in paediatric and adult populations: a clinical review. *Diabetes Obes and Metab*. 2013;16(5):381-387. doi:10.1111/dom.12195

Patient safety. Professional practice. Community impact.

Build your team with confidence.

Employers who rely on PTCB consistently report improved employee performance, greater efficiency, lower turnover, and reduced time and expense to train and advance pharmacy technicians.



Assessment-Based Certificates

BILLING AND REIMBURSEMENT
CONTROLLED SUBSTANCES DIVERSION PREVENTION
HAZARDOUS DRUG MANAGEMENT
IMMUNIZATION ADMINISTRATION
MEDICATION HISTORY
MEDICATION THERAPY MANAGEMENT
POINT-OF-CARE TESTING
REGULATORY COMPLIANCE*
SUPPLY CHAIN AND INVENTORY MANAGEMENT*
TECHNICIAN PRODUCT VERIFICATION (TPV)

*Planned for 2022

Certifications



Certified Pharmacy Technician (CPhT)



Compounded Sterile Preparation
Technician® (CSPT®) Certification



Advanced Certified Pharmacy
Technician (CPhT-Adv) Certification

2022 PSW Educational Conference Recap

by Ariana Double, 2023 PharmD Candidate

The Wisconsin pharmacy community was eager to gather together at the Pharmacy Society of Wisconsin's (PSW) first in-person Educational Conference in two years. A total of 375 pharmacists, residents, pharmacy technicians, and student pharmacists engaged in a variety of sessions at the Monona Terrace in Madison, Wis. All sessions were available in person, with additional virtual content from the conference posted on the PSW app for all to view. PSW President Dr. Ellina Seckel opened the conference by saying, "Confronting challenges together makes us stronger."

Once again, the Wisconsin Pharmacy Residency Conference (WPRC) was held alongside the Educational Conference. There were 128 resident presentations given during 44 in-person sessions. Session topics ranged from telehealth to leveraging informatics. All resident presentations were given in person with the opportunity for conference attendees to ask questions and provide feedback to residents.

The first general session of the conference, "Contentment Ethic: An Action-Driven Practice," was led by Shawn Gulyas, the founder of humanworks8. This

session focused on the seven characteristics of contentment ethic: grateful expression, undiscovered abundance, liberating consistency, decisive vision, attentive generosity, selfless connection, and calm breathing. Gulyas encouraged the use of the Contentment Survey, which allows insight into which areas of contentment are strong in one's life and areas that need improvement. This survey can be found on the PSW app.

Brianne Bakken and Megan Ose led the second general session, "Pharmacy Workforce Survey: A Conversation About Current Workforce Trends & Concerns." Ose and Bakken spoke about the findings and trends of the 2020 Wisconsin Pharmacy Workforce Survey. The survey allowed Ose and Bakken to draw statewide and nationwide conclusions about the current pharmacy workforce. Conference attendees were asked to reflect on significant workforce trends and concerns in their current practice setting and what can be done to address those concerns.

Over the course of the lunch hours, more than 110 pharmacists, residents, student pharmacists, and technicians had the opportunity to present posters during an interactive in-person poster session during the two days of the conference. Conference

attendees had the opportunity to walk through the posters and ask questions. Those interested had the option to sign up for mental health first aid training, which took place during the two days of the conference.

In the afternoon, participants could join three sessions, including "Gender-affirming Medications," "Improving Opioid Stewardship in Health Systems and Hospitals Serving Rural Communities: A Toolkit for Pharmacists," and "Don't Forget about Your Higher-Level Learners! Coaching Residents through Layered Learning." In the later afternoon, participants had the opportunity to join an additional three sessions, including "Mitigating Preceptor Burnout through Professional Development Planning," "Racial Disparities in Pain Management," and "Updates in Metabolic Therapeutics."

