



Pharmacy Annual Report 2024



**NATIONWIDE
CHILDREN'S®**

When your child needs a hospital, everything matters.

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A MESSAGE FROM OUR CHIEF PHARMACY OFFICER


Pharmacy team members continue to serve our patients near and far, lead countless projects across the organization, and excel in many professional endeavors. Pharmacy team members serve our mission as they exhibit One Team Values in leading the Journey to Best Outcomes. We celebrate career highlights and milestones, achievements and advancements in patient care, and service that leads and role models care in pediatrics and the pharmacy profession. I hope the stories and images illuminate the amazing projects, patient care and passion our team leads with every day.

A strong, dynamic team is the foundation of what we do. In 2024, we hired nearly 70 team members. Recruiting and retaining top talent is the most important strategic and cultural goal for our department. Without our amazing team members, we would not be able to serve our patients with the purpose and passion necessary to achieve our mission and vision. We can look back at the amazing careers of 2024 retirees Terry Laurila (19 years), Julie Miller (30 years), Roger Zeiter (31 years) and Diane Durrell (44 years) to understand the impact of our talented team members with service that has impacted countless patients.


Pharmacy has continued to lead the organization's growth with more than 3.4 million inpatient doses and more than 350,000 outpatient prescriptions. We have observed more than 70% growth in outpatient prescriptions in the last three years due to organizational and patient growth, as well as changing access to community pharmacies. Blue Pharmacy completed a \$1 million renovation to support this growth, including adding 60% additional operational space to better position inventory, maximize space and better serve patients. Our Specialty Pharmacy has continued to set the standard in pediatric specialty care, including growth into new service lines including Allergy and Dermatology. It has supported a tremendous growth of 15% prescription volumes and managed nearly 1,500 patients through our patient management program (PMP). Our Homecare team continued future planning including expanded service into new therapies and new counties.

We completed a three-year project to modernize our processes at off-site NICUs. It was a seamless, effective, and efficient project which improved safety for more than 100 off-site NICU patients each day. Our clinical team will be united in 2025 under a single manager, long-term clinical pharmacist and clinical coordinator Sonya Sebastian, as our new ambulatory clinical manager. Our inpatient clinical team implemented several standard notes, new scoring tools to improve the quality and efficiency of patient review, and numerous clinical optimizations through projects such as novel clinical pathways.


Investigational Drug Services (IDS) team continues to bring pioneering research and top-quality service across our ever-expanding research endeavors. With more and more cell and gene therapies,





the IDS team is playing an even greater role in bridging the bench to bedside opportunities. The Medication Safety team worked tirelessly over five months to transition to new B.Braun and CADD pumps. The team also received the hospital's Terry Davis Quality Award, as well as being recognized in the SPS SHINE Report for ongoing innovative and influential medication safety projects and initiatives. Our Supply Chain/Finance and Information Systems teams continued to add new team members, refine and advance services and processes, and support nearly every clinical and operational activity. The Supply Chain team led our organization through numerous shortage efforts, including the fluid shortages created by Hurricane Helene's impact on North Carolina (and Baxter specifically). In addition, the team built our west campus supply chain operations, including the Livingston Orthopedic and Surgery Center (LOSC), and planned for our upcoming Epic Willow Inventory (WINV) go-live. The Pharmacy Finance team has continued to gain greater insight into our net reimbursement and partner more closely with the hospital's Finance team. Our 340B team continued to have impressive results with no findings during our annual audit. Lastly, our IS team continues to bring innovative technology solutions to all our operational processes and workflows and our clinical services. The team continues to be extremely productive and highly engaged in our Pharmacy and organizational projects. Finally, Nationwide Children's Pharmacy proudly hosted the renewed Midwest Pediatric Conference with more than 100 attendees from throughout the Midwest for a day of collaboration and connection.



In 2025, we have many large projects in the works including focuses on team culture, implementation of a new BoxPicker and repackager, go-lives for Epic Inpatient Willow perpetual inventory, completing our Joint Commission visit, strengthening our controlled substance and other compliance programs, developing improved prior authorization and revenue cycle integrity, and growing outpatient, specialty and Homecare services to improve patient impact and medication access. With these structures, we will rely on our amazing team and their dynamic, unique and class-leading strengths and talents. I am extremely thankful for all our successes and achievements in 2024 and hoping for an outstanding 2025!



Matt Sapko, PharmD, MS
Chief Pharmacy Officer



MEDICATION SAFETY

Nationwide Children's Hospital continues to innovate and focus efforts on learning to enhance medication safety outcomes. In the past year, we have implemented new technologies to improve administration of intravenous medications (smart infusion pumps) and trialed new proactive safety tools that bolstered new learnings and operational changes, while continuing to learn from frontline staff through the medication huddle process and proactive rounding.

Our staff continue to be a key factor in the success of adverse drug event reduction at Nationwide Children's Hospital. Other key interventions that have contributed to the success in adverse drug event reduction include:

Systems approach to medication safety – our multidisciplinary team conducts huddles with frontline staff to discuss medication events to gain an understanding as to “what made sense to the individual at the time of the event?” Additionally, we work with the frontline staff involved in the event to identify system-based solutions to prevent recurrences.

Incorporation of proactive safety tools into our strategic plan – our team has committed to doing work that allows us to enhance learning, identify error ‘traps’ and mitigate risks prior to incidents. The application of proactive safety tools over the past several years along with our ongoing work, including medication huddles, has helped us “break the plateau” on our safety journey towards harm reduction for our patients.

Continued collaboration between medication safety team and informatics – this partnership is necessary for system-wide improvements in the Electronic Medical Record (EMR). Whether it be to embed clinical decision support for providers while ordering medication or design of proactive safety plans, the EMR is the most used tool by nearly all health care staff. Finding ways to have the right resources at the right time is incredibly important to optimize safety.

2024 HIGHLIGHTS

Nationwide Children's was honored by the Solutions for Patient Safety (SPS) as a top-performing hospital related to our achievements and outcomes from June 2023 to May 2024 for Adverse Drug Events (ADEs).

Ambulatory Medication Safety Focus

In 2024, our ambulatory pharmacy program achieved significant advancements in medication safety through a multifaceted approach focused on risk assessment and proactive strategies.

- We developed and implemented a comprehensive risk and control matrix designed to systematically identify and prioritize safety risks across our pharmacy areas. This foundational tool supported our commitment to fostering a culture of safety, enhanced by proactive measures such as learning teams, safety huddles and walk-through talk-throughs (WT3s). This promoted open communication about potential risks and facilitated immediate feedback.



- In October 2023, we successfully trialed our innovative risk assessment tool in three outpatient pharmacies, receiving enthusiastic support from operations due to its ability to effectively prioritize safety risks for resolution rather than mere monitoring. Following this success, we expanded the tool to include Specialty Pharmacy in November 2023 and Homecare Pharmacy in August 2024, further strengthening our risk assessment capabilities. Since its implementation, we have addressed 31 distinct safety issues, ranging from information system modifications to workflow enhancements, driven by thorough proactive reviews and collaborative discussions.

These initiatives underscore our commitment to improving medication safety in the ambulatory pharmacy space, ensuring a safer and more efficient pharmacy environment for our patients and healthcare teams alike.

NEW PUMPS

B.Braun Infusion Pumps and CADD pumps were implemented in October 2024. This required drug library configurations of over 1,000 pump library entries! Medication library build was led by **Shelly Morvay** and double checks were performed by 15 pharmacists across the department to ensure drug library was programmed accurately. Pharmacy IS, especially **Lian Chen**, also played a large role in this project.



NEW FACES IN 2024

Chirag Thakkar

What is your current role?

I am an Ambulatory/Outpatient staff pharmacist. In my current role, I staff in our outpatient pharmacies.

What was your career path to get where you are today?

While finishing PharmD at The Ohio State University, I interned at Giant Eagle Pharmacy. Upon graduation, I was given an opportunity to help open and manage a brand-new location. During my tenure at Giant Eagle, I was able to practice and improve my leadership skills, management and clinical skills including vaccine administrations, medication therapy and disease state management. These experiences sparked my desire to work closely with other health care providers in an outpatient setting to improve patient health outcomes. I decided to join Nationwide Children's because I believe that my professional goals and the goals of outpatient pharmacy are a perfect match.

What is your favorite part of your role?

