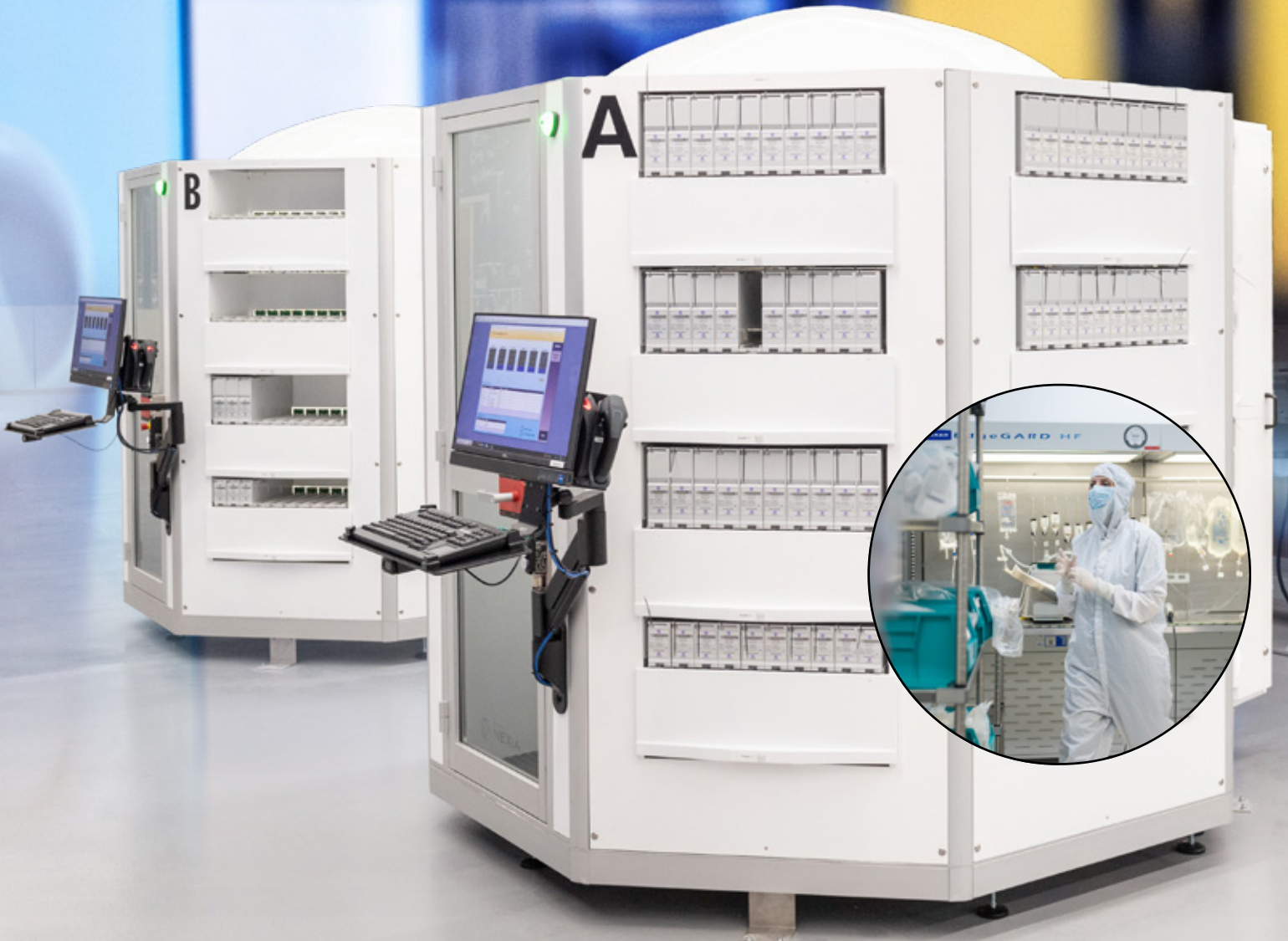






















UNIVERSITY OF  
MICHIGAN HEALTH  
MICHIGAN MEDICINE

Department  
of Pharmacy  
Annual Report  
2023–2024





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Dana Habers, MPH

## Dear Colleagues,

I am very pleased to share our University of Michigan Health Department of Pharmacy Annual Report. This report highlights the extraordinary work of our caregivers and in it you'll enjoy reading stories of teamwork, an unbending commitment to patient safety, and a culture of agility and adaptation as the needs of our patients and communities evolve.

This year, we achieved a historic milestone in opening our new facility in Dexter — a contemporary, fully automated facility designed to open access to comprehensive pharmacy care for more of our patients. This year, we also strengthened our connection with UMH-Sparrow and

UMH-West as we integrated and worked to bring world-class pharmacy care to patients all over the State of Michigan and beyond!

It is a privilege and an honor to lead this team. Congratulations to each of you for all you have accomplished together, and many thanks to our colleagues across the health system for your support. What an incredible year!

With sincerest gratitude & accolades,

**Dana Habers, MPH**  
Chief Innovation Officer  
U-M Health  
Chief Operating Officer  
Pharmacy Services

**Welcome** to the 2023–2024 Department of Pharmacy Annual Report! In the following pages you'll find a synopsis of activities from all of our divisions. It was an incredibly busy year highlighted by the opening of our new 140,000-square-foot service center on Joy Road in Dexter, MI, and significant efforts to further integrate the department into a statewide pharmacy service.

I hope you get a good feel for the work of our department as you peruse this report. And know that what you see here is only part of what has been achieved by our teams. None of the accomplishments you see in this report would have been possible without the people making it happen. I am personally grateful for the efforts of all the pharmacy technicians, pharmacists, administrative staff, and all other pharmacy personnel who live the mission, vision, and values of the department every day.

Going forward we again have our plates full as we plan for implementation of anesthesia workstations to improve accountability and chain of custody for controlled substances, navigate the never-ending changes to the 340B program, roll out the Epic ambulatory pharmacy computer module (aka Willow Ambulatory), prepare for the opening of the new D. Dan and Betty Kahn Health Care Pavilion (a 264 bed inpatient tower), improve pharmacy technician recruitment and retention, and further efforts to integrate our department across the state.

Finally, a sincere thank you to everyone inside and outside the pharmacy walls for your dedication, teamwork, and support of our department.

Go Blue!

**Stan Kent, RPh, MS, FASHP, CPEL**  
Chief Pharmacy Officer  
U-M Health  
Associate Dean for Clinical Affairs  
College of Pharmacy



Stan Kent, RPh, MS, FASHP, CPEL





## Joy Road Service Center



Front entrance of the Joy Road Service Center



The prescription filling automation system



Automation supporting high-volume oral solid prescription dispensing

One of the highlights of the past year was the October 2023 opening of the Joy Road Service Center in Dexter, Michigan. Located about 10 miles west of our main campus in Ann Arbor, the Joy Road Service Center has already transformed how we process specialty prescriptions — now at about 1,000/day. We expect this number to grow at 10-15% each year.

The 140,000-square-foot Joy Road Service Center not only houses our specialty pharmacy operation, but also includes administrative offices, the call center, nonsterile compounding space for both hazardous and non-hazardous drugs, and space for centralized storage of back-up inventory.

Future plans include optimization of robotic technology to fill maintenance prescriptions for patients, and employees across the state, distribution of enteral products for HomeMed pharmacy patients, and other potential use cases that allow us to serve patients across every zip code in the State of Michigan and beyond. We are also leveraging this space to improve inventory management and decompress our other pharmacies, including the main acute care pharmacy in University Hospital, our Taubman Community Pharmacy, and others.

The Joy Road Service Center is home to a tremendous asset for our prescribers and some of the most complex patients. Here we've formed a team — including a robust medication access team dedicated to making sure patients can afford their therapies and pay the lowest possible out of pocket cost, a pharmacist team that is clinically supporting the patient on their journey, and of course, the prescribing providers, who have been tremendous partners along the way.

### CELEBRATING OUR SUCCESS

On February 23, 2024 UM-Health leaders and public officials attended an event to celebrate the grand opening of the new Joy Road pharmacy. Guests heard from Dana Habers, Dr. David Miller, Dr. Puja Khanna, Rheumatologist, a physician champion/partner in the development of the program, along with Joe Hallisy, Associate Director, Creative Services, his wife, Stacy, and their spunky and lively 7-year-old daughter Rose, a patient with cystic fibrosis, requiring multiple complex Specialty Pharmacy medications.

“Little Victor” Rose had the honor of cutting the official ribbon, and guests enjoyed breakfast and tours, where they saw for themselves the impact expansion has had on not only pharmacy services, but the broader community.

Later that same day, Department of Pharmacy employees, faculty, and students from the University of Michigan School of Pharmacy celebrated the opening together with fun, food, and tours. It was all smiles as the team celebrated their hard work with their colleagues and community.

## A LOOK TO THE FUTURE

While the initial expansion is complete, the team continues to disrupt, improve, and prepare for continued growth, something they've embraced from the very beginning of their work together.

"Our mentality as we approached go-live, and even now after being operational, is to plan, have a backup plan, and adjust as we go. We knew issues would arise, but what mattered was our response to those issues," said Rachel Cortis, ACOO for Pharmacy. "Champions adjust, and that's what we did."

That's what the team will continue to do as they serve over 11,000 patients each year and growing — as Joy Road has significant shell space to accommodate future growth.

"The expertise we offer our patients for treating conditions who benefit from complex medications is unsurpassed anywhere," said Dr. Miller. "Specialty medications are growing at a rapid pace and this crucial therapeutic program represents another added value we offer our patients, their families, and the communities we serve."



Ribbon cutting celebration at Joy Road Service Center, February 2024



## University of Michigan Health-Sparrow



Associate Chief Pharmacy Officer Todd Belding



Pharmacy Plus pharmacist Chris Thomas filling prescriptions

University of Michigan Health-Sparrow Pharmacy is a comprehensive and multifaceted pharmacy serving a diverse healthcare network. This extensive system includes six hospitals (845 beds), five retail pharmacies, eight state-of-the-art sterile compounding suites, five infusion centers, and a specialty pharmacy focusing on unique patient needs. Central to the system's success are seven clinical pharmacists with expertise in critical areas such as antibiotic stewardship, oncology, critical care, community hospital settings, pediatrics, and stroke management.

The department is supported by a robust team of 206 members and features 97 pharmacy technicians, 89 pharmacists, 2 PGY-1 residents, and 14 support staff, all working to ensure optimal patient care. The system also benefits from the presence of two Ferris State University professors and a variety of APPE students from the University of Michigan, Ferris State University, and Wayne State University. In addition, 100 Michigan State University second-year medical students rotate through the department annually. This integrated approach supports a range of pharmaceutical services, from complex medication management in sterile compounding suites to specialized patient care across clinical domains.



**338K**  
Outpatient prescriptions



**4.69M+**  
Inpatient dispenses



**6,164**  
Specialty pharmacy prescriptions



### Awards & Recognition

- Awarded full accreditation under the URAC 5.0 Accreditation Program for Specialty Pharmacy
- **Mahar Daman** (Staff Pharmacist) earned BCPS certification
- **Traci Krason** (Pharmacy Manager – Eaton) completed ASHP Sterile Compounding Designated Person Competency Training
- **Matt Bondi** and **Heather Schalk** (Clinical Pharmacists – Lansing) completed the MPF's Health Professional Leadership Academy
- **Todd Belding** (Associate Chief Pharmacy Officer) elected President of Capital Area Pharmacists Association
- **Joe Wildern** (Pharmacy Manager – Lansing) elected Secretary of Capital Area Pharmacists Association

### Highlights:

- Centralized purchasing, 340B, and diversion workflow processes and teams
- Implemented UMH-Sparrow-wide USP and Hazardous Drug Policy to meet updated standards
- Established UMH-Sparrow as a drug repository site in collaboration with POEM program
- Implemented IV room camera technology during dispense prep
- Provided six hours of live CE for team members
- Implemented a three-tiered career ladder for pharmacy techs called Pharmacy Plus
- Added specialty pharmacists in the diabetes and gastroenterology clinics
- Presented two posters at ASHP Midyear Clinical Meeting
- Three community hospital staff pharmacists completed the SIDP antimicrobial stewardship program
- Increased Specialty Pharmacy annual prescription volume by over 63%

UMH-Sparrow, Lansing



## University of Michigan Health-West

University of Michigan Health-West (UMH-W) Pharmacy is composed of 60 professionals dedicated to supporting the pharmaceutical care needs of our growing healthcare system and the communities located in West Michigan. Founded in 1942, our organization serves more than 250,000 patients annually, via 30 locations across 4 counties.

The UMH-W pharmacy system includes a 208-bed teaching hospital, an outpatient pharmacy serving the needs of our employees and their families, an outpatient cancer pharmacy, three state-of-the-art sterile compounding suites, and an ambulatory surgery center/infusion pharmacy. Our pharmacists serve in a variety of roles including hospital-based clinical pharmacist specialists, hospital-based decentralized clinical pharmacists, ambulatory clinical pharmacists, and staff clinical pharmacists.

The department features 24 pharmacy technicians, 26 pharmacists, and 10 support staff. As a teaching hospital, we have a strong relationship with Ferris State University (FSU) and the University of Michigan, hosting an FSU ambulatory clinical professor and a variety of IPPE and APPE students in our award-winning student rotation program. Our pharmacists and specialists provide a variety of clinical services, including pharmacokinetic dosing, antimicrobial stewardship, drug information and participate in critical care, internal medicine, and general multidisciplinary rounding. We also support 86 Michigan State University medical residents, by providing educational lectures throughout their rotations.