The second day of the conference began with the first general session. "Responding to Wisconsin's Opioid Epidemic" was presented by Paul Krupski and Jasmine Zapta, both from the Wisconsin Department of Health Services. Krupski and Zapata discussed the impact of opioid misuse and the increasing prevalence of fentanyl. The impact of progress can be seen, as opioid misuse and the dispensing

2022 PSW Educational Conference

Tuesday-Wednesday, April 5-6, 2022
Monona Terrace Convention Center
Madison, WI

Focused on patient care.



PSW Award Recipients

The 2021 PSW Award recipients were recognized at the 2022 PSW Educational Conference earlier this month! Due to COVID-19 we were unable to host the Awards Banquet at the 2021 PSW Annual Meeting.

of opioids has decreased in the state of Wisconsin. Zapta recently signed the statewide standing order for naloxone. Patient education was said to be the first line of defense in this epidemic. See the [PSW Opioid Toolkits](#) and dhs.wisconsin.gov/opioids for more information and additional guidance.

The second general session presented on the second day of the conference, “Pathway to Provider Status, Workforce Woes and Building Community,” was presented by PSW President Ellina Seckel, Vice President of Health Care Quality Initiatives Kari Trapskin, and PSW CEO Sarah Sorum. The goal of the presentation was to address concerns regarding the passing of Act 98, workforce troubles, and the overall growth of our Wisconsin pharmacy community. Sorum said, “We need positive energy and positive solutions to drive change.” The executive committee, comprised of Janet Fritsch, Ryan Miller, Melissa Theesfeld, and Ellina Seckel, led a panel where conference attendees could ask questions and be answered in real time. For more information on provider status, Fast Facts and PSW social media will have continued information under the header “Pathway to Provider Status.” The executive committee emphasized supporting the wellbeing of the pharmacy community in Wisconsin. Resources can be found on the [PSW website](#).

The afternoon continued with a health system forum, an ambulatory care forum, and a community care forum that attendees could choose from.

It was exciting to see the pharmacy community of Wisconsin continue to thrive even during recent tumultuous times. PSW provided a successful Educational Conference by addressing current and upcoming concerns while celebrating pharmacy success and innovation.

Ariana Double is a 2023 Doctor of Pharmacy Candidate at UW-Madison School of Pharmacy in Madison, WI.



Distinguished Service
Terry Audley, RPh
XX



Pharmacist of the Year
Jordan Dow, PharmD, MS
Mayo Clinic



Bowl of Hygieia
Hashim Zaibak, PharmD
Hyatt Pharmacy



Young Pharmacist of the Year
Tiaha McGettigan, PharmD
XX



Excellence in Innovation
Trisha Seys Ranola, PharmD,
CGP, CDE
XX



Curtis A. Johnson Award
Patricia Thornewell, PharmD
XX



Interdisciplinary Care Partner
Maria Brenny-Fitzpatrick, DNP,
RN, FNP-C, GNP-BC
Retired



**Pharmacy Technician
of the Year**
Karla Smith



WPQC Innovation Award
Matt Huppert, PharmD
Fitchburg Family Pharmacy

WPQC Innovation Award - Dana Whittlinger, PharmD

WPQC Engagement Award - Barbara Hagenbrock, RPh

WPQC Engagement Award - Jon Phillips, RPh

Student Achievement Awards - Amy Duong, PharmD, Apiew Ojulu, PharmD, and
Katie Sherman, PharmD

MEDICAL COLLEGE OF WISCONSIN SCHOOL OF PHARMACY STUDENT WRITING CLUB:

Business Member Spotlight: Omar Eliwa, RPh - Welltopia Pharmacy

by Sochenda Pen, 2024 PharmD Candidate

Welltopia Pharmacy is an independent community pharmacy focusing on compounding. It offers custom-created pharmaceutical and wellness products. Based in Thiensville, Wis. In Ozaukee County, it's become a premier destination for integrative wellness. The staff includes two pharmacists, one resident pharmacist, four full-time pharmacy technicians, and four part-time pharmacy technicians, who dispense around 100 prescriptions daily. The primary goal of Welltopia Pharmacy is "to cultivate a healthy environment where patients can receive the highest quality pharmaceuticals, vitamins, and wellness guidance available in the greater Milwaukee area of Wisconsin. The pharmacy offers patients access to a wide range of comprehensive products and services to help address each of their unique needs and health goals." The pharmacy prides itself on being a neighborhood pharmacy that can provide most services

to the community. Omar Eliwa, RPh, the owner and manager at Welltopia Pharmacy, leads the pharmacy while providing high-quality services to every customer.