Patient communication and education. I enjoy face-to-face interactions with our young patients and their families!

What are you looking forward to in the future?

I am new to pediatric patient care. I am looking forward to learning as much as possible about disease states that affect our youngest patients and medications used to treat those disease states. I enjoy precepting pharmacy students and I am looking forward to mentoring/precepting our interns and students that come to Nationwide Children's for their clinical rotations.

Why did you choose to work at Nationwide Children's Hospital?

In my previous role, interacting with pediatric patients was my favorite part of the day. I enjoyed thinking outside the box to come up with the appropriate dose/formulation for pediatric patients. I chose Nationwide Children's because I knew that I would be able to collaborate with an interdisciplinary team to care for pediatric patients in the best possible way. Through news and publications, I



also knew that Nationwide Children's is at the forefront of research and innovation. I wanted to be a part of the innovative team and contribute to moving research and innovation forward!

Gillian Graham

What is your current role?

My current role is one of the new evening patient care pharmacists.

What was your career path to get where you are today?

I graduated from Ohio Northern's PharmD program in 2022, then completed my PGY1 residency in 2023 at ProMedica Toledo Hospital and most recently completed my PGY2 Pediatrics residency in June at Rush University Medical Center in Chicago.

What is your favorite part of your role?

I am looking forward to having the opportunity to expand our clinical pharmacy coverage, face new challenges every day, and provide care for the whole spectrum of pediatric patients, from NICU babies to adolescents.

What are you looking forward to in the future?

I just recently got engaged this summer, so I am looking forward to wedding planning and getting married in the spring of 2026!

Why did you choose to work at Nationwide Children's Hospital?

Aside from being able to be back in Ohio, I chose to work at Nationwide Children's Hospital because of our strong reputation for providing some of the best pediatric care in the country and to be able to work alongside a fantastic group of fellow pharmacists and other health care providers.



POINTS OF PRIDE

- 380+ Pharmacy employees
- 66 new employees in 2024.

Kaci Gordon

What is your current role?

Clinical Research Program
Coordinator in Investigational
Drug Services

What was your career path to get where you are today?

I started in pharmacy in 2004 and was certified in 2005. Prior to that I did a lot of customer service (including the Walmart service desk). I worked for Nationwide Children's from 2010 to 2013 and even though I loved my Homecare Pharmacy team, I ended up leaving Nationwide Children's for a leadership/supervisor opportunity in 2013. I've spent the last 11 years in different leadership roles including education and compliance. About two years ago I joined the Ohio Society of Health System Pharmacy and ASHP because I wanted to help advocate for technicians and advance our scope of practice. Now, I'm returning to Nationwide Children's in 2024 for a whole new career pathway!

What is your favorite part of your role?

I've always felt like I've worked hard to do the best and safest things for our patients. Now, being part of Investigational Drug Services, it feels a step further than that. We are paving the way for the future – and I'm amazed I get to be a part of that.

What are you looking forward to in the future?

For the future of technicians in Ohio and the USA – how far can we go?

For the future of IDS – new space and amazing cleanrooms!

Why did you choose to work at Nationwide Children's Hospital?

Even though I've worked at other institutions that had things like zero harm initiatives, Nationwide Children's did it first. Nationwide Children's is a leader among pediatric care, research and tons of other areas. The culture, promoting engagement from employees, the building and the vibrant atmosphere - I'm proud to call this home again.

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Mohammed Tanveer

What is your current role?

My current role is an inpatient pharmacist.

What was your career path to get to where you are today?

I started working as a pharmacy technician at Meijer in Lewis Center in 2016 and then became an intern when I started pharmacy school in 2020.

What is your favorite part of your role?

My favorite part of this job is the amazing co-workers I have. It creates a fun atmosphere that I very much enjoy.

Why did you choose to work at Nationwide Children's Hospital?

I chose Nationwide Children's because I had two great Advanced Pharmacy Practice Experiences (APPE) rotations that showed me how great hospital pharmacy could be. I also wanted to stay in Columbus after graduation.

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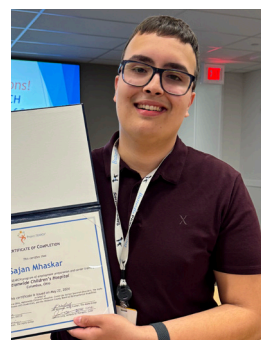
Sajan Mhaskar

What is your current role?

I am a Pharmacy Assistant.

What was your career path to get to where you are today?

That's a journey! My first job was working at a grocery store as a personal shopper. While working there, I had a chance to do some internships through Olentangy Academy for Community Transition. I then applied to Project SEARCH at Nationwide Children's and was able to do rotations in the Dialysis and Pharmacy departments. Project SEARCH is a program that helps people with disabilities to gain employment skills. During my internship in Pharmacy, I was able to apply for a position and I was so excited to have a chance to work here. I had to fill out a job application and interview for this job. When I was offered the job, I realized this journey was an eventful experience and the best thing that could have happened to me.



What is your favorite part of your role?

My favorite part about my role here is that I get to help others. I do a lot of things that help the other pharmacies with their stock. It brings me joy to know that the supplies that I bring to them would help other patients to get better and stronger.

What are you looking forward to in the future?

In the future, I am looking forward to seeing how the pharmacy will grow and to see myself learning new skills that will help the patients in the hospital.

Why did you choose to work at Nationwide Children's Hospital?

I have been a patient here. I really appreciated how all the employees work so hard to help patients. I always thought it would be nice to give back to this community and I really like to help people. Knowing that my job helps kids and families every day is really rewarding. I also wanted to find a job and place to work that would challenge me and help me grow my skills. I found the perfect place to work here at Nationwide Children's and I'm so grateful for this opportunity.

Sundus Chinary**What is your current role?**

I'm a certified pharmacy technician working in Inpatient Pharmacy.

What was your career path to get where you are today?

I started college with the intention of becoming a coroner.

When I was exploring career paths in the medical field to get a feel of other possible options if my initial career didn't work out, pharmacy came up a few times and I decided to test out the Pharmacy Technician program as a minor. Realizing how much help a person in the pharmaceutical field does for people behind the scenes, I approached the path with some encouragement from my late grandfather and have stuck with it ever since.



I worked in retail for a little over four years, then switched to mail order/online pharmacy for a year and a half, and now I'm working in a hospital setting, which I had aspired to eventually end up in!

What is your favorite part of your role?

My contentment with my role is knowing that I can be a part of a patient's journey and recovery without upfront recognition. Being behind the scenes is where I feel I thrive the most in the best way for myself. What matters most to me in the end is knowing that I have helped.

What are you looking forward to in the future?

I'd love to try my hand at different pharmacy technician positions at Nationwide Children's. I want to explore the possibilities that are available to me and see where I will thrive the most, what position I enjoy doing, and what will better help me in my career path in the pharmaceutical world. My goal is to continue growing and enhancing my knowledge and skills as a pharmacy tech at Nationwide Children's.

Why did you choose to work at Nationwide Children's Hospital?

My goal in going into health care was to help people behind the scenes and support their path to better health, and Nationwide Children's is a way for me to be a part of that system with children. I've had a lot of peers and some of my professors bring up many interesting experiences that they've personally had at Nationwide Children's, and considering there is plenty of room for growth (which is what I really appreciate and enjoy in a job setting), I wanted to dip my hands into the experience as well. I see myself thriving in the supportive community I'm surrounded with!

INTERNSHIPS

Nationwide Children's Hospital pharmacy internship program continues to excel as a premier internship program for pharmacy students in central Ohio. The inpatient and outpatient pharmacies each have four to eight interns per class with more than 40 total interns from The Ohio State University (OSU), Ohio Northern University (ONU), University of Findlay and Cedarville University. The internship program's mission is to care for patients, gain invaluable pharmaceutical knowledge and enhance the intern's overall educational and developmental experience. In October 2024, pharmacy interns and leadership collaborated to invite 50 students from The Ohio State University College of Pharmacy Class of 2028 to learn about our internship and how we provide best outcomes for pediatric patients in Columbus.



"It has been truly amazing to be able to work with and learn from the pharmacy team here at Nationwide Children's. I am surrounded by people who go above and beyond not only for our patients, but each other, and I have yet to experience a day that I leave work feeling less than fulfilled. I am looking forward to the next three years in this program and the growth that I will experience as an individual as well as a member of our team!"