### Highlights:

- Replaced two main dispensing carousels at the UMH-W hospital pharmacy
- Established UMH-W Cancer Pharmacy as a drug repository in collaboration with the YesRx program
- Centralized purchasing, 340B, and diversion workflow processes and teams
- Completed 25th National Drug Take Back Day securing 3.81 tons of unwanted drugs from our community since October 2011
- Implemented Epic's unit dose dispense check technology
- Implemented the RL Say Something safety event reporting system
- Improved capture of specialty prescriptions for employees from 19% to over 50% by our outpatient pharmacy team
- Received approval to build an outpatient pharmacy in the hospital lobby
- Greatly reduced the risk of patient harm by removing injectable promethazine from formulary in alignment with UM-Health and UMH-Sparrow
- Implemented standardized fixed dosing for 4F-PCC, reducing average order to administration time by 29 minutes and saving \$114,000 in direct drug savings in the first six months
- Completed 241 open heart surgeries in the first 21 months of service line



Clinical Pharmacist Specialist Kevin Oppeneer



Cancer Pharmacist Bill Lyzenga and Cherry Kwong



Hospital Pharmacy Staff: Erica Mulder, Taylor Haan, Dennis Pham, and Terri Bush



### Awards & Recognition

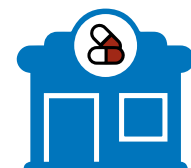
- Awarded full certification under the ACHC Comprehensive Stroke Program – May 2024
- Awarded full recertification as a Level II Trauma Center under the American College of Surgeons – May 2024
- Selected as one of “West Michigan’s 101 Best & Brightest Companies to Work For” – 11th year



**32.8K+**  
Outpatient  
prescriptions



**1.48M+**  
Inpatient  
dispenses



**460**  
Specialty  
pharmacy  
prescriptions

## University of Michigan Health–Academic Medical Center

### Highlights:

- Precepted 15 learners for 25 separate rotations
- Graduated fifth PGY2-EM resident and successfully matched sixth PGY2-EM resident
- Implemented a no-cost public naloxone vending machine in AES
- Provided 50 naloxone kits at discharge; M-OPEN/MEDIC partnership
- Participated & taught at annual Survival Flight Conference
- Implemented bacteremia pages in AES
- Successfully transitioned formulary preference of Alteplase to Tenecteplase for adult patients with suspected acute ischemic stroke; aided thrombolytic administration for 51 patients
- Based on EM PGY-2 resident research, developed a prototype workload tool for AES/CES clinical work completed
- The EMEC committee completed the annual update of the COOP (Continuity of Operations) documents and helped coordinate this year's EMOC Mini Drill
- Updated and replaced the emergency pharmacy caches to ensure emergency preparedness
- Participated in a mock MCI (mass casualty incident) to ensure pharmacy is prepared in the event of a Code D
- Optimized CES Pyxis machines based on analysis of annual Pyxis and MiChart dispensing data:
  - » 12% reduction in total pharmacy dispenses for patients located in CES (~5,500 doses) with a corresponding 7.7% increase in Pyxis dispenses
  - » ~2,750 doses were previously dispensed from CW10 (representing an 8.5% reduction) and ~2,700 doses were previously dispensed from CES (representing a 20% reduction)



### Awards & Recognition

- **50+ Making A Difference Awards**
- *Measuring Pharmacy Clinical Workloads in the Emergency Department: Current Status and a Plan for Action* - published in JAPhA Practice Innovations
- **Andrea Setiawan** - PEDs EM Fellow CES Pharmacist of the Year
- **Liz Macon** - College of Pharmacy Preceptor of the Year (nominee)

## Adult (AES) and Pediatric (CES) Hospitals Emergency Medicine

### ADDRESSING PEDIATRIC & ADULT EMERGENCIES 24/7

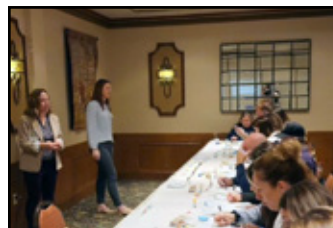
The Emergency Department (ED) team provides 24/7 services, including code, trauma, and medical emergency response; assisting with optimal drug/dose recommendations; compounding lifesaving drips/medications at bedside; providing medication counseling at discharge; precepting students and residents; and recommending proper dose titrations to achieve desired patient outcomes.

Additional services include participation in critical airway management, responding to drug information questions and toxicology consults for acute ingestions, screening for eligibility and drug interactions, and ensuring proper ordering of COVID-19 outpatient therapies, order verification, patient counseling, focused medication history reviews, discharge medication review, compounding and documenting time critical investigational drugs, and medication dispensing at discharge (e.g., post exposure prophylactic meds for occupational exposure, rabies vaccine/immune globulin, investigational drugs, and naloxone for patients at high risk for opioid overdose). AES pharmacists also attend daily rounds for critical patients located in the Emergency Critical Care Center (EC3).

The ED pharmacy technicians assist with medication dispensing, compounding for emergent use, conducting admission medication histories, managing pharmacy satellite/Pyxis inventory, ensuring regulatory compliance, triaging phone calls, and other responsibilities that assist the pharmacist and promote optimal patient care.



AES Leadership pose in front of the first ever Michigan Medicine freestanding Naloxone vending machine in the Adult ED



Liz Macon and Haley Watson teach a course at the annual Survival Flight conference in Frankenmuth



Andrea Setiawan, Haley Watson, Nada Saad, and Liz Vanwert take on Phoenix for the SAEM AEMP conference

## Cardiology and Surgery

The Pharmacy Cardiology and Surgery team offers comprehensive pharmacy services at both University Hospital and the Cardiovascular Center (CVC). This year we added two pharmacists to our team of over 20. Our primary duties extend beyond medication dispensing and preparation. We collaborate with colleagues across departments to ensure safe and effective medication therapy. Clinical services include managing therapeutic anticoagulation, pharmacokinetic dosing, medication reconciliation, renal dosing, TPN management, facilitating transitions of care, and converting IV to oral formulations. Additionally, team members participate in pharmacy committees such as Clinical Practice, Residency Advisory, and Medication Use Evaluation, as well as multidisciplinary committees such as Critical Care Steering, unit-specific quality committees, and Pharmacy & Therapeutics (P&T) Subcommittees (e.g., Anticoagulation, Glycemic Management, Venous Thromboembolism).

### Highlights:

- Developed and updated guidelines, policies, and procedures (e.g. IV/SC prostacyclin)
- Conducted MUEs (e.g. Angiotensin II use in OR, ASA post-CABG) and quality improvement projects
- Participated in multi-center OPTIM trial for ICU patient management
- CBS Detroit featured our research project on pulse oximeters
- Involved in educational initiatives, including precepting, didactic at the College of Pharmacy, onboarding/training, physician and nursing education, resident orientation, etc.
- Several team members served as RPDs and RAC mentors
- Expanded patient care initiatives in outpatient heart transplant clinic
- Attended conferences including SCCM, ASHP Midyear, MSPEN, ACC, and HFSA
- SCCM Michigan Chapter Annual Research Symposium presentations: Evaluation of HIT scoring tools and Guanfacine pilot for Dexmedetomidine withdrawal in CVICU
- Presented on extended infusion beta-lactams at regional critical care nursing conference



### Awards & Recognition

- **100+** Making a Difference Awards
- **Cassie Diamond and Alyssa Divens** received Good Catch Awards
- **Nick Farina** - SCCM Michigan Chapter President-elect
- **Jim Miller** - 2024 Michigan Medicine Residency Preceptor of the Year award
- **Jim Miller** - University of Michigan College of Pharmacy Preceptor of the Year (nominee)
- **Amoreena Most** - SMSHP's 2022-2023 Resident of the Year



Cardiology team members (left to right): Michelle Schultz, Sarah Lewis, Alyssa Divens, David Cordwin, Claire Walter, Khalil Beidoun, Sarah Kean



Surgery team members (left to right): Sabrina Dunham, Patti Kaarto, Michelle Schultz, Annalise Sheehan, Sarah Kean



**20+**  
Pharmacists



**6+**  
Journal Publications



# University of Michigan Health-Academic Medical Center



Tuba pulling Pyxis replenishment batches from the carousels



Team Lead, Micah Pepper, checking patient-specific doses before bedside delivery

## Central Pharmacy

Pharmacists and technicians working in B2 Central Pharmacy remain dedicated to teamwork and collaboration to ensure timely preparation and delivery of medications to our patients. Continued medication shortages and staffing shortages have prompted innovation in workflow and staffing models to ensure safe patient care. Central Pharmacy diligently serves all admitted patients in University Hospital, along with other University of Michigan Health pharmacies and more than 95 clinics. Central Pharmacy is responsible for medication order review and verification, sterile and nonsterile medication compounding, as well as unit dose preparation and delivery. The central pharmacy replenishes automated dispensing cabinets throughout University Hospital (UH), and promptly prepares and delivers first doses and STAT medications — including hazardous and investigational drugs. Our team also aids in drug information questions, code response, and oncology medication compounding and distribution. Despite the many roadblocks encountered over the past year, our team has kept patient care at the forefront of our work.

As an integral component of the health system, B2 Central Pharmacy prepared and dispensed over 900,000 doses, including over 330,000 sterile compounds. In addition, more than 4.5 million doses were dispensed from automated dispensing cabinets throughout UH/CVC. As a strategic priority to increase medication turnaround time, this accounts for just over 80% of all doses dispensed.



**41K+**  
COVID-19  
vaccines  
delivered



**900K+**  
Patient-specific  
doses dispensed



**2M+**  
Orders verified

### Highlights:

- Revised workflows to accommodate USP 800 regulations and the expansion of hazardous drugs
- Implemented workflows to meet USP 795 regulations related to bulk powders used for nonsterile compounding
- Revamped acute care services for Hospital Care at Home patients
- Reviewed and simplified nonsterile compounding recipes to streamline work and improve stability dating for compounds.
- Expanded and standardized remote work opportunities
- Improved efficiencies by applying Lean Principles to “fast movers” nonsterile workspace
- Outsourced repackaging of high utilization oral liquids
- Sunset repackaging software and moved all items to MiChart applications for enhanced protection of PHI
- Phase 1 of B2 successfully completed – the Kits and Clinic Requisitions teams found new homes in the front of the B2 Central Pharmacy space



Mitchell and Josh collaborate between preparing IV compounds

## Adult Operating Rooms and Cardiovascular Center Pharmacies

Operating Room (OR) and Cardiovascular Center (CVC) pharmacy team members provide services to support anesthesia, surgeons, OR nurses, and nurses in the perioperative care units in the care of surgical patients. There are currently four adult OR pharmacy practice sites: University Hospital, Cardiovascular Center, Brighton Center for Specialty Care (BCSC), and East Ann Arbor Surgical Center (EAASC). In addition to supporting the CVC OR, our team members working in this location collaborate in the care of CVC inpatients and patients receiving cardiac procedures in the Cath and EP labs. The core services offered by pharmacists and technicians include medication order review and verification, sterile and nonsterile medication preparation and delivery, drug information, cardiac arrest response, Pyxis stocking, and inventory management. The team also works closely with anesthesia to dispense, reconcile, and monitor usage of controlled substance medications.

### Highlights:

- Developed new pharmacy location for EAA Surgery Center
- Installed CII Safe Pyxis cabinet in EAA, BCSC, and UH OR Pharmacies
- Optimized storage space with new carts
- Went live with a new surgical prophylaxis policy update, allowing pharmacists to order and/or change prophylaxis according to the guideline
- Optimized patient care through technology (BD IV Prep, MiChart, CST, etc.) optimizations
- Trialed PharmacyKeeper as a system for documentation of cleaning OR areas
- Celebrated CVC/OR interns!
- Implemented the CVC/OR suggestion tracker for team member idea submissions
- Created a CVC/OR Microsoft Teams page to improve communication and team member engagement
- Planned for Pyxis anesthesia stations



### Awards & Recognition

- 50+ Making a Difference Awards
- **Carleigh Robinson, Intern**, presented her research abstract at the Pediatric Pharmacy Association Annual Conference
- Three Technicians promoted through the Career Ladder
- Three Pharmacists earned advanced levels via the Pharmacist Recognition Program



CVC Pharmacy team members (left to right): Carleigh Robinson, Patti Kaarto, Hideki Saotome, Audrey Jira, Sarah Kean, Stacie Holcombe, Preet Mavi



OR Pharmacy team members Warren Leidlein, Susan Crowe, Alana Hubbard, Josephine Frye



10

Pharmacists



22

Technicians



4

Practice sites



# University of Michigan Health-Academic Medical Center

**8**

**CII Safe ES devices serviced**

**253**

**ADC devices serviced**



**11**  
**IV Prep Pharmacies serviced**

Pyxis machine - automated dispensing machine provides secure medication storage on patient care units, along with electronic tracking of the use of narcotics and other controlled medications.

## Automation Support

The pharmacy automation support team is responsible for the maintenance and management of pharmacy-specific automation utilized throughout the department. This includes a shared responsibility for central inventory management software (PLX), automated dispensing cabinets (Pyxis ES (ADC), Anesthesia Workstations (PAS)), controlled substance hardware and software management (CII Safe ES), and IV workflow solutions (IV Prep). The team has continued the partnership with our technology vendor in a limited contract release agreement to test and improve the functionality of our automation systems throughout the organization. This year the team prepared for the addition of 130 new PAS and Codonics Safe Label Printers launching in FY25 while still supporting maintenance work with ADCs, IV Prep, and CII Safe maintenance and expansion. In addition, the team supported central inventory management by working with a new team member through April 2024. The team also worked on a Service Now catalog item, launching in FY25 to streamline communication with end users requiring changes to software and hardware.