Eliwa graduated with a bachelor's degree in pharmaceutical sciences from Cairo University in Giza, Egypt in 2007. He came to the United States to complete an internship in 2010 and then became a registered pharmacist. In 2017, after working as a pharmacist at an independent pharmacy for four years, Eliwa decided to open Welltopia Pharmacy.

Day to Day Practice

As the pharmacist-owner and manager, Eliwa needs to be a jack of all trades and flexible with his time. Some days, he provides vaccinations, while he also must lead team meetings and perform duties like keeping track of the payroll. What he enjoys the most is providing medication consultation to patients, and spending time directly with patients to answer all their questions and address their concerns.

Moreover, for the pharmacy to successfully operate each day, Eliwa reviews the required daily tasks (like compounding, vaccinations, COVID point-of-care testing, etc.) and delegates to his team members, who collaborate to meet each day's requirements.

Raising the Bar

Welltopia Pharmacy was designed with a unique, patient-centered layout and look. The design aims to make each patient feel cared for in an exceptional way. When you walk into the pharmacy, you notice what sets it apart—the lighting, the services, etc. Meanwhile, the team's main goal is to make sure that everyone is being treated well. Providing good customer service is a top priority for Welltopia Pharmacy. Furthermore, the team strives to always provide a high quality of services.

One area where Welltopia Pharmacy stands out is in compounding prescriptions. Some compounded prescriptions may take hours to make. Compounding—and thus an extremely thorough commitment

Below left: Outside Welltopia Pharmacy in Thiensville, Wisconsin. Bottom right: Omar Eliwa, RPh, Owner & Manager, Welltopia Pharmacy



to patient care—is a point of pride for Welltopia Pharmacy. Another way the pharmacy focuses on the patient is through script packaging, which helps empower patients to take their medication appropriately and minimizes hassle. Furthermore, the pharmacy provides high-quality supplements, about which the pharmacy team is extremely knowledgeable. They share that education with their patients. Welltopia Pharmacy ensures every service that it provides adds value for patients.

In addition to focusing on high-quality patient care, Eliwa believes diversification is a key to the success of his pharmacy.

Eliwa created a vision when planning to open Welltopia Pharmacy, which included a diverse set of pharmacy services. Before launching the pharmacy, he spent two years planning. Of course, Eliwa believes that, to be successful, people need to work hard to reach their goals. If mistakes or barriers come up along the way, it is important to learn from them, and then fix the problem or adapt to achieve success. Most importantly, he also points out that there are many key players in the pharmacy's success. Eliwa admires and values his team members. He believes that his team is the key to the success of Welltopia Pharmacy, and everyone is focused on the successes of the whole team.

Bumps in the Road

Every business encounters challenges. For Welltopia Pharmacy, opening and running an independent pharmacy requires

a diverse set of skills. Unique challenges for independent pharmacy owners include budgeting within a business plan; creating roles and hiring the right employees; figuring out how to sustain profits; pursuing innovation; and finding investors. To overcome these challenges, Eliwa focuses on improving himself and being a life-long learner. Nothing comes easily within independent pharmacy practice, because most tools and processes need to be built from scratch. However, Eliwa has the passion to create new services and figure out how to operationalize them.

Another area that requires constant attention is the need for financial sustainability. To overcome limitations in reimbursement from insurance companies and to help Welltopia grow in its mission, Eliwa works on diversification by offering affordable cash prices for compounding and supplements. This approach helps Welltopia Pharmacy survive among competitors. At the end of the day, Eliwa believes that, if people do the right thing and put the patient first, they will be rewarded for it.