–MIRANDA LUXENBURG,
CLASS OF 2027

Class of 2024 Interns Accepting Positions at Nationwide Children's Hospital

Name	Position
Omar Hajmoussa (OSU)	NCH Outpatient Pharmacy Staff Pharmacist

Class of 2024 Interns Matching with Residency Programs

Name	Position
Jera Copley (OSU)	Children's Hospital of The King's Daughters – PGY1
Chris Kolkman (OSU)	UH Cleveland Medical Center – PGY1
Mykenzie Kostka (OSU)	Ascension St. Vincent Indianapolis – PGY1
Kara Marshall (OSU)	The Ohio State University College of Pharmacy – PGY1
Taylor Niese (ONU)	Nationwide Children's Hospital – PGY1
Aashtha Shah (OSU)	Massachusetts General Hospital – PGY1
Kathryn (Sparrow) Nguyen (OSU)	Children's Medical Center Dallas – PGY1
Maddie Wycoff (OSU)	OhioHealth Grant Medical Center – PGY1

Facts and Stats

Inpatient

- Inpatient Pharmacy hired **nine** new pharmacy interns in 2024 from The Ohio State University and The University of Findlay. There are currently **26** Inpatient Pharmacy interns.
- **Shawn Scarberry** (Class of 2026) and **Jennifer Groves** (Class of 2026) were the winners of the Nationwide Children's Clinical Skills Competition.
- **10** interns participated in conducting research projects.
- Interns completed **13** mini-clinical rotations in 2024.

Outpatient

- Outpatient pharmacy hired **six** new interns in 2024 from The Ohio State University. There are currently **24** outpatient interns.
- **10** interns participated in conducting research projects.
- Interns completed **five** mini-clinical rotations in 2024.
- Interns completed **five** clinical pearl presentations this summer.
- **Brittany Johnson (Class of 2025)** created a new initiative for outpatient interns around a clinical review shadowing opportunity. Interns will work with outpatient pharmacists in the call center with the goal of enhancing their clinical review process, ability to navigate and discover key information in patient charts and build foundational problem-solving skills in preparation for APPE/IPPE rotations.

The following interns completed poster presentations at the ASHP Annual Midyear Clinical Meeting in December 2024:

- **Grant Wendel** - Assessment and Reduction of Abandoned Prescriptions at Nationwide Children's Hospital's Outpatient Pharmacies
- **Sydney Stevens and Jennifer Groves** - Optimization of a Pharmacist Code and Trauma Training Program
- **Tara Rikabi** - Implementation of a Hospital-wide Intravenous Pump Switch
- **Isabel Dingeldein and Gabby Zerbini** - Gastrointestinal Infusion Tracking of Internal and External Patients
- **Colleen Harriman** - Evaluating Incidence and Severity of Leukopenia in Relation to Cardiac Transplant Outcomes
- **Gabby Zerbini** - The Introduction of Antimicrobial Prescription Guidance and Patient Education for a Medical Brigade to Honduras

Medication Histories

Inpatient interns complete medication history shifts in the Emergency Department and at the Big Lots Behavioral Health Pavilion as part of their internship. This experience allows interns to interact with patients and their families and simultaneously provides clinical exposure. Patient care is also improved as medication lists are updated to ensure appropriate medication orders upon admission to the main hospital or BHP. Additionally, interns work with providers to assure critical home medications are given in the ED/PCD when appropriate. From January to November, interns completed more than 3,700 medication histories!



Inpatient Interns from Class of 2026 and Class of 2027 posed for a picture during their summer final presentations in August 2024.

RESIDENCIES

Nationwide Children's Hospital residency programs emphasize the holistic growth of each resident. While instilling both foundational and specialized skills essential to thrive in today's intricate and patient-centered health care system, residents also grow in leadership, research, teaching, self-awareness, and the ability to support patients' medical and mental health as well as their own. Over their time at Nationwide Children's, residents are actively involved in direct patient care, research and project management, education, precepting and much more.

Our residents make an impact on the department, hospital and the practice of pharmacy overall, including through scholarship presented each spring. The PGY1 (traditional and non-traditional) and PGY2 Pediatrics residents completed research projects that were shared at the Pediatric Pharmacy Association (PPA) Annual Meeting in Minneapolis, Minnesota. The PGY1 HSPAL resident completed a medication use evaluation and the PGY1 community-based resident completed a research project which were shared at the Great Lakes Pharmacy Residents Conference in Lafayette, Indiana.



For the 2024-2025 residency year, we added a third PGY2 pediatrics resident given that most of our PGY1s early commit and we wanted to provide additional training opportunities for external candidates.

Nationwide Children's Hospital offers multiple accredited pharmacy residency programs.

- PGY1 Pharmacy practice (traditional)
- PGY1 Pharmacy practice (non-traditional)
- PGY1 Community-Based - This unique program is in the ambulatory setting and one of the only programs of its kind
- PGY1/PGY2 Health-System Pharmacy Administration and Leadership (HSPAL), one PGY1 position and one PGY2 position - This program also completes a Master of Science in Health-System Pharmacy Administration and Leadership through The Ohio State University
- PGY2 Pediatrics

Graduating residents in 2024 accepted the positions below.

PGY2 Pediatric Pharmacy Residency

- Jennifer Berg, PharmD: Patient Care Pharmacist – Evening Clinical, Nationwide Children's Hospital
- Eva Byerley, PharmD: Pediatric Clinical Pharmacy Specialist, Sanford Children's Hospital

PGY1 Community-Based Pharmacy Residency

- Taylor Duque, PharmD: Advanced Patient Care Pharmacist - Neurology, Nationwide Children's Hospital

PGY1 Pharmacy Residency

- Julianne Fava, PharmD: PGY2 Pediatric Pharmacy Residency, Nationwide Children's Hospital
- Lauren Bull, PharmD: PGY2 Pediatric Pharmacy Residency, Nationwide Children's Hospital
- Johnathan Bull, PharmD: Patient Care Pharmacist, General Pediatrics, Nationwide Children's Hospital

Health-System Pharmacy Administration and Leadership

- Caitlin Hawkins, PharmD: PGY1 Pharmacy completed; PGY2 HSPAL Resident, Nationwide Children's Hospital

Residents gather outside of work monthly to unwind and enjoy each other's company - an important component of our residency experience. In the spring, the residents dedicated their time to giving back to the community by volunteering at a local food bank. They helped with various tasks such as sorting and packing food items and assisting residents with their grocery shopping. This experience not only allowed them to support their community but also strengthened their residency bonding.

This fall, residents met at a park to paint pumpkins, giving them an opportunity to share a creative experience and enjoy the many outdoor venues Columbus offers.



PHARMACY EDUCATION

Both ambulatory and inpatient areas have been busy educating and training team members in 2024.

The Ambulatory Pharmacy team saw significant growth and educational achievements over the course of 2024. Between the Specialty, Clinic and Outpatient Pharmacies, we have welcomed 25 new employees and oriented four employees into new roles. That comes to around 8,000 hours of new hire training this year! Onboarding improvements have occurred in Specialty Pharmacy, with recent additions of a new technician trainer and revamping of their new hire training program which created a more streamlined training process for staff.

Ambulatory education programs this year focused on restructuring our community APPE rotation, compiling an APPE precepting team, proposing a new rotation syllabus and creating educational goals we hope future students meet. Our first student trialing this new structure was here November 2024, and we hope to grow from their feedback. Other 2024 education projects include intern simulation days, new prior authorization training workflow, teaching a nonsterile compounding process for new powder hoods, and several IS rollouts including Hello World. We also completed a successful Pharmacist Education Day that included discussions from diabetes educators on CGMs and insulin pumps, reviewing Med Sync and pharmacy billing processes and a “Taking the Heat” talk given by the Organizational Development team. We look forward to another year of continued growth and education opportunities in 2025!