### Highlights:

- Two Pyxis ES system upgrades to support better workflows & medication management
- Optimized efforts to increase ADC dispenses and decrease workload in satellites
- Installed seven CII Safe ES installations at onsite and offsite satellites
- Prepared Codonics database
- Countless interventions in ADCs, CII Safe, and IV prep for drug shortages, recalls, and PAR change requests
- » IV prep: Fix of settings to better manage barcode scanning and help fix 340B errors
- » CW IV prep go live #2 preparation
- » Required changes for USP 797 and 800
- » Participation in new IV governance workgroup



### Awards & Recognition

33 Making a Difference Awards across the five-member team





## Adult Medicine

The Adult Medicine Team is one of the largest inpatient pharmacist teams at University Hospital. The team is responsible for taking care of a wide range of patients daily, and typically accounts for covering up to about half of the inpatient adult census. Services include a large spectrum of patient populations including but not limited to: medical and neuro intensive care units, neurosurgery, inpatient psychiatry, gastrointestinal/liver specialty services, inpatient rehabilitation, inpatient family medicine, and medical observation units, along with up to 19 various general medicine teams.

Core services include pharmacist order review and verification, code blue response, pharmacokinetic monitoring and dosing for specific drugs, anticoagulation therapy monitoring and patient education, renal dosing, parenteral nutrition monitoring, and comprehensive profile review. Many team members are cross-trained in numerous other areas in our department, making our team a crucial fixture in the department.

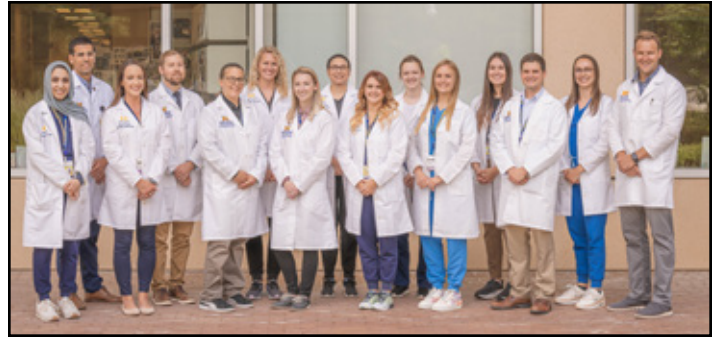
### Highlights:

- Added a pharmacist for Hospital Care at Home (HcAH) in February 2024
- Provided care for 147 patients in HcAH between February and July 2024
- Piloted an adult emergency patient boarding service program
- Improved the transition of care process by identifying discharge medication barriers
- Improved communication with hospitalists
- Organized a fall kickball team
- Initiated hospitalist pharmacy orientation education
- Assisted with several order set and guideline reviews
- Pharmacist appointed to Board of Pharmacy Specialties Critical Care Specialty Council



### Awards & Recognition

- 50+ Making a Difference Awards
- Three MVP Nominations
- Two Good Catch Awards



Part of the Adult Medicine Team



**19**  
Pharmacists



**30+**  
Services covered

## University of Michigan Health–Academic Medical Center



Haley Hixson, Jamie Park, Jen Hagopian, Krysta Walter, and Liz Wilpula celebrating the graduation of our wonderful PGY-2 SOT resident (Alisia Chen)



Jen Hagopian, Alisia Chen, Liz Wilpula, Krysta Walter, Hansa Mreyoud, and Haley Hixson learning how to make chocolate truffles at the Mindo Chocolate Truffle Making Class



Jamie Park, Hansa Mreyoud, Haley Hixson, and Krysta Walter participating in a themed mini-golf course at the Transplant Center Holiday Party

### Transplant

The transplant team promotes the safe and effective use of medications within transplant programs. Transplant pharmacists are involved in all the phases of transplant. Prior to transplant, the pharmacists participate in the selection meeting and address medication-related questions from the transplant evaluation team. During admission, the pharmacist rounds with the multidisciplinary team providing pharmacotherapy recommendations and patient education on medications prior to discharge. In the outpatient clinic (abdominal and lung transplant programs), the pharmacist provides medication education to patients and family/caregivers, assesses for medication-related adverse effects, and assists the rest of the team regarding monitoring and managing medications. They collaborate with providers to manage complications from transplant medications (e.g. hyperglycemia, hypertension, renal dose adjustments, etc.).

Our team also provides services in the transplant endocrine clinic. Transplant pharmacists are available to answer medication-related questions via MiChart during non-clinic days. The pharmacists also follow up with patients after medication adjustments and perform comprehensive medication reviews for patients. In addition, the transplant pharmacists lead and support various QAPI initiatives (including protocol development and sustainment) throughout the Transplant Center. The team also participates in training the PGY-2 Transplant resident, PGY-2 Ambulatory Care residents, PGY-1 pharmacy residents, and P3/P4 students.

#### Highlights:

- Performed a record number of solid organ transplants
- Expanded pharmacy services to the pre- and post-lung transplant clinics
- Implemented CYP3A5 genotype-guided tacrolimus dosing in adult kidney transplant program
- Precepted five PGY-1 residents, three PGY-2 residents, and nine PharmD students
- Contributed two lectures on Pancreas and Islet Cell Transplantation for the ASHP/ACCP BCTXP Board Review Course
- Delivered guest lectures at the U-M College of Pharmacy for Pharmacy 503 and Pharmacy 704
- Invited speaker at American Congress Transplant 2024
- Presented webinar for ACCP Transplant PRN
- Completed >1,000 ambulatory care visits across different organ groups



#### Awards & Recognition

**Krysta Walter** won the American Society of Transplantation, Transplant Pharmacy Community of Practice MVP Award for contributions to the Transplant Pharmacy Adherence Consortium (TPAC) Workgroup



6

Team members



9

Abstracts



2

Publications

## C.S. Mott Children's and Von Voigtlander Women's Hospitals

### Children's and Women's Hospitals

C.S. Mott Children's and Von Voigtlander Women's (CW) Hospitals, a 350-bed acute care academic medical center, is the top pediatric hospital in the state of Michigan according to *U.S. News & World Report* and was nationally ranked in 10 specialties during 2023-2024. The Mott pharmacy provides services for diverse pediatric disease states, maternal fetal medicine and women's health, adult hematology/oncology, and adult and pediatric infusion services. As a Level I trauma center, CW has been certified by the American College of Surgeons as providing the highest level of emergency and surgical care to pediatric patients 24 hours a day, 365 days a year.

In addition to direct patient care, the CW team actively participates in 20+ committees, contributes to guidelines and policies, conducts education and professional development sessions, and continuously works on IT infrastructure optimization including order sets, pump library maintenance, and Pyxis systems. Our team supports the mission to provide education for the next generation of pharmacy professionals through the clinical and operational training and development of PGY-1 and PGY-2 residents, interns, and numerous experiential education experiences offered.

#### Highlights:

- Expanded dose rounding for 20+ medications and added 15 prepack medications to optimize turnaround time
- Enhanced clinical service continuity with float specialist and expansion of decentralized generalist obstetrics coverage
- Optimized USP <800> initiatives to improve staff safety
- Established an interdisciplinary committee to reduce hospital acquired pediatric PIVIE injuries
- Pioneered SafeDose code sheet in Pediatric ICU
- Established nirsevimab (Beyfortus) criteria for RSV prevention and Vaccine for Children's (VFC) program for inpatients
- Executed new USP <797> guidelines, reducing stock solution waste for CW10 and decreasing turnaround time for immediate use compounds in CWOR
- Decreased workload and waste for sugammadex and IV acetaminophen in CWOR Implemented Daily Management System (DMS) huddles in CW10
- Launched BD IV Prep for pediatric patient-specific, nonhazardous IVPB doses



Ali Alsaden, Ruby Jones, Mariam Aboumrad, Devonte Riley, and Mohamed Bazzi



Joon Seo Youk, Janki Patel, Christopher Bond, Kelly Ratanasitee, and Julia Nahle



### Awards & Recognition

- 207 Making A Difference Award recipients
  - 99 Good Catch Award nominees
  - 14 Pharmacists with BPS certification or fellowship
  - Southeastern Michigan Society for Health-System Pharmacists (SMSHP) Exemplary Resident CE award recipient
  - Pharmacy to Dose: Critical Care Podcast - 2023 Publication of the Year award recipients
  - Congenital Heart Center Zingerman's award recipient
- FY24 Publications**
- MacKinnon T, Schaeffler K, Penzien C, Sauro A. **Implementing USP <800> guidelines in pediatric hospitals.** *Pharm Times.* 2024 Jan 19;13(1): 28-33.
  - MacKinnon T, Schaeffler K, Kent S, Clark JS. **Program for advancing supervisor skills among pharmacy technicians.** *Am J Health Syst Pharm.* 2024 Mar 7;81(6)235-240.



## Community Pharmacies and Transitions of Care



**177K+**  
Prescriptions  
**24%**  
Growth



**4,750**  
Bedside  
deliveries  
**48%**  
Increase



**2,824**  
Prior  
authorizations  
**57%**  
Increase

### Highlights:

- Significant increase in prescription fill volumes observed across all sites
- Resolved record-setting number of discharge medication access barriers
- Implemented Daily Management System (DMS) huddles
- Implemented Verify on Receipt workflow for DSCSA compliance
- Improved access by partnering with YesRx Cancer Drug Repository Program
- Offered standardized diabetic testing supply options for improved access
- Implemented MiChart Consult Order-TOC Discharge Medication Access for Adult Hospitals
- Dispensed controlled substance medications to Hospital Care at Home patients
- Implemented FillMaster for improved safety of medication reconstitution
- Implemented C2 Safe and Pharmacy Keeper at KEC

### Community Pharmacies and Transitions of Care

There are five community pharmacy locations at UM-Health-Academic Medical Center (UMH-AMC). Two are located on our main medical campus, the Taubman Ambulatory Care Pharmacy and the Rogel Cancer Center (RCC) Community Pharmacy, and three are located within offsite health centers, the Kellogg Eye Center (KEC) Pharmacy, East Ann Arbor (EAA) Pharmacy, and the Brighton Center for Specialty Care (BCSC) Pharmacy. These locations provide services to a diverse population of adult and pediatric patients receiving care at UMH-AMC hospitals, emergency departments, and ambulatory clinics and surgery centers, in addition to U-M employees, retirees, and dependents. UMH-AMC community pharmacies provide prescription fulfillment, nonsterile compounding, patient counseling, medication therapy management, and immunization services.

UMH-AMC community pharmacies specialize in providing difficult-to-obtain medications to our patient population. These medications are often high cost, require sterile or nonsterile compounding, are used to treat complex disease states, have limited distribution networks, or are otherwise uncommon or not stocked by local community pharmacies. The community pharmacies also partner with specialty pharmacy services to ensure patients have access to the full spectrum of ambulatory pharmacy services, regardless of what medication(s) they are filling.

The Transitions of Care (TOC) Pharmacy Services team strives to make the transition from hospital discharge to home as seamless as possible. Services include performing copay checks to assess insurance coverage, submitting prior authorizations, appealing rejected prior authorizations, identifying preferred formulary alternative medications, resolving other insurance or pharmacy medication access issues, and coordinating the filling and bedside delivery of medications to discharging patients. These technicians increase patient satisfaction and medication access during the stressful transition between hospital and home. The team partners with inpatient pharmacists, providers, nurses, social workers, and case managers to improve the coordination of care.



### Awards & Recognition

- Quality Month Poster Presented - “Implementation of a Triage Technician Position in Taubman Pharmacy” (Lead: **Elaine Burley**, Community Pharmacy Intern)
- Quality Month Poster Presented - “Mott PACU Meds-to-Beds Pilot: The Impact of Implementing a Meds-to-Beds Service at Mott PACU” (Lead: **Mackenzie Dopierala**, Administrative Pharmacy Intern)

## Infusion, Hematology, Oncology Pharmacy Services

### Infusion, Hematology, Oncology Pharmacy Services

Infusion, Hematology, Oncology Pharmacy Services supports the clinical and operational needs of patients diagnosed with malignancy and other chronic conditions throughout the care continuum. Our Hem/Onc care team exemplifies excellence as both independent and collaborative care providers within the structured framework of the medical team. This year our dedicated professionals conducted 5,000+ independent patient visits within the ambulatory setting. They sustained approximately 130 patients daily in the acute care environment, distributed across 12 specialized rounding teams. They are essential contributors to treatment planning, collaborative research endeavors, and developing policies and clinical guidelines.

Seventy team members managed 88,000+ infusion visits for patients battling oncological, hematological, and various chronic conditions. They operated out of our ambulatory infusion centers located in Ann Arbor and its neighboring suburbs, ensuring accessible, high-quality care.