Moving Forward

Welltopia Pharmacy is a large part of Eliwa's life, and is where he spends most of his time and effort. His strong passion and vision have helped grow the pharmacy business, and he plans on focusing on the team and maintaining good hiring practices, because there is always a need for technicians to serve his pharmacy. For now, Welltopia Pharmacy desires to offer more services that fit its community's needs.

Based on this experience, Eliwa advises all pharmacists who want to open an independent pharmacy to obtain experience in the field for at least a few years. Pharmacists need to know and understand their strengths, weakness, passion, vision, goals, and make a plan to make it happen successfully. During the planning period, the pharmacist should find a mentor for discussion and guidance. Additionally, a pharmacist needs to start with writing a strong business plan, especially focusing on the pharmacy services that they would like to incorporate (e.g., compounding, vaccination administration, script packaging) and how to make that plan sustainable financially. Welltopia Pharmacy holds a strong passion for the community and hopes for improvement and growth through innovation and patient-centered care as an independent community pharmacy in Wisconsin.

Sochenda Pen is a 2024 Doctor of Pharmacy Candidate at the Medical College of Wisconsin in Milwaukee, WI.

Disclosure: The author(s) declare no real or potential conflicts or financial interest in any product or service mentioned in the manuscript, including grants, equipment, medications, employment, gifts, and honoraria.

References

1. Welltopia. 2022. Accessed 17 January 2022. <https://www.welltopiarx.com>
2. Welltopia Pharmacy. Mtchamber.org. Published 2022. Accessed 17 January 2022. <https://www.mtchamber.org/list/member/welltopia-pharmacy-2532>

2022 PSW ANNUAL MEETING

Navigating the Changing Tides of Healthcare

Thursday-Saturday, August 25-27, 2022
Kalahari Resort & Convention Center, Wisconsin Dells



ROSALIND FRANKLIN UNIVERSITY OF MEDICINE AND SCIENCE SCHOOL OF PHARMACY STUDENT WRITING CLUB:

Business Member Spotlight: Smith Pharmacy

by Regine Buenaobra, 2024 PharmD Candidate, Kara Buenaventura, 2024 PharmD Candidate

A pharmacy made for its people is the type of independent compounding pharmacy that Nic and Nikki Smith wanted to start when they opened Smith's Pharmacy in Little Chute, Wisconsin in 2013. They wanted to fill a particular need in their local community and to provide excellent (and accessible) customer service, while simplifying healthcare and the complexity of its costs. Over the years, the pharmacy has expanded the types of services it offers and is valued in the community that it serves.

Smith Pharmacy's staff of pharmacists, pharmacy technicians, and registered nurses have gone through extensive and unique training to fill particular niches. Long-term care staff specialize in care at several local community-based residential facilities (CBRFs), as well as compliance packaging for retail customers. Over-the-counter OTC medication staff specialize in OTC items and have taken special certification courses to assist patients with various cannabidiol (CBD) products. Mail and delivery staff manage daily operations, such as coordinating deliveries based on location

for med sync patients.

Compounding is "the key element that separates our pharmacy from the rest," says owner Nic Smith, PharmD. By offering compounding services, they help to individualize patient care and reduce costs for their patients. Compounding is highly specialized and requires a very specific skill set. Smith Pharmacy has been National Association of Boards of Pharmacy (NABP) compounding-accredited after passing extensive inspections, third-party testing, and quality assurance measures. Compounders attend annual training to

ensure their skills and knowledge are sharp, as well as to stay in the loop with the latest compounding technologies.

Smith Pharmacy employs eight pharmacists, all of whom oversee various aspects of the pharmacy workflow. Smith says that he is very fortunate to have such great pharmacists, each with their own unique skill set. "We try to match these skills with corresponding responsibilities to capitalize on job satisfaction," says Smith.