The Inpatient Pharmacy team continued to standardize training and onboarding procedures in 2024. This year there was progress made to align all initial training practices among inpatient staff, patient care and advanced patient care pharmacy groups. All USP <795>, <797> and <800> education was revamped and standardized. The education team also made great efforts to provide more ACPE-accredited continuing education opportunities. All code and trauma simulations are now ACPE-approved. In addition, a few NICU and transplant pharmacists sat down with Nationwide Children’s PediaCast CME Podcast to talk about RSV and nirsevimab. Throughout the year there were many new upgrades and workflow changes that kept all pharmacists on their toes including:

- New Starter TPN process
- USP <797> updates to media fill processes and implementation of immediate use biannual testing for Code and Trauma trained pharmacists

This year the inpatient education team was also able to restart Pharmacist Education Days that had been on pause since 2021. This half-day session was packed with clinical discussions including anticoagulation updates, opioid stewardship, antimicrobial stewardship relating to both pediatrics and NICU, and an exciting game of ED Jeopardy. Operational topics included various workflow changes/reminders, REMS annual training and an IV medication administration policy refresher.

Inpatient technicians continued to have monthly meetings to stay up-to-date with changes occurring within the department. Education this year heavily focused on Joint Commission readiness and changes to medication preparation procedures (powder hood for non-sterile compounding, camera in H2 IV room for sterile compounding and IV medication preparation for compliance with new pumps).

It was another busy year of training new staff (see statistics below). We can't wait to see what 2025 holds for our ever-expanding team!

New Team Members

Inpatient

- 9 Inpatient Pharmacists
 - 3 Patient Care Pharmacists
 - 6 Inpatient Staff Pharmacists
 - Total RPh training hours in 2024: **3175+** (not including resident on-boarding or satellite pharmacy training hours)
- 30+ new Inpatient Technicians and Interns

Outpatient/Ambulatory

- 8 Pharmacists
 - 1 Specialty Staff Pharmacist
 - 1 Specialty APCP
 - 6 Outpatient Staff Pharmacists
- 13 Technicians
 - 4 Outpatient
 - 3 Homecare
 - 6 Specialty
- 6 Outpatient Interns



NEW TECHNICIAN EDUCATOR

This year, we were able to promote one of our evening shift technicians to be Technician Educator, **Christopher (Creed) Fratianne**. Creed has been with our department since August 2019. Creed received the 2022 Pharmacy award for One Team Values and always has an excellent attitude. It has been great working with Creed in his new role and he has already helped us advance hematology/oncology technician training.

The image shows the entrance to the Orange Pharmacy. On the left, a large orange wall features a white tree silhouette and the words 'Orange Pharmacy' in large, white, 3D block letters. To the right, a glass-paned doorway leads into the pharmacy's interior. Inside, there are several wooden service counters with curved fronts. Above the counters, signs for 'Pick Up' and 'Drop Off' are visible. The floor is covered in a patterned carpet. The entire scene is framed by a decorative border of orange and yellow autumn leaves and butterflies.

Orange
Pharmacy

CINICAL SERVICES

2024 HIGHLIGHTS

Clinical Enhancements

- Patient clinical scoring was developed to facilitate efficient clinical review 24/7 - whether staff were on-site and working shifts or reviewing patients on-call. This scoring brings important information to the end user versus having to search through the medical record. We hope it will create more standardized review of patients across our more than 60 clinical pharmacists and residents. We are also now capturing lab data from outside encounters, such as renal function, that is valuable to assess as patients dynamically can change between visits.
- Code and Trauma Program optimization was completed by moving our Code and Trauma training process (evaluations and training progress) to an online format. This allows more real-time feedback to be assessed by our ED pharmacists and to make changes to staff training or enhancements to experiences for ED providers or patients.
- Standardized clinical notes continued to be a long-term commitment with significant success. We developed and implemented seven new standardized note types for inpatient services that automatically pull in medication and lab data to save documentation time. Since the notes are standardized, it creates clarity for other pharmacy team members reviewing or covering patients, as well as for the teams outside of pharmacy caring for our patients.

New Services

- Evening Clinical (EC) service started in December with new team members, **Gillian Graham** and **Jen Berg**. Now, we have on-site clinical staff that will allow us to expand our clinical services in the evenings – improving the timeliness of patient follow-up and ultimately their clinical outcomes. This new service has allowed us to improve the turnaround time for TDM assessments and decrease on-call responsibilities.
- A partnership with Mount Carmel East/Grove City was established. Throughout 2022 and 2023 the pharmacy departments of Nationwide Children's Hospital, Mount Carmel East and Grove City worked together to improve care at the neonatal intensive care units (NICU). This included providing shadowing experiences, training and experiences at Nationwide Children's Hospital. In 2024, the leadership teams between the organizations determined the best step forward would be to enter a contractual agreement for a shared pharmacist position between the two organizations. We are excited to announce that this was approved and is starting early 2025 with new NICU pharmacist, **Whitney Jones**, leading this effort.
- Additional Ambulatory Pharmacy clinical services including Allergy and Immunology clinic and Dermatology clinic were started in Specialty Pharmacy with **Morgan Celone** serving as clinical pharmacist. Developmental Behavioral Pediatrics (DBP) was an expanded service added to our structure in 2024. DBP is our first independent pharmacist provider services where pharmacists, **Addie Brown** and **Lauren Leiby**, schedule patients and can adjust, modify and discontinue medications through approved privileges.

Credentialing & Privileging (C&P)

Pharmacists continue to expand their role in clinical services. In 2024, credentialed pharmacists were projected to use more than 4,500 privileges, which is a 13% increase in the number of privileges used compared to 2023. Four new privileges were added in 2024: Long-Acting Opioid Antagonists and Antipsychotic Medication Management (BHP pharmacists), International Travel Prophylaxis, Transitions of Care for Home or Discharge Meds, and Parenteral Nutrition Management.

We formally presented the impact of C&P on anticoagulation safety practices at P&T in December. We are using the metric of anticoagulation C&P usage as a measure of success of our program. We had around 3,200 orders for anticoagulants placed over a one-year timeframe with very few events/adverse drug reactions reported.

2025 Goals

- Strengthen pharmacy's role in transitions of care including more robust handoffs, meds-to-beds, discharge education and patient follow-up
- Continue to implement clinical decision support within Epic
- Optimize clinical scoring and identify its role in key performance metrics

POINTS OF PRIDE

- We transitioned the responsibility of overnight therapeutic drug monitoring to our Emergency Medicine clinical pharmacists to improve turn around and decrease burden on our residents. Since January, the overnight team completed 131 assessments.
- Discharge prescription review program was implemented in our Cardiology and Infectious Disease services and showed benefits in preventing prescription errors without delaying patient discharges.

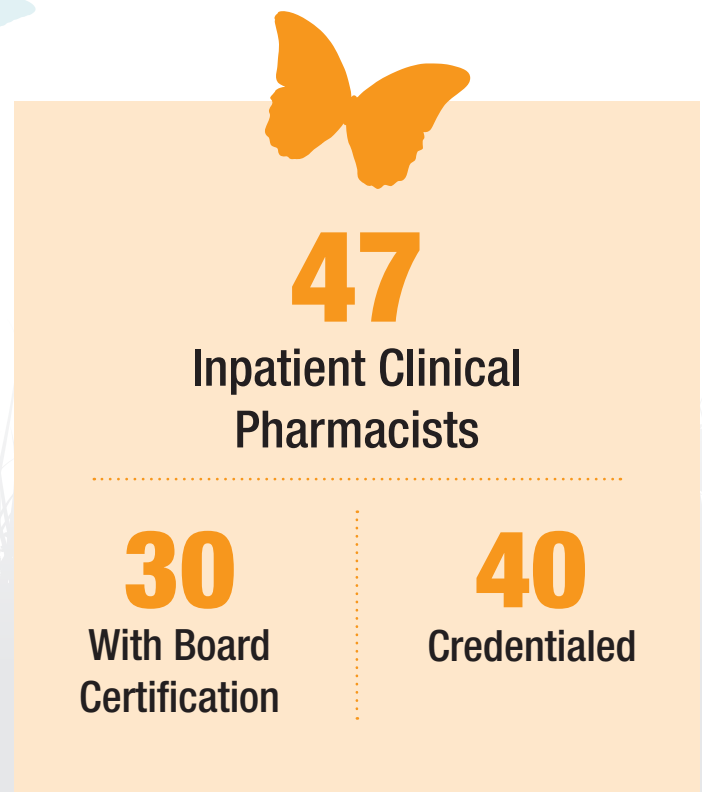
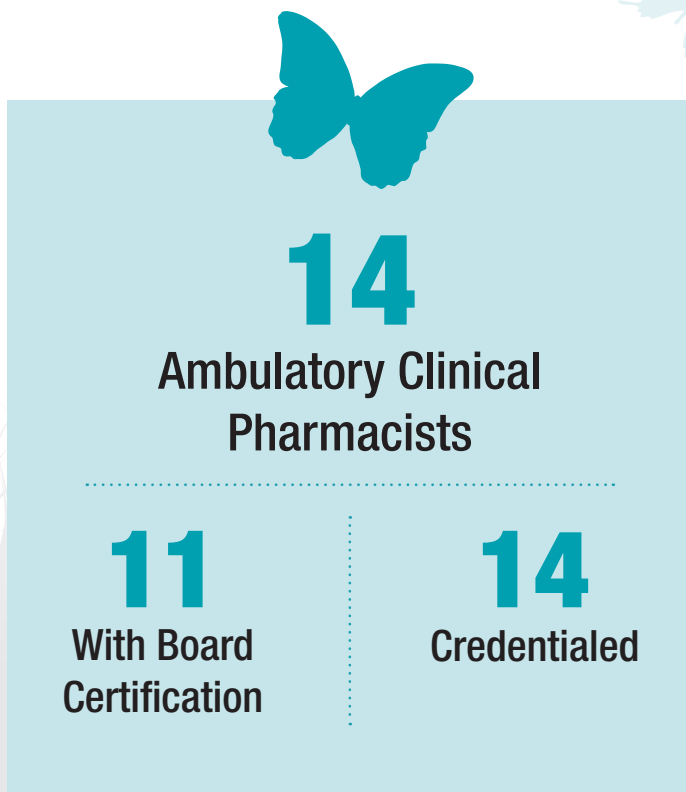