Infusion, Hematology, Oncology, Pharmacy Services Teams: Vincent LaRocca, Andrew Wechter, Rachel McDevitt, Allison Schepers, Prabha Vogel, Gianni Scappaticci, Catherine Christen, Victoria Nachar, and Jane Crawford

#### Highlights:

- Collaborated with acute care leadership to develop a dedicated acute care oncology generalist team
- Reopened infusion services at East Ann Arbor Medical Center and expanded services at Brighton Infusion
- Created a hemophilia management compendia as a multidisciplinary resource
- Established presence on peds hemophilia consult service
- Expanded ambulatory remote blood pressure monitoring and related pharmacist management
- Decreased length of stay and optimized reimbursement through outmigration
- Created and maintained >1,300 treatment and therapy plan order sets
- Improved gravimetric utilization within IV workflow management system during sterile compounding
- Established a Cancer Drug Repository (CDR) in collaboration with YesRX



#### Awards & Recognition

- **Allison Schepers** selected as Vice Chair of HOPA BCOP Conference
- **Lydia Benitez** promoted to Associate Clinical Professor
- **Maddy Ochs** awarded Oncology Preceptor of the Year
- **Nidhi Vaidya** awarded MM Career Development Fund Scholarship
- **Tom Vassas** completed Michigan Pharmacists Foundation's Health Professionals Leadership Academy



Standard of care treatment plans



716K+ Verifications



Research treatment plans



13 Publications



20+ Regional & national presentations



156K+ Dispenses

## Specialty Pharmacy



Back row: Kortney Jones, Jennifer Ludolph, Tanesha Trousdale, Heather Meredith, Cheyanne Ward, Amy Scott, Nick Weller, Krystie Gagnon, Crystal Robinson, Dawn Jackson, Sean Rimando, Peggy Martin, Haley Truhn, Amy Hopper, Michelle Roberts, Crystal Ford-Nalli, Taylor Vredeveld, Alex Coon, Derek Haynes, and Alyssa Murray. Front row: Becky Royal, Michelle Doane, Zane Underwood, Nadia Dakroub, Katie Cunningham, Makenzie Draper, Jalen Evans, Anxhela Vila, and Lis Smith



**4,165**  
Inbound calls



**3,879**  
Outbound calls



**18K**  
Prescriptions  
shipped



**8,600**  
Packages  
shipped



**633**  
Referrals from  
specialty clinic  
providers



**5,550**  
Patients  
enrolled  
in Patient  
Medication  
Program

### Specialty Pharmacy

The University of Michigan Health Specialty and Home Delivery pharmacy team ensures timely and continuous access to specialty and transplant medications. While there is not a universally accepted definition for a specialty medication, we primarily handle self-administered injectables, high-cost medications, and/or medications that require special handling or monitoring. Our pharmacists support patients with comprehensive, personalized care throughout the entire treatment process and make sure patients receive the correct medications. Pharmacy technicians in our call center take incoming and place outgoing calls to patients to coordinate medication refills; pharmacy technicians in our fulfillment area fill prescriptions and prepare them for our patients to send direct to their homes or pickup at a U-M pharmacy location. All team members play a key role in helping our patients access their specialty prescriptions.

#### Highlights:

- Relocated fulfillment, inventory management, compounding, and administrative functions to Joy Road Service Center
- Implemented new software and automation robot to assist in filling transplant and maintenance medications
- Expanded services to maintenance medications for enrolled patients
- Implemented fully curbside recyclable cold chain shipping products
- Awarded Accreditation Commission for Health Care (ACHC) specialty pharmacy accreditation resulting in dual accreditation
- Implemented bidirectional SMS text messaging for specialty Rx refills
- Standardized workflows by aligning patient financial conversations with PFCs during the enrollment call across all disease state based teams
- Launched a pharmacist weight loss dosing and monitoring referral program
- Offered out-of-state shipping services to Arizona, Colorado, and Florida
- Implemented the DMS huddle system to enhance team communication and problem-solving opportunities



#### Awards & Recognition

- Two team members achieved Certified Specialty Pharmacist Certification for a total of 10 CSP across the team
- One team member certified as a Board Certified Pharmacotherapy Specialist for a total of 14 BPS certified pharmacists (10 BCPS, one Pediatrics, one Ambulatory Care, two Oncology)
- **Publication:** Kim AS, Thompson AN, Axon RD, Sabourin A, Davies MJ, Channon C, Nasr SZ, Phan H. **A scoping review of clinical pharmacist and pharmacy technician contributions to cystic fibrosis care.** *Journal of the American College of Clinical Pharmacy.* 2023;6:1357-1365. [doi.org/10.1002/jac5.1877](https://doi.org/10.1002/jac5.1877)



## Medication Access Team

The Medication Access Team consists of Patient Financial Counselors (PFC) servicing both the Ambulatory Clinics (AMA) and the U-M Specialty Pharmacy (SPC). The medication access team ensures patients have access to medications covered under the pharmacy benefit by completing prior authorizations and reducing financial barriers to patients starting and continuing specialty and maintenance medications.

Our outstanding PFC team helps patients navigate medication access barriers by performing benefits investigations and copay checks, submitting prior authorizations and appeals, connecting eligible patients with copay cards and grants, and coordinating free drug for eligible patients via Patient Assistance Programs (PAPs).

### Highlights:

- Created Specialty Pharmacy Liaison position to ensure those eligible had access to U-M caliber services through the Specialty Pharmacy
- Expanded services to General GI, an overflow pool dedicated for weight loss medications, and increased their cross coverage among clinic teams
- Began onsite work at the Joy Road Service Center to collaborate with their service line colleagues, including pharmacists and technicians



### Awards & Recognition

- 234 Making a Difference Awards
- MH Pediatric Rheumatology received “Overall rating of care” for patient experience performance
- Characterizing access for oral oncolytics used to treat breast cancer at an academic medical center abstract accepted to ASCO Quality Care Symposium; Hem/Onc PFC played a key role in collecting research for this effort



(back row): Kim Williams, Staci Joseph, Fyonae Jones, Johniqua Ware, Kayla Underwood, Sara Gentner, Richard Fauls, Wade Goodell, Bridget Neview, Carolyn Goliver, Nicole Banta, Michael Phillips, Carrie Hammond, and Shauna Pitman  
(front row): Aliaa Chehadeh, Madeleine Barker, Mikhaela Baez, Jessica Pflueger, Kaitlyn Henry, Jennifer Gilbert, Brittany Myrand, Taylor Kent, Charlotte Jones, and Melanie Woods



**54**  
Patients connected to U-M Specialty Pharmacy via Specialty Pharmacy Liaison



**5,045**  
Prior authorizations submitted



**391**  
Financial Assistance coordination (PAPs/Grants/Copay Cards)



**8,587**  
Patient touchpoints to start and continue medications



**2,666**  
Copay checks completed

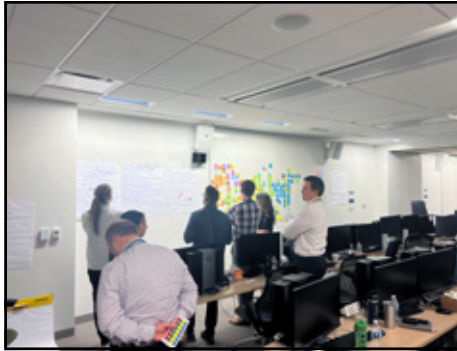


**431**  
Appeals submitted

## Pharmacy Quality, Regulatory Compliance, and Safety (PQRS)



Julia Pasco  
Continuous Improvement  
Specialist, who coordinates  
quality improvement projects



Strategic Planning Retreat  
Our executive team collaborating at the FY25 Strategic Retreat



Daily Management System  
Visual Huddle Board at the  
Research Pharmacy

Infusion Rapid  
Improvement Event  
Our infusion stakeholders  
collaborating at our current  
state workflow event



### Quality & Continuous Improvement

Quality focus is on analyzing and improving outcomes, optimizing clinical processes and operations, supporting regulatory readiness, and supporting educational platforms for Quality, Continuous Improvement, and Safety.

#### Highlights:

- Streamlined the 2-hour call ahead list
- Defined the current state effort of clinical pharmacists
- Revamped the process for discharge scripts at Taubman Pharmacy
- Developed a standard for department continuous improvement training
- Developed and monitored key performance indicators for the specialty pharmacy move
- Implemented lean practices in the Children's & Women's (C&W) Pharmacy, including a 5S Event
- Identified opportunities to streamline continuous infusion requests in relation to line changes
- Implemented Daily Management System huddles across the department
- Facilitated an improvement event that led to the creation of Michigan Medicine Infusion, Hematology, & Oncology Pharmacy Enterprise (MI-HOPE)
- Developed a new strategic planning and tracking process for FY25



**9**  
Projects  
initiated



**10**  
Projects  
completed



**35**  
Quality Month  
posters

## Regulatory & Compliance

The primary responsibilities of the Regulatory & Compliance team involve auditing our various medical facilities — the ambulatory care clinics, acute care settings, community health centers, HomeMed, and infusion pharmacies. The goal of these audits is to support the institutions and ensure their readiness to meet regulatory standards. Moreover, the team serves as subject matter experts (SME) in several specialized areas: they have expertise in home infusion, medication management, DEA regulations, and nonresident pharmacy licensing. They are also the designated point of contact for any questions or concerns related to these areas, responding to inquiries from the accreditation team, subject matter experts, and leaders throughout University of Michigan Health. Finally, the team acts as a bridge for communication and coordination between ambulatory care leaders and staff on one side, and the Pharmacy Department on the other, particularly concerning issues of medication management.



Regulatory Compliance Team Kathy Soupis, Scott Ciarkowski, Brett Leja, and Karrie Sokolowski

### Highlights:

#### ACU Medication Management Inspections

- Completed 295 inspections at 151 ambulatory clinics
- 27 controlled substance inspections at 13 ambulatory care clinics
- Three ambulatory care clinics added to biannual inspections
- Performed consultative walk throughs regarding regulatory matters

#### Pharmacy Inspections

- Completed 45 inspections at 22 pharmacy satellites
- Added Specialty Pharmacy & Wholesaler license at Joy Road

#### HomeMed

- Completed 129 policy and procedure reviews as the departmental SME for policy management review in PolicyStat for HomeMed
- Acquired 504 Joint Commission Elements of Performance expectations specific to HomeMed with the move of home infusion pharmacy services under the Pharmacy Enterprise

- Aligned HomeMed software conversion with 340B program management using new required data fields
- Established new pathway to maintain infection control governance reporting for home infusion
- Centralized home infusion medication safety reporting
- Established UM-H Risk Pro alignment of HomeMed within Pharmacy Services

#### External Survey Participation

- TJC Intra-Cycle Monitoring Survey
  - » Provided education to increase regulatory readiness: email communication, virtual meetings, updated regulatory website documents
  - » Created action plans for over 40 different findings
- Michigan Department of Licensing and Regulatory Affairs (LARA) Pharmacy Inspections *Joy Road and Kellogg Inspection*
- Specialty ACHC site accreditation

#### Educational Activities

- In-serviced nursing leadership in Ambulatory Care on controlled substance handling and auditing expectations
- Developed the “Regulatory Monthly Minute” which highlights specific regulatory related topics
- Quarterly newsletter for Ambulatory Care colleagues
- In-serviced new pharmacy staff on regulatory readiness and department policies



**295**  
ACU  
inspections at  
**151**  
ambulatory  
clinics



**27**  
ACU CS  
inspections



**45**  
Pharmacy  
inspections



# Pharmacy Quality, Regulatory Compliance, and Safety (PQRS)



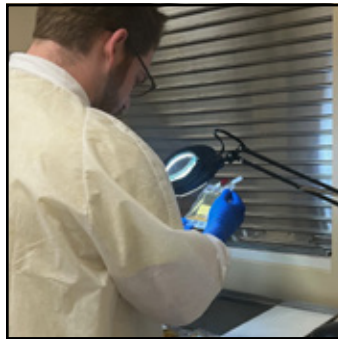
Brianah Robinson conducting nonsterile training



CCT Team Peony Garden Photo June 2024: (back row) Drew Prater, Scott Blackburn, Jamie Tharp, David Melton, Esther Im, Joey Jessing. (front row) Amanda Rivera, Brianah Robinson, Aimee LaGuire, Seema Jetli, and Carrie Penzien. Cheyanne Ward (not pictured)



Amanda Rivera conducting a media fill assessment



Drew Prater conducting incubation of media fills

## Compounding Compliance

**Sterile compounding** occurs across the UMH-Academic Medical Center (AMC) at 19 locations by over 450 trained compounders including both pharmacy technicians and pharmacists.

**Nonsterile compounding** occurs at seven locations by approximately 250 pharmacy technician compounders and 130 trained checking pharmacists.

**The Compounding Compliance Team (CCT)** supports pharmacy compounding across the organization through facilitating United States Pharmacopeia (USP) required compounding program activities including compounder education and competency assessment, facilities monitoring and certification coordination, policy writing, compliance monitoring, and inspection and accreditation/certification facilitation.

CCT pharmacists lead Pharmacy and AMC committees for Compounding Compliance Oversight, Hazardous Drug Oversight, Hazardous Drug Classification, Environmental Monitoring, and Facilities Downtime and Project coordination. They also evaluate external compounding pharmacy and outsourcing facility vendors.

The CCT comprises an Assistant Director of Pharmacy, three Clinical Pharmacist Specialists, one Pharmacy Technician Supervisor, one Data Analyst, three Pharmacy Technician Coordinators of Compounding Training, 1.5 Pharmacy Interns, and one Project Manager who supports compounding and non-compounding projects.

### Highlights:

- Launched nonsterile compounder initial & ongoing training program
- Implementation bulk pharmaceutical powder handling process
- Rolled out modernized nonsterile compounding equipment and use standards
- Redesigned the sterile & nonsterile eLearning modules post USP revisions
- Revised the immediate use compounding policy and developed AMC-wide education
- Changed to a closed system transfer device brand
- Led an RFP for contracted certification services
- Responded to hosting and managing findings for multiple inspections/surveys



### Awards & Recognition

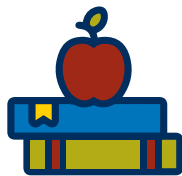
- 19 Making a Difference Awards for team members
- **Jamie Tharp** received Michigan Pharmacist Association's Hall of Honor award for significant contributions to the association
- Milestone Anniversaries:  
20 Years - **Cheyenne Ward & Jamie Tharp**  
15 Years - **Aimee LaGuire**  
Five Years - **David Melton & Scott Blackburn**



**5**  
Publications/  
Presentations



**228**  
Audits  
conducted



**113**  
New Sterile  
Compounders  
Trained

## Diversion Prevention

The Diversion Prevention Team (DPT) aims to prevent, detect, and respond to controlled substance (CS) diversion. The DPT is a centralized team that assists with troubleshooting and responding to CS handling issues. Our team works with frontline staff and department leaders for nursing, pharmacy, and anesthesia to ensure accurate CS records and appropriate CS handling in line with policy and regulations.