Right: Smith Pharmacy Staff.

Bottom: Inside Smith Pharmacy in Little Chute, WI



Day to Day Practice

The Smith Pharmacy team starts off their day at 7:30 a.m. with about 20 employees ready to fill prescriptions, prepare mail and deliveries, stock the OTC shelves, prepare vaccinations, and package medications for their long-term care facilities. At 9 a.m., the pharmacy is ready to open its doors and provide care to the community. Smith Pharmacy is home to 45 cross-trained employees, working at a busy pharmacy in a small town, filling about 1,500 scripts a day. Nic Smith explains that diversity of services offered is the key to his pharmacy's success.

In order to keep up with large pharmacy chains, a lot of outside-the-box thinking is necessary. Smith Pharmacy aims to be more personable with their patients, and their goal is to build better relationships with everyone who walks into the pharmacy. The pharmacy is set up in a way where, if a new employee has a quick technical question, answers are available at their fingertips. Smith has created hundreds of internal protocols to keep the pharmacy staff working as a team. The pharmacy has employee meetings every six weeks to encourage feedback and positivity. Smith's approach to hiring technicians is simple: "I believe people skills are the most important aspect for hiring a technician. We can teach someone the way we practice pharmacy, but we cannot teach someone how to be friendly and courteous to others." Smith Pharmacy is willing to take the time to train someone who has these core people skills. The careful selection of team members plays a direct role in improvement of patient care.

Smith routinely collaborates with and presents opportunities to prescribers, in order to find the best ways to meet patients' needs in an affordable way. These opportunities are constantly changing, so Smith strives to stay current on this and to be a trusted resource for prescribers.

Bumps in the Road

A typical challenge for independent pharmacies is to compete with large chains and mail-order pharmacies. When Smith was new to the business, he initially believed he'd launched his pharmacy at the wrong time. At the time, a majority of drugs were in shortage and a lot of their prices skyrocketed. Smith says, "In 2013, I remember losing significant amounts of money on a lot of prescriptions that [had] recently increased in price, such as albuterol,

clobetasol, levothyroxine, lovastatin and much more. I entered the market when these meds were inflated and/or unavailable, and of course the reimbursements lagged significantly with the inflated costs." Thankfully, with a lot of support and help from his family and friends, and countless hours of self-teaching, he was able to come up with ways to navigate these issues and ultimately find ways to become successful.

Smith recalls, "When I started the pharmacy, I could talk pharmacy all day. I knew pharmacy very well. However, I realized very quickly the many things I didn't know. Many things such as HR requirements, payroll, quarterly taxes, etc." Smith purchased QuickBooks online to help with accounting, and then joked that he later found himself doing late night YouTube searches on the definition of a "furniture and fixture." Eventually, his wife quit her nursing job to help with HR needs, and then they hired an accountant/business manager. Smith says that "was the best move our pharmacy has made."

In order to cope with the influx of COVID-19 vaccination needs, Smith Pharmacy rented out an empty suite in their building. All hands were on deck to create this space, to not only abide by COVID-19 protocols, but to create a welcoming space for the community. Friends and family of the Smiths came to paint the space and install carpeting, and, in less than a week, Smith Pharmacy was ready to vaccinate. In order to help with the flow, Smith Pharmacy used Jotform to schedule appointments; timers to help time the 15-minutes after patients were vaccinated; and chairs spaced according to protocol to provide a safe and comfortable environment for patients and pharmacy workers.

In addition, Smith Pharmacy provided vaccines to patients with limited mobility. Patients were asked to park in a certain area of the parking lot, and once they arrived, a staff member was able to meet and vaccinate them right in the parking lot.