CLINICAL HIGHLIGHT



Over the 2010s, staff members shared concerns of increasing patients with obesity, which meant that weights may place patients at overdose or underdose risk with certain medications.

Colleen Cloyd led a hospital-wide initiative over the last four years to tackle this concern. Not only were quality improvement, medication safety, and clinical operations projects completed, but medication ordering tools utilizing clinical decision support that proactively assists prescribers and pharmacists with ordering and verifying medications were implemented. All of this work culminated in the **first** publication on pediatric obesity in the Pediatric Quality and Safety (PQS) journal that takes existing clinical literature, evaluates impacts to patients and incorporates weight-based dosing into safer systems (EMR build) for patients. This is one example displaying how our pharmacy team prioritizes our vision of Best Outcomes!

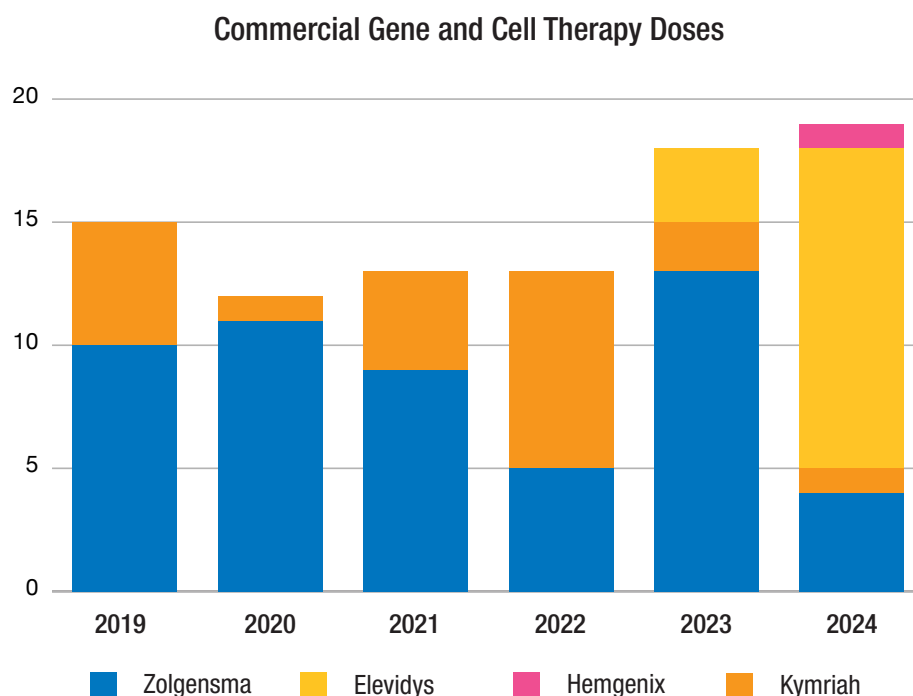


In January 2024, two pharmacists, **Addie Brown** and **Lauren Leiby**, joined the Developmental and Behavioral Pediatrics (DBP) Clinic provider team to see patients independently for behavioral health medication management appointments. This practice was initiated due to a provider shortage in the DBP clinic, which resulted in full schedules and extended time between appointments for patients who would benefit from closer monitoring. Providers can request that a patient meet with a pharmacist for various reasons, including a new behavioral health medication start, medication education, dose adjustments, side effects, weight checks, and vital sign checks. Pharmacists can see patients in person or via a MyChart video visit, with 18 total appointments (three clinic sessions) available each week. During the visit, assessments of medication adherence, side effects, efficacy and general mental health status are completed. Utilizing credentialing and privileging, the pharmacists can refill, titrate, start, stop, or change non-controlled behavioral health medications. Patients can return for follow-up visits with the pharmacist as needed, between regular follow-ups with their primary DBP provider. The integration of pharmacists into this clinic has been positively received by other DBP providers, as well as by patients and families. This innovative practice model could be expanded to other ambulatory care clinic settings in the future.



NOVEL THERAPEUTICS

The development and commercialization of novel therapeutics continues to drive growth within the pharmacy space. In addition, Nationwide Children's pioneers the practices and processes for the safe, effective, efficient and timely delivery of these life-changing therapeutics. Elevidys (delandistrogene moxyparvovec-rokl), discovered in the Abigail Wexner Research Institute at Nationwide Children's Hospital and originally approved in 2023, saw a large label expansion in 2024, resulting in increased treatment eligibility for many Nationwide Children's patients. Newly approved cellular gene therapies for sickle cell and thalassemia were also added to the growing advanced therapeutics portfolio at Nationwide Children's.



In 2025, pharmacy will continue to support the incorporation of more cellular therapies (such as those used for sickle cell) into the medication use process across the organization and further engagement with the Gene Therapy Center of Excellence — a newly created center which aims to provide organizational infrastructure and patient access to these advanced therapeutics. Nationally, pharmacy team members continue to Lead the Journey to Best Outcomes in the management of advanced therapeutics within pharmacy practice demonstrated through ongoing academic publications and presentations and significant national committee engagement.

SPECIALTY PHARMACY

Nationwide Children's Hospital is leading best outcomes for patients on specialty medications in 10 different specialty clinic areas across the organization by providing high quality patient care and services. In 2024, the Patient Management Program reached almost 1,500 patients. We expanded to add food allergy to the allergy clinic protocol and four new medications to the Nationwide Children's SP medication list including several significant biosimilars – Simlandi (adalimumab -ryvk), Tylene (tocilizumab-aazg) and Zymfentra (infliximab-dyyb). Further, there were a vast number of expanded indications for existing specialty medications. Examples include dupilumab (Dupixent) expanded down to 1 year of age and older with eosinophilic esophagitis, omalizumab (Xolair) which is now indicated for patients 1 year of age and older with food allergies, and subcutaneous vedolizumab (Entyvio) for patients with Crohn's Disease who are 18 years of age and older. These new medications and expanded medication indications have allowed the specialty pharmacy to continue to grow and expand our patient reach.



CENTRAL INFUSION PRIOR AUTHORIZATION

The Central Infusion Prior Authorization team is a team of two highly skilled pharmacy technicians who work hand-in-hand with approximately 15 different specialty clinics teams to complete prior authorizations for patients receiving infusion therapies in the T4D Infusion Clinic. They are fierce advocates for patients and work hard to obtain prior authorization approvals for infusion medications.

Facts and Stats

- Completed more than 4,000 clinical assessments and more than 13,000 refill coordination outreach encounters with patients
- Dispensed approximately 65,000 specialty and non-specialty pharmacy medications
- Provided over \$1.5 million in copay support savings to patients and families
- 100% of patients and providers rated their overall experience with Nationwide Children's Specialty Pharmacy as "Good" or "Very Good".