Core services include CS discrepancy review and resolution, CS policy and procedure consultation, education on diversion prevention strategies and awareness, CS reconciliation for nursing transactions, proactive reviews of anomalous behaviors related to CS, and investigations into diversion concerns.



Christie Campbell, Maggie Keiffer, Steve Harvey, Diversion Prevention Team

### Highlights:

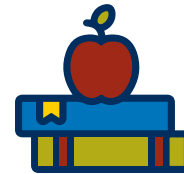
- Initiated central nursing orientation education during onboarding
- Created standard work templates for specific pharmacy CS workflows
- Revised Cornerstone modules for efficiency and clarity
- Integrated services with UMH-Sparrow
- Implemented CII Safe devices across satellite pharmacies
- Published in September 2023 edition of *Pharmacy Purchasing and Products: Reporting Structures for Diversion Prevention*
- Standardized UMH-Sparrow nursing audit process to include 700+ audits quarterly
- Initiated DMS huddles
- Improved internal workflows to better capture effort and track metrics
- Prepared for deployment of Pyxis anesthesia stations



**1,581**  
Employee  
CS behavior  
reviews



**22K+**  
Nursing CS  
transactions  
audited



**82**  
Education  
sessions



**1,000+**  
Nursing hours  
saved (CS  
reconciliation)

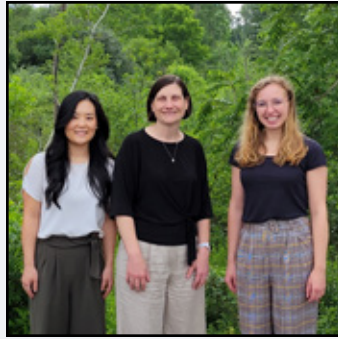


**1**  
Diversion  
confession and  
return to work

# Pharmacy Quality, Regulatory Compliance, and Safety (PQRS)



Kathy Dasse, Kaitlyn Ziegele, and Kaylyn Smith



Enjoying the sun at the new Joy Road building! Emily Yoon, Karin Durant, and Allison Frazer (Julie Berman and Gundy Sweet not pictured)

## Medication Use Policy

### TEAM OVERVIEW

The Medication Use Policy team helps promote the efficacious, safe, and cost-effective use of medications throughout the health system. The team collects, analyzes, and disseminates drug information as part of their mission. Team members also partner with providers, clinical pharmacists, informatics, and Pharmacy operations on many medication use initiatives.

### CORE RESPONSIBILITIES

Core responsibilities include formulary management, developing criteria for use, conducting medication use evaluations, creating or revising clinical guidelines/policies, answering drug information questions, and supporting 16 Pharmacy & Therapeutics (P&T) Subcommittees. The team also precepts PGY-1 pharmacy residents, serves as a primary experiential training site for APPE students, and lectures at the College of Pharmacy.

### Highlights:

- Facilitated 12 P&T Committee meetings
- Led the Product and Vendor Selection Committee (PVSC) on initiatives leading to over \$2 million in cost savings and cost avoidance
- Published 12 editions of the *Pharmacy ForUM* newsletter
- Completed eight drug class reviews
- Assisted with over 20 medication use evaluations
- Assisted with over 100 formulary additions or criteria for use revisions
- Precepted 15 PGY-1 pharmacy residents and 15 PharmD candidates on a drug information rotation
- Partnered with Hepatology/Nephrology providers on a terlipressin study
- Partnered with Anesthesia on sugammadex improved medication use
- Partnered with Compound Compliance on recipe reviews for USP <795> and USP <797>



### Awards & Recognition

- 13 Making A Difference Awards
- **Karin Durant** appointed to the Medication Management Section Advisory Group for ASHP
- **Emily Yoon** co-authored a Quality Month poster: Treatment of Symptomatic or Emergency Hyperkalemia in Adult Patients Clinical Guideline Revision — Focus on Reduction of Hypoglycemia and Hyperglycemia



**385**  
Temperature  
excursions  
evaluated



**46**  
Drug defects  
reported



**1,168**  
Drug  
information  
questions/  
requests  
answered



## Medication Safety

The Medication Safety Team improves the reliability of our medication-use processes across Michigan Medicine. Using various tools & techniques, we collaborate with other departments, vendors, and staff to respond, maintain, and proactively improve medication safety.

### Highlights:

- Assessed and recommended Smart pump fleet replacement (Alaris)
- Piloted SafeDose in 10E PICU to replace current “CPR” cards
- Implemented IV promethazine risk reduction strategies
- Transitioned from vials to epinephrine auto-injectors (EpiPen)
- Implemented standardized review process of products with excipients known to cause harm in neonatal and pediatric patients
- Assessed ADC Pyxis character limit
- Researched and implemented measures for intravenous iron safety



MedSafe team: Courtney Doellner, Scott Ciarkowski, Jeff Hurren, Christina Seeley, and Elizabeth Saylor



**6,891**  
Voluntary  
reported events



**6,635**  
Risk report  
reviews



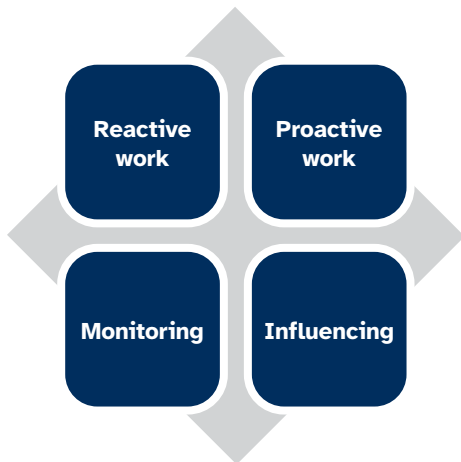
**325**  
Good Catch  
nominations



**47**  
Onboarding  
sessions



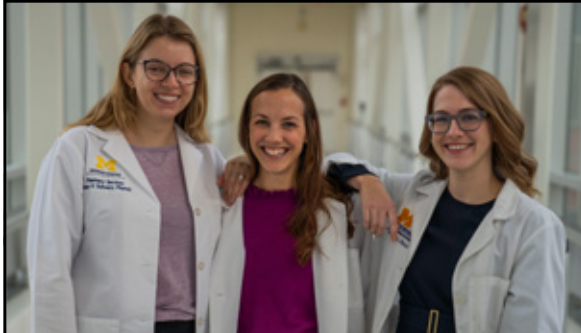
**8.5M**  
Doses  
administered



# Pain Management and Palliative Care



Ribbon cutting ceremony to celebrate opening of the new no-cost naloxone machine on Tuesday, February 20, 2024. Pictured: Charles Reuland, Chief Operations Integration Officer; Jillian DiClemente, Opioid Stewardship Lead, Pain Management Clinical Pharmacist-Specialist and Adjunct Clinical Instructor in Pharmacy; Dr. Paul Hilliard, RWTS: Comprehensive Pain & Recovery Collaborative, Associate Professor of Anesthesiology and Section Head, Pain Medicine; Nancy May, Chief Nurse Executive (Michigan Medicine) and Adjunct Clinical Instructor in Nursing, School of Nursing; Chad Brummett, OPEN Executive Clinical Director, Bert N LaDu Professor of Anesthesiology Research, Professor of Anesthesiology, Associate Chair for Research, Department of Anesthesiology; Chin Hwa (Gina) Dahlem PhD, Clinical Associate Professor of Nursing, School of Nursing



Pain Pharmacy Team. Pictured: Abbey Schwery, Jillian DiClemente, and Madison Irwin (not shown: Michael Smith and Rania Bazzi)

## Pain Management and Palliative Care

The Pain Management and Palliative Care Team provides inpatient and ambulatory care clinical pharmacist specialist services for the Palliative Care Services and Clinics, Inpatient Adult Acute Pain Service, Opioid Stewardship, Addiction Consult Team, and Pain Pharmacy Service. The team is made up of four clinical pharmacy specialists. Their main responsibilities include providing clinical expertise to their respective consult services and clinics, addressing institutional change in the area of practice through active participation in over 10 institutional and College of Pharmacy committees, precepting students and residents, multidisciplinary education, and participation in institution-wide initiatives in these specialty areas of practice.

### Highlights:

- Implemented a Pain Pharmacy Service providing specialty consultation for inpatients with complex and chronic pain
- Led an institutional naloxone campaign including the installment of a no-cost naloxone vending machine, hospital-wide employee CE, and new medical school curriculum content
- Chaired the Pain and Opioid Stewardship Subcommittee to improve the safe and effective use of opioids and other analgesic medications
- Developed a program and planned growth to expand pain and palliative care pharmacy services
- Core member and Metrics Team Lead for Rewrite the Script Comprehensive Pain and Recovery Collaborative to address pain management and opioid use disorder within the health system
- Developed the opioid stewardship clinical dashboard for tracking, monitoring, and evaluating patients experiencing pain
- Revised and/or optimized pain and palliative-related policies and guidelines
- Mentored and/or precepted numerous students and pharmacy resident learning experiences
- Consulted for Opioid Prescribing Engagement Network (OPEN) supporting providers with pain and SUD patient care across the entire State of Michigan
- Welcomed the sixth and recruited the seventh PGY-2 for the PPC residency program



**4**  
Inpatient pain subspecialty consult services supported



**7K+**  
Inpatient and outpatient visits



**470+**  
Consults addressing opioid or other substance use disorders



**350+**  
Pain Pharmacy Service consults in the first seven months

## Research and Allergy Services

### Research Pharmacy & Allergy Services

The Research Pharmacy (RP) works to ensure that investigational drug studies and other drug-related research at Michigan Medicine are conducted according to study protocol, safely and efficiently. The RP is responsible for all pharmacy activities related to each research protocol that it oversees, including — but not limited to — procurement, storage, handling, labeling, dispensing, and disposal of investigational medications.

The Michigan Medicine Allergy Pharmacy supports the Division of Allergy & Clinical Immunology in delivering quality patient care across all UM-Health allergy clinics. Allergy Pharmacy operational activities involve preparing medications for: clinic-administered allergenic extracts, drug allergy testing, drug desensitization protocols, and drug challenges. Clinical pharmacists support the treatment of allergic and immunologic conditions, with focus on treatment planning, collaborative research initiatives, policy and guideline creation, and medication stewardship across the patient care continuum.

#### Highlights:

- Activated 233 new clinical trials throughout the year
- Underwent two FDA audits, 24 sponsor audits, 26 internal U-M audits
- Implemented daily management system (DMS) huddle
- Developed dashboards related to daily operations and trends
- Optimized guidelines for patient treatments with allergenic extracts
- Standardized protocols for antibiotic drug allergy testing



Research Pharmacy Team



Research Pharmacy technician compounding an investigational infusion drug



Allergy Pharmacy technician compounding allergenic extracts

Allergenic extract mixes



**3.3K+**  
Allergenic  
prescription  
sets  
compounded



**8K+**  
Prescriptions of  
investigational  
product



**1.1K+**  
New study  
participants



**700+**  
Open studies  
maintained per  
month



**1K+**  
Monitoring  
visits



## Infectious Diseases




Adult & Ambulatory ID Team: Sam Aitken, Nick Dillman, Jerod Nagel, Samantha Sallerson, Jeff Harrington, and Greg Eschenauer



Daniel Riggsbee and Karen Davidge



**73.5**  
Patient days  
avoided



**\$1.5M**  
Decreased  
inpatient  
antimicrobial  
expenditure

### Infectious Diseases (ID) Team

The team provides clinical coverage for the pediatric and adult ID consult services, and oversees the antimicrobial stewardship program for inpatients and patients treated in ambulatory clinics. The team promotes the appropriate diagnosis and treatment of infections, with the goal to optimize patient outcomes, improve safety, provide cost-effective care, and minimize antimicrobial resistance.

#### Highlights:

##### Ambulatory

- Improved antimicrobial treatment in pediatric skin and soft tissue infections
- Improved antimicrobial treatment in targeted adult infections
  - » Reduced SSTI inappropriate duration from 23% to 15%
  - » Reduced CAP inappropriate duration from 37% to 22%
  - » Avoided 73.5 inpatient days for SSTI requiring IV therapy through utilization of dalbavancin in the ED protocol
- Upgraded the Antimicrobial Stewardship website
  - » 50K+ annual users representing 101 countries
  - » 400K+ Google Search clicks



#### Awards & Recognition

- Conducted three MUEs leading to quality improvement initiatives
- Launched collaborative QI initiatives with OR pharmacy improving antibiotic prophylaxis, and medicine team improving antibiotics selection for pneumonia
- **Greg Eschenauer.** Faculty Preceptor of the Year award
- **Greg Eschenauer.** Pharmacist representative for Treating Cancer in HIV Committee, National Comprehensive Cancer Network (NCCN)
- **Sam Aitken.** President, Society of Infectious Diseases Pharmacists (SIDP)
- **Jerod Nagel.** Co-chair, Antibiotic Stewardship Center of Excellence Committee, Infectious Disease Society of America (IDSA)
- **Daniel Riggsbee.** Co-chair, Antimicrobial Stewardship Committee, Michigan Society of Health-System Pharmacists (MSHP)

##### Inpatient

- Decreased antimicrobial expenditure by \$1.5 million
- Tracked and reported antibiotic utilization and resistance to meet accreditation standards
- Launched bacteremia review initiative
- Rolled out RSV treatment and prevention strategies
- Updated or created 39 treatment guidelines, five hospital policies, and three new formulary reviews

## HomeMed Home Infusion and Specialty

### HomeMed Home Infusion and Specialty

HomeMed Pharmacy provides traditional and specialty pharmacy home infusion services to UM-H patients throughout Michigan, Ohio, Indiana, and Florida. HomeMed facilitates and supports the coordinated continuum of care as patients and their families transition from the inpatient and outpatient settings to the home environment. The HomeMed team provides comprehensive and individualized in-home pharmacy and nutrition infusion products, specialty infusions, sterile compounding, clinical care management services, care coordination and monitoring, education and training, in-home nursing visits, and over the threshold delivery.