During the pandemic, when hand sanitizer was out of stock in stores, Smith Pharmacy came up with the idea to compound their own hand sanitizer. Eventually, they used up all of their isopropyl alcohol supply and still had a large demand. A local politician called Smith and asked if they could help supply polling places with hand sanitizer to ensure people could still vote in-person safely. At first, Smith was hesitant because they were

running out of their supplies for making hand sanitizer and the staff was getting overwhelmed and stressed. The deciding factor was the belief that Smith Pharmacy could troubleshoot. Smith found an alternative formulation for which he could secure supplies, and then offered incentives for staff members to come in on Sunday to make and donate hand sanitizer for the polls and local police/fire departments. This is a prime example of Smith Pharmacy's "can-do" attitude and creativity to find a way to help out its community in a time of crisis.

Smith Pharmacy's most recent update comes in the form of enhanced clinical services—offering biometric monitoring of blood pressure readings, glucose monitoring, and lipid panel result interpretation. Patients are provided with relevant disease state education, optimal medication therapy management services, and comprehensive medication profile reviews that can lead to meaningful outcomes for patients and their caregivers. Helping to provide optimal care, Smith Pharmacy was granted access to Epic, which has helped them to easily communicate with prescribers about mutual patients. In addition to this, a new form of communication between healthcare providers, eCare planning, is championed at Smith Pharmacy. They have been recognized by Community Pharmacy Enhanced Services Network (CPESN)'s Flip-The-Pharmacy initiative as one of the top 25% of all pharmacies to submit eCare plans across the network. In the future, Smith Pharmacy hopes to expand clinical services to include chronic-care management clinics, certified diabetes education sessions, metabolic testing, and acute-care CLIA-waived testing.

Raising the Bar

In only eight years, Smith Pharmacy has grown alongside its community, and has advanced its services. The pharmacy started at 1,500 square feet in 2013. After two expansions, it is now over 10,000 square feet. The growth included adding a drive-through, a long-term care room, a breakroom, and expanding a non-sterile compound lab. Smith is hopeful that he can create an additional sterile compounding lab in the future.

The first few years for the pharmacy were incredibly difficult, with Smith working 100+ hours per week for over three years. It took that time to make a small profit, enabling them to hire additional staff. Smith

says he was fortunate that he was able to make a lot of connections from previous experiences at a chain pharmacy, so he could select his own staff. “This was a huge advantage that allowed my life to come back to normal again,” he says.

Smith Pharmacy is not only a warm and welcoming environment for patients, but Smith likes to make sure his staff members are treated the same way. In order to provide the best care, he believes that treating employees well is absolutely critical. He says that they are fortunate to not have much employee turnover. Smith buys the staff lunch two days a week and gives staff members an array of gift cards as a reward for positive patient feedback or ideas that help advance the pharmacy. The pharmacy pays for clothing orders a few times a year for all staff to upgrade uniforms and to show appreciation for their hard work (while keeping everyone comfortable). Last year, the pharmacy surprised the staff with new shoes for Pharmacy Technician Day. Smith partnered with a local, independent shoe business and had their entire staff go in and get new shoes that were properly fitted. In addition, they try to maintain a fun atmosphere at work. Smith says that

they coordinate various activities, such as fantasy football, March Madness brackets, and Oscar awards predictions, in which they give out prizes to winners and even engrave trophies in the breakroom for bragging rights. The fun atmosphere also extends to customers, who will notice various kinds of music playing and even free Pac-Man video games to play while waiting for prescriptions.

Moving Forward

Smith Pharmacy can be found on social media, and their website is one search away. Smith hopes to eventually be more present online in order to provide services to a larger and more diverse community. Smith’s ultimate goal is to continue operating as a family pharmacy for as long as possible. He feels very fortunate to have a pharmacy in a very loyal area. “Our customers are loyal, we are loyal to them,” he says. Smith emphasizes that he will continue to stay involved in the community as much as possible. For example, he currently coaches three youth sports teams (two softball teams and a basketball team) and was a volunteer weight room instructor for the local high school for almost ten years. The pride he

takes in his community is clear: “When you go to local youth sports tournaments, you will often find a team playing that we sponsor. You don’t see big box stores buying youth jerseys for the kids or donating to local parks. This is one of many examples of how local businesses and local communities have a symbiotic relationship.” If there was one thing that we noted after speaking with Smith, it was that the pharmacy does indeed follow its posted motto in the break room: “Treat every patient that walks through the door like they are your own mother.”