2024 ACCOMPLISHMENTS

- Successful URAC Reaccreditation with no deficiencies found
- Expanded clinical services by adding one Advanced Patient Care Pharmacist (APCP) to support both Allergy and Dermatology clinics
- Continued to refine Epic's Compass Rose build by reviewing and implementing changes based on team feedback
- Hired eight new team members, including five technicians, one staff pharmacist and two advanced patient care pharmacists

OUTPATIENT PHARMACY

The outpatient pharmacies at Nationwide Children's Hospital prepare and dispense prescriptions for patients, hospital employees and medical staff at our Blue, Orange and Yellow pharmacy locations. Our pharmacists are the pediatric medication experts serving patients and providing support for community pharmacies by providing compounding formulas for any pharmacy to provide patient care across the state.

- Processed more than **450,000** prescriptions in 2024 – a more than 50,000 prescription increase from 2023 (12% growth)
- Average Patient Satisfaction Survey Score of 4.8 of 5

Ambulatory Services

The Ambulatory Pharmacy Department provides pharmacy services to achieve best medication-related outcomes for all our patients within the community. Some highlights:

- Blue pharmacy remodel - \$1 million construction upgrade to create 60% more operational space
- Transitioned non-sterile, non-hazardous compounding into containment ventilated enclosure (i.e. non-sterile powder containment hood)
- Increased enrollment in Med Sync to 100 patients and offer expedited pickup process
- Implemented practice changes to improve prophylactic antibiotic adherence for sickle cell patients
- Improved patient communication through use of MyChart and HelloWorld functionality
- Supported continued growth of school-based health services including additional locations and more prescriptions (diabetes, asthma, and more)
- Average inventory accuracy greater than 91%
- Transition of the Outpatient Pharmacies to separate license and pharmacy identifiers to ensure regulatory and billing compliance from historic licensure structure

2024 HIGHLIGHTS

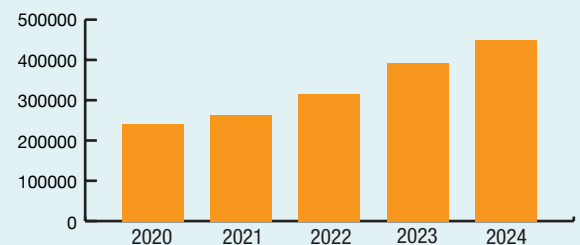
- Success of medication bedside delivery and education through Meds-to-Beds service including:
 - Reaching more than 8,300 Meds-to-Beds outpatient prescriptions provided by outpatient and inpatient team members
 - Bedside deliveries have increased 30% from 2023
 - Greater than 90,000 minutes spent providing education to our patients and families
- Precepted more than 36 pharmacy students across all ambulatory locations



MED SYNC

Med Sync is a transitions of care (TOC) service provided by Nationwide Children's Outpatient Pharmacies that aligns an enrolled patient's prescriptions to a single dispense date each month. It also includes refill coordination support which ensures patients have the medications they need and are picking them up each month. This improves medication adherence while also reducing the number of trips to the pharmacy each month for our patients. Outpatient pharmacy operations also benefit by decreased urgent requests, proactive management of large patient orders and increased revenue.

Annual Number of Prescriptions Filled by Blue Pharmacy



INPATIENT PHARMACY

Inpatient Pharmacy serves all our inpatient care as well as providing assistance and supplies to EDs, Urgent Cares and medications for clinics. The operations are increasingly complex and always busy around the clock. We've had a tremendous year!



2024 HIGHLIGHTS

The Inpatient Pharmacy team achieved remarkable milestones in 2024, demonstrating dedication to patient care, operational excellence and safety.

- **New OR Pharmacy at LOSC:** The OR pharmacy team successfully opened a new operating room (OR) pharmacy in the Livingston Orthopedic and Surgery Center (LOSC), ensuring medication availability on the West Campus.
- **Adoption of USP <795> updates:** Collaborating with the Outpatient Pharmacy, the team adopted new policies and procedures to align with the latest USP <795> standards, ensuring compliance and patient safety in non-sterile compounding practices. This included implementing a new non-sterile powder containment hood.
- **Progress on USP <797> compliance:** The team continued to make strides in adopting the newest USP <797> standards, emphasizing sterile compounding safety and compliance.
- **Technician recruitment and hiring:** More than 25 new pharmacy technicians were hired and trained, strengthening our ability to provide consistent and high-quality services across all shifts. Our technician supervisors also hosted multiple technician training programs for tours. We also continue to partner with those programs to precept learners.
- **Night shift growth:** Recognizing the growing volume of patients and increasing demands, the pharmacy expanded night shift technician staffing to maintain excellent service delivery.
- **Chemotherapy safety enhancements:** The implementation of photo capture within the IV workflow management system during preparation for chemotherapy - a high-risk area marked a significant step in ensuring accuracy and safety compared to former ceiling camera process.
- **Collaboration during challenges:** Demonstrating exceptional teamwork, the operational and clinical teams worked closely to navigate staffing challenges during a period of pharmacist hiring difficulties exacerbated by lower pharmacist graduation rates and other changing demographics.
- **Urgent care standardization:** Medications and ordering processes at all Urgent Care locations were standardized and simplified, streamlining operations and ensuring consistent accessibility.
- **Response to fluid shortages:** Collaborating with the Inventory Team, Clinical Team and Leadership, staff responded swiftly to nationwide fluid shortages. Staff changed compounding practices and provided expertise to confirm clinical appropriateness.

FAST FACTS

- 3 million total doses dispensed
 - Over 1.3 million doses dispensed from Inpatient Pharmacy locations
 - Over 1.7 million doses dispensed from automated dispensing cabinets
 - 2.4% in dose increase from 2023
- Over 16,000 parenteral nutrition bags prepared
- Over 16,500 injectable chemotherapy doses prepared

2025 Goals

- Improving hematology/oncology satellite workflows
- Optimization of automated dispensing cabinet stock, processes and users
- Onboarding and training of a new pharmacy supervisor overseeing pharmacy interns
- Pharmacy technician retention

In 2024, the Inpatient Pharmacy's accomplishments showcased their resilience, adaptability, and commitment to delivering safe and effective care to our patients. These achievements set a strong foundation for growth and change in the coming year.

REGULATORY AND COMPLIANCE

This year, our pharmacy made a concerted effort to enhance compliance with Joint Commission (TJC) standards and Ohio Board of Pharmacy (BOP) regulations, reinforcing our commitment to delivering the highest quality of care to our patients. Acknowledging the critical importance of both departmental and staff regulatory readiness, we systematically addressed regulatory requirements while cultivating a culture of accountability and engagement.



2024 HIGHLIGHTS

- We developed comprehensive TJC Readiness Assessments that provided a clear roadmap for compliance. Simultaneously, we launched a five-month staff education series that incorporated structured check-ins, enabling us to monitor progress and ensure sustained engagement. This dual approach not only prepared our team for regulatory expectations, but also instilled a sense of ownership and responsibility across all levels of the pharmacy.
- We conducted a thorough review of more than 100 Board of Pharmacy rules, providing insightful and constructive feedback on critical areas such as Duty to Report and Outpatient Pharmacy Delivery Services. This meticulous evaluation not only ensured that our practices align with the highest regulatory standards but also reinforced our commitment to advocating for both our patients and the pharmacy profession.

HOME CARE PHARMACY

Nationwide Children's Hospital Homecare Pharmacy has been serving patients for more than 30 years. Homecare provides sterile injections and intravenous infusions to patients in their home. Infusions and injections are administered by homecare nurses or patient families can be trained for medication administration. The home infusion services have high patient satisfaction, low blood stream infection rates and low hospital readmission rates. The Homecare Pharmacy services patients in central, southern and southeastern Ohio.

Homecare therapies include:

- Total Parenteral Nutrition (TPN)
- Hydration fluids
- Antibiotics
- Chemotherapy
- Pain management
- Monoclonal antibodies
- Enzyme replacement
- Gene modifying therapies
- IV catheter care

The Homecare Pharmacy serviced more than **600 patients** and provided more than **160,000** sterile doses, including more than **5,200 TPNs**.