#### Highlights:

- Aligned structural governance within Michigan Medicine Pharmacy Enterprise
- Converted to operational software for prescription processing
- Increased contracting with visiting nurse agencies for infusion nurse visits
- Redesigned inventory workflow and product onboarding practices
- Revised drug labeling to improve safety and patient understanding
- Redesigned and revised Medication Standards Manual
- Converted On Call Event follow up to paperless workflow
- Revised process improvement to Pharmacist Prescription Processing Workflow
- Updated Infusion Pump Guideline
- RACI Matrix role and delineation of duties for multidisciplinary workforce



#### Awards & Recognition

- 116 Making a Difference Awards
- **Sheila Eckert, RN** and **Laura Messer, RN** received IgCN Certification
- **Maria Hagan, RN** certified as a Registered Nurse Infusion
- **Sue Harrington, PharmD** retired after 30+ years
- **Anne Perez, RN** retired after 35 years
- **Katie Sandison, PharmD** named President-Elect of MSPEN



Part of the HomeMed Team



Amy Sweet, RN (center) receives Florence Nightingale Award supported by Julie Ishak RN, NP-BC, CENP, CNE and David Miller MD, MPH



Enteral Feeding Tubes



**145K+**  
Sterile  
products  
compounded



**47K+**  
Prescriptions  
filled



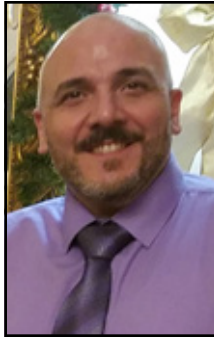
**7K+**  
Home nursing  
visits



**58K+**  
Deliveries to  
patient homes

## Education & Professional Development

### Education & Professional Development Team



Chadi Abbas, CPHIT: Pharmacy Technician EPD Coordinator



Carolyn Richards, PharmD: Pharmacist EPD Coordinator - Adult Practice



Michael Kraft, PharmD, BCNSP, FASPEN: Assistant Director of Pharmacy-Education & Professional Development; Clinical Professor of Pharmacy



Kaitlin Baisden, PharmD: Pharmacist EPD Coordinator - Pediatric Practice

The Education and Professional Development (EPD) team oversees and manages new employee recruiting, onboarding, and training. We support the education mission through our Pharmacy Residency Programs, Pharmacy Technician Training, Pharmacy Student Experiential Education, and our Pharmacy Internship Program. In addition, the Professional Development Committee provides opportunities to expand knowledge and further develop both personal and professional skills.

Effective onboarding and training is essential for welcoming employees and setting them up for success. In addition, ongoing education and professional development are vital to both employees' job satisfaction and their professional growth. The EPD team continues to refine and improve the recruiting, pre-employment, and onboarding experience. We also manage competency assessments and the learning management system for our department.

#### Highlights:

- Improved employee recruiting, pre-employment, and onboarding
- Created/revised five competency and learning modules, including new USP 800 Pharmacy Education, Dosi-Fuser elastomeric pump education, and nonsterile compounding eLearning and live training
- Organized professional development sessions
  - » Professional Development Committee Co-Chairs: **Kaitlin Baisden** and **Carolyn Richards**
  - » Five Pharmacy Grand Rounds events
  - » Two Preceptor Development events
  - » Three Personal/Professional Development events
- Team members served on ~10 local, state, and national committees



**29**  
Pharmacists



**84**  
Pharmacy technicians



**56**  
Support team members and pharmacy residents



#### Awards & Recognition

9 Making a Difference Awards



## Pharmacy Internship Program

The University of Michigan Health (UM-H) Pharmacy Internship Program strives to be the best Pharmacy Internship program in the country. The program has existed in many forms since the 1970s. The program has trained many prominent figures within the UM-H Department of Pharmacy Services and across the nation at numerous prestigious institutions. The program as we know it today was most recently reformed in 2006 through the hiring of three Pharmacy Interns. Initially encompassing pharmacy technician activities in the adult inpatient setting, the Pharmacy Internship Program slowly expanded into a two-year program (end of P-1 year through the end of P-3 year) and began to include other areas of pharmacy practice through partial support from the University of Michigan College of Pharmacy. Pharmacy Interns work throughout UM-H, including inpatient adult and pediatric care, central pharmacy operations, medication use systems, ambulatory care, infusion pharmacy, research pharmacy (investigational drug services), transitions of care, medication safety, pharmacy administration and leadership, and specialty pharmacy.



Amalia Grigorian, Junior Chief Pharmacy Intern

### Highlights:

- Increased Pharmacy Intern positions to 30
- Two Chief Pharmacy Interns elected
  - » Senior Chief Pharmacy Intern: **Lydia Joyner** (Research Pharmacy)
  - » Junior Chief Pharmacy Intern: **Amalia Grigorian** (Specialty Pharmacy-Hematology/Oncology)
- Pharmacy Interns in inpatient areas assisted pharmacists in conducting patient anticoagulation education and medication reconciliation
- Attended professional development meetings to foster career success
- Shared pharmacy internship program information highlighting pharmacy intern achievements in *Pharmacy INTERN-al Updates*
- Participated in on-the-job shadowing opportunities, as well as a Mentorship Program
- Involved in outreach and advocacy events, including leading hospital tours for prospective College of Pharmacy students
- Developed and launched Pharmacy Internship Subcommittees to provide interns with additional leadership and professional development



### Awards & Recognition

Thank you **Lydia Joyner** for your service as the Senior Chief Pharmacy Intern



## Education & Professional Development



The 2023 – 2024 Pharmacy Residency Class



Mike Kraft, Megan Cadiz, Sabrina Dunham, Allison Schepers, Kisha Prince and Pharmacy Residents at the 2023 ASHP Midyear Pharmacy Residency Showcase



### Awards & Recognition

- **Nour Kadouh** (PGY-2 Pediatric Pharmacy): received the SMSHP Resident CE of the Year Award for “Breaking the Cycle of Trauma: Enhancing Pharmacy Learner Psychological Safety”
- **Meagan Dean** (PGY-2 Psychiatric Pharmacy): presented “Impact of Psychopharmacology Stewardship” at a Southeastern Michigan Society of Health-System Pharmacists (SMSHP) meeting
- Chief Pharmacy Residents: **Ashton Strother** (PGY-1 Pharmacy) and **Kenton Cooksey** (PGY-2 Oncology)



Kisha Prince: Pharmacy Residency Program Administrator



### 7 Pharmacy Resident-related publications

## Pharmacy Residency Programs

Our Pharmacy Residency Programs provide Pharmacy Residents excellent training and educational experiences to develop practice, teaching and research skills, and nurture professionalism and leadership. Postgraduate pharmacy training is part of our department’s rich history of collaboration with the U-M College of Pharmacy. The department established the first pharmacy residency program in 1927 (previously called a postgraduate internship) under the leadership of Harvey A.K. Whitney, one of the founding members and first president of the American Society of Health-System Pharmacists (ASHP). Our residency program was also among the first accredited programs in the nation. We have 31 residents across 15 pharmacy residency programs. We also have a leadership fellowship and a new infectious diseases fellowship, each with 1-2 Fellows annually. All UM-Health pharmacy residency programs are accredited by ASHP. With the leadership of Megan Cadiz, the support of Kisha Prince, and the significant efforts and contributions of our wonderful residency program directors, residency program coordinators, and residency preceptors, the program continues to thrive.

### Highlights:

- Residents provided 25+ hours of live CE
- Implemented a preceptor appointment and re-appointment process; 100+ Pharmacy Residency program preceptors appointed or re-appointed
- Residents presented research projects at the Great Lakes Pharmacy Resident Conference and other PGY-2 Specialty conferences
- Residents **Megan Cadiz** and **Allison Schepers** visited Cleveland Clinic and UH Hospital Medical Center for a residency exchange in May
- Hosted U-M Pharmacy Residency alum and ASHP CEO, **Paul Abramowitz**, PharmD, ScD (Hon), FASHP in April; Dr. Abramowitz discussed the current pharmacy landscape, ASHP future goals, and his vision for the progression of the profession
- Hosted Pharmacy residents and preceptors from the University of Wisconsin Pharmacy Residency
- Formed a PGY-2 Residency Advisory Committee, led by **Sabrina Dunham** (PGY-2 Cardiology Residency Program Director)
- All Residency programs successfully matched positions for 2024-2025
- Created a two-year Infectious Diseases Fellowship program, led by co-directors, **Jerod Nagel** and **Jason Pogue**; **Jeff Harrington** (PGY-1 Pharmacy Resident) is the inaugural fellow

## Student Experiential Education

Experiential education is an essential part of the Doctor of Pharmacy curriculum, and an important part of our department's support of the education mission. Our preceptors are dedicated professionals and educators who provide exceptional learning opportunities for pharmacy students. These learning experiences are offered by both adjunct faculty and clinical faculty. We offer a substantial number of both Advanced Pharmacy Practice Experiences (APPEs) for P-4 students, as well as Introductory Pharmacy Practice Experiences (IPPEs) for P-3 and P-2 students at the U-M College of Pharmacy. Our APPE and IPPE rotations include learning opportunities in the following categories/practice settings:

**APPE:** Health System Pharmacy practice, Inpatient General Medicine/General Surgery (Generalist) practice, Inpatient Specialty practice areas, Ambulatory Care practice, Community Pharmacy practice, Management/Leadership practice, and several more highly specialized practice areas (e.g., research pharmacy/investigational drug service, pharmacy informatics, home infusion, etc.)

**IPPE:** Health System Pharmacy Practice (P-3 students), Direct Patient Care (P-3 students), Community Pharmacy Practice (P-2 students), and Ambulatory Care Practice (P-2 students)

### Highlights:

Provided experiential rotations for pharmacy students across the health system, including inpatient and ambulatory care practice sites:

#### APPE Rotations

- Across 43 sites
- 133 preceptors
- 105 adjunct faculty
- 28 clinical faculty

#### P-3 IPPE Rotations

- Across the health system
- 30 preceptors
- 27 adjunct faculty
- Three clinical faculty

#### P-2 IPPE Rotations

- Across 17 different sites
- 28 preceptors
- 24 adjunct faculty
- Four clinical faculty



### Awards & Recognition

- This contribution of APPE rotations represents approximately half of all APPE rotation spots for P-4 students at the U-M College of Pharmacy
- Pharmacist preceptors contribute substantially to student education and impact their future careers through IPPE and APPE rotations, classroom instruction, and formal and informal mentorships



**337**  
APPE  
rotations



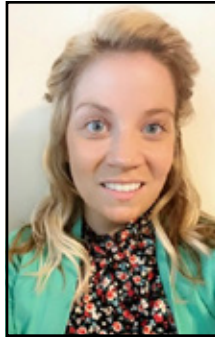
**83**  
P-3 IPPE  
rotations



**83**  
P-2 IPPE  
rotations



## Education & Professional Development



Kristina Mulzer, CPhT:  
Pharmacy Technician Training  
Program Supervisor

### Technician Training and Education

The Pharmacy Technician Training Program was established in February 2022 to better support Pharmacy Technician recruitment and retention and to better support individuals prepare for a career with our team. This year we implemented a revised curriculum and program — the program duration was reduced from four months to two months, and we are now approved by the Michigan Board of Pharmacy as an Employer-Based Training and Examination program. This means that individuals who successfully complete our training and pass our examination are eligible for full licensure as a Pharmacy Technician in Michigan. We continue to evaluate and refine the program to ensure our team members are successful. We have also continued to provide ongoing support and education for Pharmacy Technician team members and prospective Pharmacy Technicians from external partner organizations.



### Awards & Recognition

Approved as an Employer-Based Pharmacy Technician Training and Examination program by the Board of Pharmacy



**41**  
Completed the  
program  
**34**  
Still work in  
the department



**49**  
Hired into  
the Pharmacy  
Technician  
Training  
Program  
**35**  
External  
candidates  
**14**  
Internal  
candidates

### Highlights:

- Hired 23 trainees into the Pharmacy Technician Training Program
- ~80% of the trainees completed the program; 100% of trainees who took the exam have passed
- Developed several study resources for the training program
- Reviewed and updated our employee CORE Pharmacy Technician Training
- Created a “Train the Trainer” process for pharmacy technician tainers to lead our new employee CORE Pharmacy Technician Training
- Completed “Train the Trainer” with four pharmacy technician trainers
- Continued ASHP department membership for Pharmacy technician team members
- Implemented a resource for pharmacy technician and pharmacist team members — Pharmacy Technician’s Letter/Pharmacist’s Letter and associated resources

## Diversity, Equity, and Inclusion (DEI)

### DEI Committee

Pharmacy DEI Committee team members provide support to all staff members in pharmacy to foster an inclusive community of belonging and trust for all. In addition to supporting pharmacy, we collaborate across campus with Voices of the Staff and the Office of Health Equity and Inclusion. The core services offered by the DEI committee include updates to policies, and support for historically underrepresented individuals.