Performing at this high caliber truly sets Smith Pharmacy apart from all others.

Regine Buenaobra and Kara Buenaventura are 2024 Doctor of Pharmacy Candidates at Rosalind Franklin University of Medicine and Science School of Pharmacy in North Chicago, IL.

Disclosure: The author(s) declare no real or potential conflicts or financial interest in any product or service mentioned in the manuscript, including grants, equipment, medications, employment, gifts, and honoraria.



GO ABOVE AND BEYOND AT CONCORDIA

The School of Pharmacy has dual degree options that allow students to learn more, do more, and serve more. Based on their skills and interests, students can combine the Doctor of Pharmacy degree with a Master’s of Business Administration (MBA), Master’s of Public Health (MPH), or Master’s of Product Development (MPD).

EXPLORE THE OPTIONS
[CUW.EDU/PHARMACY](https://www.cuw.edu/pharmacy)

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

Business Member Spotlight: Trig's Pharmacy

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

Trig's Pharmacy is a small chain of independent pharmacies located in northern Wisconsin. Trig's started as a small store in Land O'Lakes, Wis. in 1971 and currently has five retail locations and four independent pharmacies located in Tomahawk, Rhinelander, Minocqua, and Eagle River. All of Trig's Pharmacies are conveniently attached to a grocery store to provide easy access for patients.

Day to Day Practice

A day at Trig's Pharmacy can be anything but routine. Like many community pharmacies, however, the mornings start off with receiving prescriptions from providers and filling them for the patients. Trig's takes great pride in putting the patient first and of keeping the patient-pharmacy relationship strong. While the morning work might be typical, the rest of each day's agenda makes Trig's stand out. With four locations in northern Wisconsin cities, the staff pharmacists have become closely

connected to their communities. Each retail location has one or two pharmacists and several technicians. This smaller staffing and small-town setting allow pharmacy staff to build close bonds with their patients. Pharmacists at Trig's Pharmacy can perform more advanced pharmaceutical care tasks, such as medication therapy management and comprehensive medication reviews.

Immunizations are another area where Trig's Pharmacy shines. Trig's pharmacists not only provide vaccinations at the pharmacy but also travel to various assisted

Below: Trig's Pharmacy Staff in Rhinelander, WI.





living facilities to help immunize patients who are not capable of getting to the pharmacy. The COVID-19 pandemic provided another opportunity for Trig's Pharmacies to serve their patients. Located in a mostly rural part of the state, Trig's staff knew that starting the vaccination effort early and quickly was best, to help ensure that COVID-19 did not continue to impact their communities at the rate it had been. Once the COVID-19 vaccines were developed and approved, Trig's worked to ensure that patients who wanted or needed the vaccine could get it, and those who wanted information on COVID or the vaccine could obtain well-sourced information. The staff pharmacists were able to provide insight into the changing situation to the best of their knowledge, and they initiated many clinics to immunize their communities quickly to help minimize the outbreak in their area. Trig's partnered with large dairy farms and the local Hispanic communities, which make up a large part of the population in northern Wisconsin, to bring COVID immunization clinics to them.

Outside of individual pharmacies, Trig's Pharmacy is also active in the Pharmacy Society of Wisconsin (PSW). All their pharmacies are certified by the Wisconsin Pharmacy Quality Collaborative (WPQC), ensuring that their pharmacies provide the best possible patient care.

Bumps in the Road

For every organization, there are bumps in the road. Trig's Pharmacy is no exception. With the current shortage of pharmacy technicians, they are looking at initiatives to encourage more technicians to apply. They are also looking to develop technician's skills to help provide them with more opportunities within the pharmacy. Another challenge is the reluctance of many pharmacists to move to and work in rural areas. Trig's prides itself on the fact that its

patients know their pharmacists and vice versa; this helps pharmacists feel connected to the people they treat.