2024 HIGHLIGHTS

- The department implemented real-time IV/injectable sterile product checking via camera technology to enhance safety and align IV workflow checking with ISMP best practices.
- Homecare Pharmacy completed One Team meetings with a variety of different service lines to grow referrals and services and educate providers on homecare pharmacy service potential. New home infusion and injectable therapies completed in 2024 include Crysvida (burosumab), Exondys (eteplirsen), Triptodur (triptorelin) and Ultomiris (ravulizumab).
- Nationwide Children's - Toledo expanded and added Homecare services. Homecare pharmacy has begun to service patients in the Toledo area and are working to determine future growth in northwest Ohio.
- Homecare Pharmacy had two significant retirements in 2024:
 - **David Demyan** (Pharmacy and Durable Medical Equipment Purchaser): David served Nationwide Children's Homecare for about 15 years. He was recognized for his diligence and proactivity to respond to drug/supply shortages, and ability to operationalize stock rotation and supply patterns to optimize efficiency.
 - **Terry Laurila** (Homecare Pharmacy Manager): Terry served as pharmacy manager at Nationwide Children's Homecare for 19 years. He completed a pharmacy health-system administration residency program through Mount Carmel Health System in Columbus and went on to serve in a variety of leadership roles inpatient and in the home infusion private sector before finding his home at Nationwide Children's. Terry was recognized as Manager of the Year in 2013 and received the prestigious Service from the Heart award in 2007. Terry led the Homecare Pharmacy department through numerous successful Joint Commission and State Board of Pharmacy surveys, including navigation of complex regulatory requirements by different governing organizations. Terry's ability to generate optimism in his team, his infectious smile and laugh, and passion for homecare pharmacy are just a few of the many qualities that will be missed. We thank him for his many years of excellent service to our patients, families and co-workers.

INFORMATION SERVICES (IS)

Nationwide Children's Hospital Pharmacy Information Services (IS) works to ensure that our technology functions safely and efficiently across the medication-use process. This includes EMR optimization as well as hardware support and maintenance. Pharmacy IS also focuses on data analytics, providing dashboards and reports used for ongoing clinical and operational analysis ensuring decisions are results driven and value added.

This was a year of growth and continued opportunity for pharmacy IS as we welcomed one new team member to our team, **Michael Carlisle**. He transitioned from supply chain into an IS Technician role specializing in Epic's Willow Inventory and is the second technician to join the Pharmacy IS team. Newer team members also excelled in some of their initial projects such as Epic dashboard optimization, assisting with the opening on the Livingston Orthopedic Surgery Center as well as Clinical Decision Support optimization.

2024 HIGHLIGHTS

- Implementation of Epic Hyperdrive as well as two Epic release upgrades
- Implementation of Imprivata across our department for positive ID capture
- Upgrade of CareFusion Pyxis v1.8 software for our MedStation and PAS hardware
- Creation of operational Epic Dashboards for multiple pharmacy divisions to automate manual reports and improve daily management of teams
- Completion of Nationwide Children's EMR's dispense prep and compounding and repackaging at off-site NICUs
- Epic Willow Inventory module for inpatient pharmacy kick-off created
- Epic IV fluid Clinical Decision Support enhancements
- Participated in the first month long test of our backup data center for Epic serving as a crucial test of our systems in the event of a disaster or cybersecurity incident
- Epic Hello World/MyChart optimization for patient communication with outpatient pharmacy created
- Epic MedSync optimization
- Epic preference list optimization for outpatient prescribing



FAST FACTS

- **800+** Epic change requests completed in 2024
- **150+** individual data requests reviewed, sent and validated
- **3** department dashboards converted and built into Epic enhancing the monitoring of service line key performance indicators and metrics

2025 Goals

- Implementation of Willow Inventory module for inpatient pharmacy
- Replacement of our Swisslog BoxPicker Storage System
- Replacement of our Talyst Packager
- Epic and BBraun pump integration kickoff
- Epic Beaker & Buggy kickoff
- Transition of our outpatient pharmacy IVR system to an interactive, personalized IVR
- Continued Epic Dashboard optimization

INVESTIGATIONAL DRUG SERVICES (IDS)

IDS continues to support Nationwide Children's Strategic Plan through the integration of translational drug research into clinical care. The clinical drug trial portfolio at Nationwide Children's includes Phase 1, Phase 2 and Phase 3 clinical studies from many departments across the organization and continues to grow. Currently, over **100** clinical drug trials are in the short-term study pipeline.

2024 HIGHLIGHTS

- Implemented e-prescribing for investigational medication prescriptions
- Published in JAPhA on the value of IDS Pharmacists in health-system pharmacy practice
- Optimized workflow processes for the introduction of advanced therapeutics into health-system operations
- Expanded student and learner experiences within the IDS



FAST FACTS

- **40+** new clinical research and compassionate use protocols launched in IDS in 2024
- **24** gene and cell therapy protocols active or pending
- **250+** pharmacy supported external monitoring visits to ensure clinical trial compliance
- **3** Nationwide Children's sponsor-investigator, multicenter central service Pharmacy trials, overseeing compliance at **38 active or pending subsite pharmacies**



BEHAVIORAL HEALTH SERVICES

2024 was a year of collaboration amongst our pharmacy team at the Big Lots Behavioral Health Pavilion. This year, our team worked together to develop a case series on pharmacological management of adolescent catatonia which was published in June in *Mental Health Clinician*, the journal associated with the American Association of Psychiatric Pharmacy.

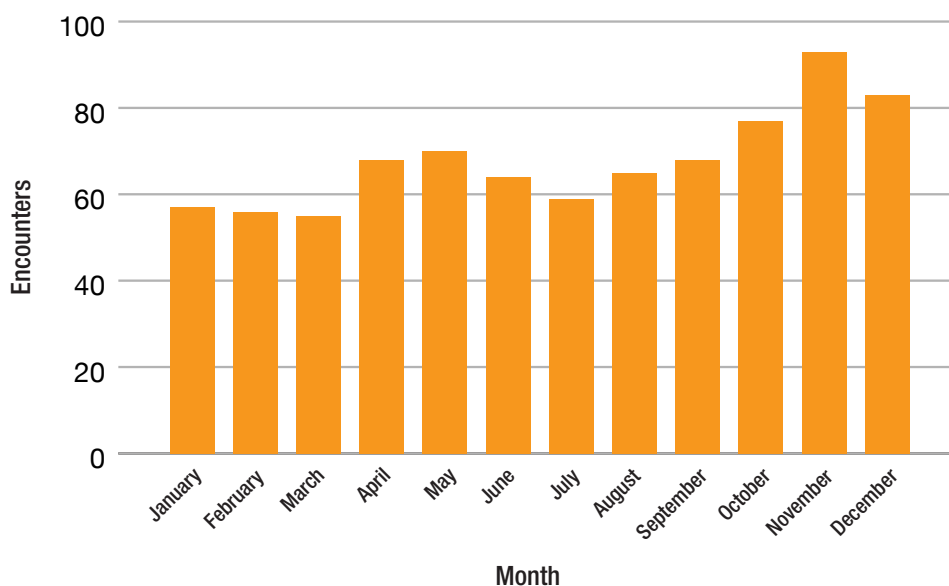
2024 HIGHLIGHTS

- **Matt Dick** developed a module-based didactic training for pharmacy interns training at the Behavioral Health Pavilion which culminated in an independent case review
- Precepted 7 pharmacy students from 3 different Ohio pharmacy schools
- Development of medication education service for admitted patients who benefit for one-on-one medication counseling
- Precepted the first resident project completed with the Pavilion pharmacy team, evaluating incidence of weight gain and completion of lab monitoring for adolescents prescribed aripiprazole

Quality Improvement Efforts

Transitions of care and medication reconciliation continue to be key components of pharmacy services at the Behavioral Health Pavilion. Through November 2024, over **700 patients** had medication counseling by a member of the Pavilion pharmacy team at the time of discharge from an inpatient unit. Outside of counseling, the pharmacist works with the team to ensure prescriptions are sent to the outpatient pharmacy prior to discharge and are delivered to the parent/caregiver before taking their child home from the hospital. This coordination can be time-intensive, but providers and families have expressed what a difference it makes in the transition home from an inpatient psychiatric stay. Medication reconciliation also saw significant growth, with over **2,000 patients** receiving a pharmacy-completed medication reconciliation in 2024. In 2025, we hope to increase our capture within 24 hours to 80% and our total admission capture to 95%.