#### Highlights:

- **Batoul Jaber** recognized in national article “Develop Inclusive Garbing Policies for Compounding” in *Pharmacy Purchasing & Products* magazine
- Expanded pronoun badge buddies across the pharmacy department and medical campus
- Lactation policy update (coming FY25)
- Lost 10% of membership due to world conflict protests
- Communicated concerns of members to senior leaders and Voices of the Staff



#### Awards & Recognition

National recognition of **Batoul Jaber** in “Develop Inclusive Garbing Policies for Compounding” for *Pharmacy Purchasing & Products Magazine*



**29**  
DEI committee members



# Administration



(front row) Yvette Washington, Lisa Brothers, Cari Marshall, and Stephanie Wagle. (back row) Donna Bellows, Heidi Wenger, Judy Boldt, and Dana Barnhart



## Awards & Recognition

Pharmacy leadership recognized the administration team for coordinating and managing the VIP event held at the Joy Road Service Center on February 23, 2024

## Pharmacy Administration

The Administration team runs the day-to-day operations for the Pharmacy Department including human resources for over 1,000 employees, payroll, office support, executive support, office supply ordering, setting up new employee access, maintaining personnel files, and so much more. The Administration team now has the staffing resources to revamp some historic processes and create new solutions for a growing department.

### Highlights:

- Integrated HomeMed into Pharmacy Department operations
- Increased administration team to seven employees to support entire Pharmacy department. One employee still has administrative responsibilities at HomeMed
- Realigned some responsibilities to better accommodate department needs
- Increased payroll training for employees as well as new managers and supervisors
- Facilitated reimbursement expenses for employees

## Finance

The Financial Director, Julie Hardesty, oversees both the Finance and Administrative teams.

The Pharmacy Finance team has financial oversight over the entire Pharmacy Department. The Finance team has five employees to support a variety of responsibilities and workloads, including creating budgets, monitoring financial performance, creating forecasting models, assist with inventory counts at various pharmacy locations, creating purchase orders to ensure drugs can be purchased, monitoring high-cost medications, supervising our partnerships with Contract Pharmacies, supporting annual audit, and much more.

### Highlights:

- Vouchered expense totals: \$1B gross pharmacy supply expense
- Integrated HomeMed financial operations with the Pharmacy department
- Streamlined historically cumbersome journal entries
- Provided financial support and guidance for future growth opportunities



KC Sims, Steven Warner, Julie Hardesty, Stacey Blackburn, Dylan Adams, and Jarek Schmanski

**5**  
Finance staff

**\$1B**  
Gross supply expenses



## 340B Team

The 340B program enables healthcare organizations to stretch scarce federal resources as far as possible, reaching more eligible patients and providing more comprehensive services. The function of the Pharmacy 340B team is to ensure that Michigan Medicine's 340B program maintains regulatory compliance and integrity, while optimizing medication discount capture and margin enhancement through Contract Pharmacies.

In FY25, the team will be closely monitoring judicial decisions and legislative changes to the 340B program's operation and oversight which may require internal process changes. We look forward to continuing our integration with UMH-West and UMH-Sparrow to improve compliance and capture across all of our hospitals. We will focus heavily on ensuring maximal capture of 340B opportunity in our own Specialty Pharmacies.



Sarah Ismail, Jeremy Dornbos, Janice Lee, Erin Raper, and Peggy Martin

### Highlights:

- Integrated with UMH-West and UMH-Sparrow to form a central 340B team that oversees six 340B hospitals
- Updated claim qualification logic to optimize compliance and capture of 340B claims
- Updated datasets used for 340B qualification to ensure maximal accuracy
- Navigated numerous inquiries and audits from multiple stakeholders
- Managed complex workflows to optimize contract pharmacy capture
- Developed and implemented targeted auditing strategies across all six covered entities

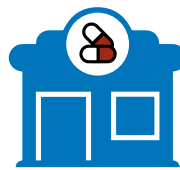


### Awards & Recognition

Four team members became Apexus Certified 340B Experts:

- **Janine Lee**
- **Jeremy Dornbos**
- **Erin Raper**
- **Peggy Martin**

**Sarah Ismail** recertified as an Apexus Certified 340B Expert



**519**  
Contract  
pharmacy  
locations



**2.6M+**  
Outpatient  
administrations  
evaluated



**287K+**  
Retail  
pharmacy  
prescriptions  
evaluated



**11K+**  
Manually  
qualified  
prescriptions

## Administration



Karl Renius, Pharmacy Analytics Manager. Chris Mannina, Clinical Pharmacist Specialist, Analytics. Andrea Hernandez-Morales, Clinical Information Analyst. Andrew Bradley, Sr. Clinical Information Analyst. Not Pictured: Rich Tata, Sr. Data Architect



5

Team members



816

Tickets completed

### Pharmacy Analytics: Empowering Data-Driven Decisions

The Pharmacy Analytics team leverages data, tools, and methodologies to drive operational efficiency, enhance patient care, and optimize business strategies. Our core competencies encompass data pipelines, warehousing, retrieval, and in-depth analysis across domains such as workload, drug utilization, clinical outcomes, diversion detection, and business intelligence. By collaborating closely with stakeholders across the organization, we translate complex data into actionable insights that inform decision-making and support strategic initiatives

#### Highlights:

- **GenAI:** Evaluated generative AI for streamlined workflow, automation, and infrastructure solutions
- **Financial Support:** Built robust models for forecasting, budgeting, and cost-saving
- **Containerization:** Improved application scalability, reliability, and portability
- **CI/CD & DevOps:** Accelerated software development and deployment through automation
- **340B Consolidation:** Integrated reporting for compliance and program optimization
- **Finance Data Automation:** Automated key processes, improving efficiency and accuracy
- **Specialty Pharmacy:** Developed comprehensive data models to track key metrics
- **Staffing & Workload:** Built models for optimized staffing and workload management
- **Data Infrastructure:** Enhanced infrastructure, tools, and workflows for improved performance

## Contracting, Billing, and Systems Team

### PHARMACY CONTRACTING

The Pharmacy Contracting team is responsible for maintaining existing Pharmacy Benefit Manager (PBM) relationships and establishing new payer targets to increase medication access for Michigan Medicine outpatient pharmacy patients. The team is also responsible for drug contracting negotiations that save more than \$1.75M annually. In addition to collaborating with our colleagues in the pharmacy department, we work closely with purchasing, legal, procurement, finance, HITS, and others to achieve our goals.

### PHARMACY SYSTEMS

The Pharmacy Systems analyst is responsible for the standardization of the Payer, Patient, Physician, Price, and Drug files within the Outpatient Pharmacy processing system, QS/1. In collaboration with HITS: user profiles are maintained to ensure appropriate access for users. As Michigan Medicine transitions to the Willow Ambulatory Module for outpatient dispensing, the Pharmacy Systems analyst will be crucial to support accurate data gathering for medication record keeping and prescription dispensing.

### PHARMACY BILLING

The Pharmacy Billing team maintains compliance with all insurance and state/federal prescription billing requirements. The team ensures charges are accurate in EPIC in several ways: by entering charges sent from outpatient pharmacies that need to be billed to the medical insurance, by reviewing certain charges for accuracy, and by reviewing claims that do not have the proper charge attached. We respond to Pharmacy Benefit Manager and Medicare Part B audits, monitor 12 work queues in EPIC, and support community and specialty pharmacy teams with billing/correcting claims. We coordinate our efforts with other pharmacy departments, compliance, revenue cycle, and clinical areas throughout UM-H to maximize revenue capture.

#### Highlights:

- Ensured network agreements in place at the Joy Road pharmacy
- Streamlined agreements with integrated partners: UMH-Sparrow and UMH-West
- Completed annual recredentialing for all payers for each outpatient pharmacy
- Completed Phase 1 contracting for WAM implementation
- Launched Voucher on Demand (VOD) program
- Provided biosimilar and weight loss reporting to assist finance in budget forecasting
- Standardized OTC pricing
- Standardized inventory reporting in QS/1
- Captured \$800K in additional revenue from MiChart work queues
- Reviewed \$5M of claims daily from MiChart work queues
- Improved workflows for Part B billing in collaboration with Specialty Pharmacy team



Abby Feysa, Amanda Haynes, Andrea Rittenhouse, Cindy Gillespie, Clayton Every, Dianne Peters, and Kendall Lambert





# Administration



Jordan Burkey, Nicholas Crosby, JoEllen Taylor, Austin Pytlowany, Brian Brower, Angella Mullins, Noah Leja, Amber Barbee, Kimberly Parker, Samuel Seidel, Amanda Hurst, Karen Brown, Kyle Brunell, Brian Armbrustmacher, Brooke Jager, Jeffrey Heldt, and Nicole Gibson

## Supply Chain

The Pharmacy Supply Chain (PSC) Team is responsible for overseeing the University of Michigan Health’s drug supply chain. PSC was one of the initially selected teams for integration within the Pharmacy Department. This integration welcomed both UMH-Sparrow and UMH-West employees into their ranks to bolster PSC services as a statewide enterprise.

The PSC Team is constructed of three pillars:

- Purchasing
- Shortages
- Inventory

### PURCHASING

The team orders ~600 unique items per day from numerous distributors and continuously assesses cost savings opportunities to optimize expenditures.

### SHORTAGES

The team navigates the ongoing national supply chain crisis, coordinating shortage mitigation efforts across hospital stakeholders, and maintaining necessary drug therapy access for UM-Health’s patient population.

### INVENTORY

The team optimizes accessibility and efficiency of drug inventory for B2 and Joy Road, as well as non-drug inventory for central drug distribution.

### Highlights:

- Centralized pharmacy supply chain services and manpower across the statewide enterprise
- Launched pharmacy supply chain operations at Joy Road
- Welcomed inventory team members and responsibilities
- Completed a Consolidated Service Center proposal for Joy Road
- Launched dashboards for pharmacy supply chain data