Raising the Bar

There are many elements of Trig's Pharmacy that make it stand out. A major one is the flexibility that it offers pharmacists. Staff members at Trig's work on various projects to help make their pharmacies even better. These projects can be either specific to one pharmacy or company wide. Josie Brilowski, PharmD, MBA, the director of pharmacy for Trig's Pharmacy, says that one of her projects was to expand the bubble-packing service to individual patients in the community as well as in long-term care facilities. Many current patients are given medications through MedBox, but Trig's is pushing to switch patients to bubble packing to help reduce risks and cost. Many pharmacists and pharmacy managers are given wide latitude to implement their ideas for improvements. This gives them a sense of ownership and pride in their pharmacy. Doing this allows the pharmacist to enact their ideas for improved healthcare or medication adherence incentives faster and more efficiently.

As a retail pharmacy, there is no special training or requirements needed to work at Trig's; however, they do provide their own training for their staff to provide the best patient care. They are currently looking at immunization training for their technicians and a better program to help technicians progress to certification. Trig's Pharmacy is putting forth effort and resources to ensure that its technicians can work to their full potential. The development of their technicians' skills will make them more valuable to the company and industry.

The success of Trig's Pharmacy is in part due to the great work of its staff members. Pharmacists are continuously ranked in the top five of the most accessible healthcare

providers according to [Gallup News](#). In small, rural communities in northern Wisconsin, access to healthcare is limited. This means that the pharmacist is often the healthcare provider people interact with most. Trig's pharmacists know their communities well. They also build strong relationships with the few providers in the area.

Moving Forward

Trig's Pharmacy will continue to expand to help its communities. Trig's patients often live many miles from a healthcare provider. Trig's has realized this need and has built a niche in helping patients in this area.

You can learn more at the Trig's Pharmacy [website](#), or on [Instagram](#).

For pharmacists who are interested in working in rural areas, Trig's director of pharmacy Josie Brilowski suggests reaching out to pharmacies in the area, such as Trig's, and starting to make connections. The areas are small and close-knit communities where a positive attitude and business professionalism are valued. Trig's looks at its pharmacies as more than just a location for people to refill their medication. Instead, Trig's pharmacies are where patients can come and be treated like family. Trig's offers both IPPE rotations, to help pharmacy students see the differences in treating patients in a rural setting, and APPE rotations, where the students will provide more hands-on care and help with immunization clinics.

Joseph Champoux and Ryan Rypel are 2024 Doctor of Pharmacy Candidates at Concordia University of Wisconsin School of Pharmacy in Mequon, WI.

Disclosure: The author(s) declare no real or potential conflicts or financial interest in any product or service mentioned in the manuscript, including grants, equipment, medications, employment, gifts, and honoraria.

Protect your Tomorrow with **VISTA**



Our VISTA business package policy protects your tomorrow with:

- Commercial Liability
- Cyber Liability
- Sexual Misconduct and Physical Abuse
- Employment Practices Liability
- Pharmacy Professional Liability
- Commercial Property
- Coverage Enhancements

Additional Coverage Options

- Pharmacist Professional Liability
- Pharmacy Technician Professional Liability
- Workers' Compensation
- Commercial Auto
- Commercial Umbrella
- Executive Liability including:
 - Directory and Officers Liability
 - Employment Practices Liability
 - Fiduciary Liability
- Surety and Fidelity Bonds
- Life - Business and Personal Coverage
- Group Disability



Professional | Commercial | Personal | Life & Disability



LEARN MORE AT:
phmic.com/vista-pharmacy

phmic.com

Executive Liability, Surety and Fidelity Bonds, Life, and Disability insurance are written through PMC Advantage Insurance Services, Inc., a wholly-owned subsidiary of Pharmacists Mutual Insurance Company.