## Awards & Recognition

20+ Making a Difference Awards



**50K+**  
Email responses



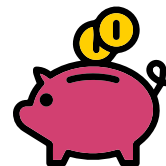
**\$700M**  
Pharmaceuticals procured



**\$3.5M**  
Product acquisition costs saved



**100+**  
Credit-rebills processed



**\$1M+**  
Spoiled drug expenditures recovered



**700+**  
Shortage items tracked

## Publications

- 2023**
- Ankravs MJ, McKenzie CA, Kenes MT. Precision-based approaches to delirium in critical illness: a narrative review. *Pharmacotherapy*, 2023 Nov. (online ahead of print).
- Benitez L, Marx K, Buhlinger K, Clark S, Reid J, Rausch C, Gatwood K, Stump S, Shah R, Ciervo J, Baron J, Marini B, Perissinotti A, Waldron M, Muluneh B. Multicenter retrospective evaluation of treatment of high-risk acute promyelocytic leukemia (APL): results from the Hematology Research Outcomes (HERO) Consortium. *Blood*, 142. 4267-4267. 10.1182/blood-2023-189637.
- Booth CM, Sengar M, Goodman A, Wilson B, Aggarwal A, Berry S, Collingridge D, Denburg A, Eisenhauer EA, Ginsburg O, Goldstein D, Gunasekera S, Hammad N, Honda K, Jackson C, Karikios D, Knopf K, Koven R, Marini BL, Maskens D, Moraes FY, Mohyuddin GR, Poudyal BS, Pramesh CS, Roitberg F, Rubagumya F, Schott S, Sirohi B, Soto-Perez-de-Celis E, Sullivan R, Tannock IF, Trapani D, Tregear M, van der Graaf W, Vanderpuye V, Gyawali B. Common sense oncology: outcomes that matter. *Lancet Oncol*, 2023 Aug;24(8):833-835. doi: 10.1016/S1473-0245(23)00319-4. Epub 2023 Jul 16.
- Coe-Eisenberg TD, Perissinotti AJ, Marini BL, Pettit KM, Bixby DL, Burke PW, Benitez L. Evaluating the efficacy and toxicity of dose adjusted pegylated L-asparaginase in combination with therapeutic drug monitoring. *Ann Hematol*, 2023 Nov;102(11):3133-3141. doi: 10.1007/s00277-023-05373-5. Epub 2023 Jul 22.
- King J, Chenoweth CE, England PC, Heiler A, Kenes MT, Raghavendran K, Wood W, Zhou S, Mack M, Wesorick D, Proudlock A. Early recognition and initial management of sepsis in adult patients guideline. *Michigan Medicine Clinical Care Guidelines*, University of Michigan. 2023 Nov.
- Kraft S. VEGF inhibitor-induced hypertension in renal cell carcinoma. *OncLive*, 10 Aug. 2023. [onclive.com/view/dr-kraft-on-vegf-inhibitor-induced-hypertension-in-rc](https://onclive.com/view/dr-kraft-on-vegf-inhibitor-induced-hypertension-in-rc).
- Marini BL, Goodman AM, Perissinotti AJ. The essential role of randomised controlled trials. *Lancet Haematol*, 2023 Jul;10(7):e486-e487. doi: 10.1016/S2352-3026(23)00130-8.
- Nachar VR, Perissinotti AJ, Marini BL, Karimi YH, Phillips TJ. COVID-19 infection outcomes in patients receiving CD20 targeting t-cell engaging bispecific antibodies for B-cell Non-Hodgkin Lymphoma. *Annals of Hematology*, vol. 102, no. 9, 2023, pp. 2635-2637. doi: 10.1007/s00277-023-05315-1.
- Shinn LT, Benitez LL, Perissinotti AJ, Reid JH, Buhlinger KM, van Deventer H, Barth D, Wagner CB, Zacholski K, Desai R, Soule A, Stump SE, Weis TM, Bixby D, Burke P, Pettit K, Marini BL. Multicenter evaluation of the addition of eltrombopag to immunosuppressive therapy for adults with severe aplastic anemia. *Int J Hematol*, 2023 Dec;118(6):682-689. doi: 10.1007/s12185-023-03670-3. Epub 2023 Oct 26.
- Stollings JL, Poyant JO, Groth CM, Rappaport SH, Krueger RM, Miller E, Whitten JA, McIntire AM, McDaniel CM, Betthauer KD, Mohammad RA, Kenes MT, Korona RB, Barber AE, MacTavish P, Dixit D, Yeung SYA. An international, multicenter evaluation of comprehensive medication management by pharmacists in ICU recovery centers. *J Intensive Care Med*, 2023 Oct. (online ahead of print).
- Tharp J. Panelist *Centralizing Compounding Compliance Program Management-Four Perspectives*. ASHP Webinar (ACPE accredited). July 2023.
- Tharp J. Panelist USP <795> and <797> *Revision Readiness*. BD Webinar (non-accredited). August 2023.
- 2024**
- Barker AK, Valley TS, Kenes MT, Sjoding MW. Sedation practices for intubated non-COVID patients have worsened in the post-COVID era. *Chest*, 2024 Jan. (online ahead of print).
- Berinstein JA, Karl T, Patel A, Dolinger M, Barrett TA, Ahmed W, Click B, Steiner CA, Dulaney D, Levine J, Hassan SA, Perry C, Flomenhoft D, Ungaro RC, Berinstein EM, Sheehan J, Cohen-Mekelburg S, Regal RE, Stidham RW, Bishu S, Colombel JF, Higgins PDR. Effectiveness of upadacitinib for patients with acute severe ulcerative colitis: a multicenter experience. *Am J Gastroenterol*, 2024 Mar 27.
- Blackburn SC, Haas NL, Kocan MJ, Wood W, Menke NB, Seyfried LS, Chinn SB, Vandenberg A, Ciarkowski SL, Mack M, Wesorick D, Proudlock A. Alcohol withdrawal in hospitalized patients: Michigan Alcohol Withdrawal Severity (MAWS) Protocol [Internet]. *Ann Arbor (MI): Michigan Medicine University of Michigan*; 2024 May.
- Durant KM, Whitesell A, Dasse KD. A review of fetal cell lines used during drug development: focus on COVID-19 vaccines, transplant medications, and biologics. *Am J Health Syst Pharm*, 2024 Jun 24;81(13):e336-e344.
- Ernst K, Thompson AN, Vandenberg A. Relative exposure to psychiatric conditions and medications in pharmacy education. *Curr Pharm Teach Learn*, 2024 Feb;16(2):93-99. doi: 10.1016/j.cptl.2023.12.016. Epub 2023 Dec 29.
- Foucar CE, Foley DH, Aldous J, Burke PW, Pettit KR, Benitez LL, Perissinotti AJ, Marini BL, Boonstra P, Bixby DL. Real-world outcomes with immunosuppressive therapy for aplastic anemia in patients treated at the University of Michigan. *Eur J Haematol*, 2024 Mar;112(3):424-432. doi: 10.1111/ejh.14131. Epub 2023 Nov 6.
- Frame DG, Geer M, Kasha S, Markstrom D, Scappaticci G, Feeney T, Hayduk A, Mansoor HM, Oberfeld A, D'Antonio H, Anand S, Choi SW, Maciejewski J, Pawarode A, Riwes MM, Tewari M, Magenau J, Ghosh M. Comparing 2-day vs 3-day flu-CY lymphodepleting regimens for CD19 CAR T-cell therapy in patients with non-hodgkin's lymphoma. *Front Immunol*, 2024 Jun 14;15:1403145. doi: 10.3389/fimmu.2024.1403145.
- Johns K, Eschenauer G, Clark A, Butler S, Dunham S. Antimicrobial pharmacokinetic considerations in extracorporeal membrane oxygenation. *J Clin Med*, 2024 Jun 18;13(12):3554.
- Khoudracha CJ, Benitez LL, Marini BL, Fraga M, Pettit K, Burke P, Perissinotti AJ. Tumor lysis syndrome in patients with acute myeloid leukemia treated with venetoclax and hypomethylating agents with or without dose ramp-up. *Leuk Lymphoma*, 2024 Feb;65(2):228-234.
- Khoudracha CJ, Benitez L, Marini B, Fraga M, Pettit K, Burke P, Bixby D, Perissinotti A. Tumor lysis syndrome in patients with acute myeloid leukemia treated with venetoclax and hypomethylating agents. *Leukemia & Lymphoma*, vol. 65, no. 2, 2024, pp. 234-245.
- Khoudracha CJ, Ochs M, Pianko M, Mahmoudjafari Z, Snyder J, Ahmed I, Campagnaro E, Nachar VR. Administration of teclistamab in four patients with multiple myeloma requiring hemodialysis. *J Oncol Pharm Pract*, 2024 Apr 5:10781552241242022.
- Koschmann C, Al-Holou WN, Alonso MM, Anastas J, Bandopadhyay P, Barron T, Becher O, Cartaxo R, Castro MG, Chung C, Clausen M, Dang D, Doherty R, Duchatel R, Dun M, Filbin M, Franson A, Galban S, Garcia Moure M, Garton H, Gowda P, Marques JG, Hawkins C, Heath A, Hulleman E, Ji S, Jones C, Kilburn L, Kline C, Koldobskiy MA, Lim D, Lowenstein PR, Lu QR, Lum J, Mack S, Magge S, Marini B, Martin D, Marupudi N, Messinger D, Mody R, Morgan M, Mota M, Muraszko K, Mueller S, Natarajan SK, Nazarian J, Niculcea M, Nuechterlein N, Okada H, Opari V, Pai MP, Pal S, Peterson E, Phoenix T, Prensner JR, Pun M, Raju GP, Reitman ZJ, Resnick A, Rogawski D, Saratsis A, Sbergio SG, Souweidane M, Stafford JM, Tzaridis T, Venkataraman S, Vittorio O, Wadden J, Wahl D, Wechsler-Reya RJ, Yadav VN, Zhang X, Zhang Q, Venneti S. A road map for the treatment of pediatric diffuse midline glioma. *Cancer Cell*, 2024 Jan 8;42(1):1-5. doi: 10.1016/j.ccell.2023.11.002. Epub 2023 Nov 30.
- Mackinnon T, Schaeffler K, Penzien C, Sauro A. Implementing USP <800> guidelines in pediatric hospitals. *Pharmacy Times*, January 2024; Volume 13, Issue 1. Accessed at [pharmacytimes.com/view/implementing-usp-800-guidelines-in-pediatric-hospitals](https://pharmacytimes.com/view/implementing-usp-800-guidelines-in-pediatric-hospitals).
- Most A, Nordbeck S, Farina N. Iatrogenic hyperchloremia: an overview in hospitalized patients for pharmacists. *Am J Health Syst Pharm*, 2024 Mar 26.
- Pallotta R, Carlson C, vanWert E. Measuring pharmacy clinical workload in the emergency department: current status and a plan for action. *JAPhA Practice Innovations*, in press. Published online: July 5, 2024.
- Penzien C. Sterile compounding standardized garbing SOPs. *Pharmacy Purchasing & Products*, June 2024. Pages 6-10. Accessed at [pppmag.com/article/3271](https://pppmag.com/article/3271).
- Scappaticci G, Frame DG. Hematopoietic stem-cell transplantation. In: Chisholm-Burns MA, Schwinghammer TL, Malone PM, Kolesar JM, Bookstaver P, Lee KC, eds. *Pharmacotherapy Principles & Practice*, 6e. McGraw Hill; 2024.
- Tharp J. Develop inclusive garbing policies for compounding. *Pharmacy Purchasing & Products*, February 2024. Pages 16-18. Accessed at [pppmag.com/article/3219](https://pppmag.com/article/3219).

## Leadership



Dana Habers, MPH  
Chief Innovation Officer  
U-M Health  
Chief Operating Officer  
Pharmacy Services

**Dana Habers**, MPH serves as University of Michigan Health System's Chief Innovation Officer and Chief Operating Officer for Pharmacy Services. She joined U-M in 2016 as Chief Department Administrator for Radiology, and in late 2020 lead efforts to bring COVID-19 vaccination and therapeutics to our entire U-M system and the surrounding community. Habers holds a BS in Economics from Grand Valley State University, and an MPH from University of North Carolina – Chapel Hill.

Her track record of contributions spans clinical care operations, physician practice plan management, business development and strategy, revenue cycle, quality improvement, finance, research, and education.

Additional achievements include graduation from the Rudi Ansbacher Women in Academic Medicine Leadership Scholars Program, and being recognized as 2012's Business Woman of the Year by the *Mississippi Business Journal* after a surprise

nomination by her peers. Habers is also an active Health Management Academy Fellow, on track to graduate in 2025.

She is passionate about the health and well-being of communities, patient care, education, diversity and inclusion. Habers demonstrates continuous commitment to leading in an environment where individuals thrive, and multidisciplinary teams are organized to collaborate and conquer the many challenges facing our field.



Stan Kent, RPh, MS, FASHP, CPEL  
Chief Pharmacy Officer  
U-M Health  
Associate Dean for Clinical Affairs  
College of Pharmacy

**Stan Kent**, RPh, MS, FASHP, CPEL is the Chief Pharmacy Officer at Michigan Medicine and Associate Dean for Clinical Affairs at the U-M College of Pharmacy. He received his BS in Pharmacy from the State University of New York at Buffalo in 1978 and an MS in Hospital Pharmacy from the University of Wisconsin in 1980. Kent also completed a 2-year

residency in hospital pharmacy administration at the University of Wisconsin Hospital.

From his time in pharmacy school to present Kent has worked as a pharmacy technician, clinical pharmacist, manager, director and chief. He has precepted and trained hundreds of pharmacy students and residents and served on

state and national pharmacy organization committees and boards.

Kent is passionate about the value that pharmacists can bring to patient care — assuring that patients optimally benefit from their medications, especially those that are expensive and complex.



David Irani, MD  
Professor, Department of Neurology  
Division of Neuroimmunology

**David Irani**, MD is a professor in the Department of Neurology in the Division of Neuroimmunology. His area of clinical practice focuses on multiple sclerosis and related disorders. He graduated from the University of Michigan Medical School in 1987 and completed his neurology residency at Johns Hopkins in 1993. Since 2019, Irani has

served as the Ambulatory Care Clinical Chief for Adult and Pediatric Infusion Services here at University of Michigan Health. He now also serves as medical director of pharmacy and chair of the Pharmacy and Therapeutics Committee.





John S. Clark, PharmD, MS, BCPS, FASHP  
Associate Chief Pharmacy Officer  
UMH - AMC  
Clinical Associate Professor  
College of Pharmacy

**John S. Clark**, PharmD, MS, BCPS, FASHP practices, teaches, and researches in the area of pharmacy practice management and leadership. He is the Associate Chief Pharmacy Officer at Michigan Medicine and Clinical Associate Professor, University of Michigan College of Pharmacy. Additionally, Clark is the PGY-1/2 Health-System Pharmacy Administration

and Leadership Residency Director. At Michigan Medicine, he is responsible for acute care clinical and distribution pharmacy practice. Clark graduated from the University of Toledo and completed a PGY1/2 Health System Pharmacy Administration Residency from the University of Wisconsin with a Master of Science Degree.



Lindsey R. Kelley, PharmD, MS, FASHP  
Associate Chief Pharmacy Officer  
U-M Health

**Lindsey R. Kelley**, PharmD, MS, FASHP is the Associate Chief Pharmacy Officer at University of Michigan Health. She spearheads pharmacy services across conventional outpatient settings, including community and infusion, as well as research around care delivery in areas like oncology and specialty pharmacy. Kelley serves as adjunct faculty at the U-M College of Pharmacy where she teaches Pharmacy Law. Her areas of research interest and professional achievement include practice innovation, workforce development, advocacy, and diversity, equity, and inclusion.

Kelley was a member of the National Comprehensive Cancer Network (NCCN) Directors Forum, advancing practice research on pharmacist practice and workload. She is an advisory board member for Merative Micromedex, and she currently serves as the Immediate Past Chair for the American Society of Health-System Pharmacists (ASHP) Section of Pharmacy Practice Leaders (SPPL). Kelley was honored with the ASHP New Practitioners Forum Distinguished Service Award in 2010 and recognized as a fellow in 2019.

Kelley received her BS in Chemistry from Northern Arizona

University and completed her PharmD from University of Arizona, Tucson. She completed a Pharmacy Practice Residency at Abbott Northwestern Hospital, part of Allina Health in Minneapolis, Minnesota, and completed a Health System Pharmacy Administration and Leadership Residency with concurrent Master of Social Administrative and Clinical Pharmacy degree at University of Minnesota Health, Fairview and University of Minnesota, respectively. Kelley has initiated residency programs at each institution with which she has been associated.



Todd Belding, PharmD  
Associate Chief Pharmacy  
Officer of Regional Pharmacy  
Services  
U-M Health

**Todd Belding**, PharmD is the Associate Chief Pharmacy Officer of Regional Pharmacy Services at University of Michigan Health. He oversees pharmacy services at UMH-Sparrow and UMH-West. Belding received his BS in Pharmacy from Ferris State University and a PharmD from the University of Florida.



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