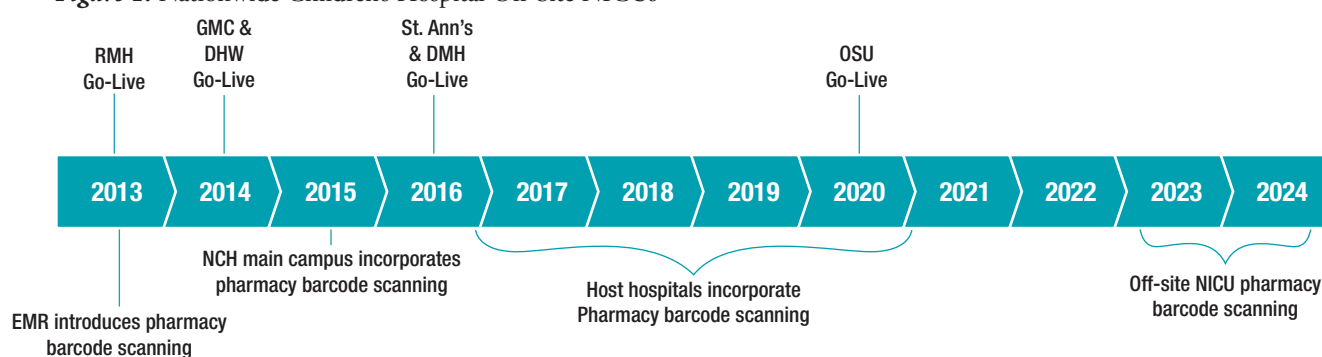
2024 TOC Discharge Encounters



SPECIAL FEATURE: OFF-SITE NICU CLINICAL OPERATIONS AND SAFETY UPDATES

Nationwide Children's Hospital partners with the three-adult health-systems (OhioHealth, The Ohio State University, Mount Carmel) to operate six neonatal intensive care units. This unique practice model requires a collaboration between the adult facilities and Nationwide Children's Hospital for pharmacy services. Adult facilities provide first doses, re-dispenses and controlled substances from Nationwide Children's Hospital medication supply. Nationwide Children's Hospital delivers a daily batch of scheduled medications and parenteral nutrition, completes all order verification, and provides clinical pharmacy services.

Figure 1: Nationwide Children's Hospital Off-Site NICUs



Since the start of these partnerships, many pharmacy safety procedures have been implemented at Nationwide Children's Hospital and the adult facilities (figure 1). Historically, the staff at each of these locations have not had access to Nationwide Children's Hospital electronic medical record (EMR) and operations were completed via paper receipts. The goal of our updates in 2023 and 2024 were to bring the adult facilities to the same safety standards utilized at Nationwide Children's Hospital main campus.

Our first go-live was in October 2023 and completion was done with our final go-live in October 2024; however, the year of implementation does not take into the extent of the work completed by the team. Throughout 2023 and 2024 the pharmacy informatics, core NICU pharmacy team members, project managers, and adult facility teams worked to implement these standards and navigate the collaborative processes to completion. The final product is one that allows for safer practices for pharmacy compounding and dispensing through barcode scanning and providing just-in-time information to adult facility staff. As we have implemented over the past year, we have been monitoring ongoing "Near-Miss" data from the EMR. We have discovered that the implementation of barcode scanning has allowed staff to identify mismatched dispenses and prevent medication errors. We look forward to this continued partnership and advancements in the future. As the organizations continue our partnership in the future, we plan to implement new and innovative safety mechanisms through camera technologies and integrated medical records to provide the necessary information to all end users.

NATIONWIDE CHILDREN'S HOSPITAL - TOLEDO

It has been a busy 2024 for our pediatric team in Toledo. We've continued to partner with Nationwide Children's and St. Vincent's to provide exceptional care for Toledo patients and grow our services inpatient and across ambulatory clinics.

2024 HIGHLIGHTS

Nationwide Children's Hospital - Toledo expanded our clinical pharmacy services by hiring a Patient Care Pharmacist (PCP). Our PCP, **Sami Bhatti**, has become an integral part of the multidisciplinary team in the PICU, NICU and General Pediatrics. Having a pharmacist participating on multidisciplinary team rounds for all three units has allowed for enhanced clinical services for our patients. Sami provides education to medical students and residents, pharmacy staff and pharmacy learners.

In March 2024 we moved into a newly renovated inventory space in the Mercy St. Vincent's pharmacy. Our new inventory room is large enough to store all our drug inventory with two workstations and counter space for dose preparation and checking. The pharmacist's desk is also in the inventory room improving efficiency and visibility of the pharmacist.

2024 has been a year of growth for our outpatient services. Four of our primary care locations have moved into newly renovated offices and we opened a new specialty office in Sylvania, Ohio. Nationwide Children's - Toledo has hired providers in the outpatient specialty clinics, and we acquired a pediatric primary care office in Maumee, Ohio.

We have been busy preparing for our Joint Commission Survey, which occurred in November 2024. Nationwide Children's - Toledo had a mock survey in March which identified some focus areas for the hospital. We worked on policy review and standardization and evaluation of compliance with the medication management standards in both inpatient and outpatient areas.

2025 Goals

With the addition of two hematologist/oncologists, a urologist, psychologist, general surgery advanced practice provider and a primary care office, we anticipate continued growth in outpatient services throughout 2025.

In the Pharmacy Department, our goal in 2025 is to begin an intern program at Nationwide Children's - Toledo. Our PCP is a preceptor for students and residents and her pediatric rotation is quite popular. Generating interest in pediatric pharmacy at local schools of pharmacy will help with future recruitment opportunities.

SUPPLY CHAIN, 340B AND FINANCE



Nationwide Children's Hospital Pharmacy Supply Chain and Finance Team welcomed three new employees in 2024. **Jared Bruce** and **Cambell Wright** joined the team as new inventory technicians and **Brittanie Guthrie** joined the team as the Blue and Orange pharmacy inventory coordinator. **Fatima Alzaki** was promoted within the inventory team to become the first west campus inventory coordinator.

2024 was a very busy and productive year for the inventory team. Successfully navigating the IV fluid shortage caused by the flooding of Hurricane Helene was a tremendous demonstration of our One Team culture. The clinical and operational conservation efforts, coupled with consistent procurement of fluid allocations, allowed Nationwide Children's to continue to provide high quality care on the journey to best outcomes. Completing construction on the new T0146 inventory space (across the hall from main pharmacy) allowed timely flexibility for fluid and supply storage. This net new supply space for the team will enable our department to be agile and create a strategic cache of critical medications within the main pharmacy inventory warehouse by offloading supplies to T0146.

The 340B team successfully completed another external audit similar to 2023. This audit took another close look at all areas of our 340B program and did not reveal any significant findings. Additionally, the 340B team nearly doubled the size of the Nationwide Children's 340B program footprint by adding 16 additional 340B child sites. This expanded footprint will allow Nationwide Children's to capture 340B savings to reinvest in the care that we provide to the pediatric population of central Ohio and beyond.

The Pharmacy finance team has strengthened the reporting and tracking of medication expenses by creating expense dashboards for our high-volume wholesalers. This will allow for continued drug expense granularity after the 2025 Workday implementation. The pharmacy and hospital finance teams continue to collaborate to better understand payor contracts, denials and utilization opportunities to ensure revenue cycle integrity.

FAST FACTS

- The pharmacy inventory team processed greater than **125,000** line items from our pharmacy wholesalers.
- Decreased overall wholesale acquisition cost (WAC) spend by **10%** from 2022 to 2024
- The 340B team completed more than **2,250** patient level test audits for 340B compliance.
- 340B and GPO accumulations were turned back on for the operating rooms, resulting in an estimated significant annual cost savings
- 20 drugs drive 56% of the inpatient revenue and 80 drugs comprise 80% of the inpatient revenue
- 88% of Pharmacy expenses are medications and supplies and 12% are salaries and benefits - driven by high-cost medications like gene and cell therapies and new chemotherapies and immunotherapies.

2025 Goals

- Implementation of Workday for clinic requisitions which will replace the existing Microsoft Access database used for clinic and IDS pharmacy requisitions.
- Increase focus on denial management, prior authorization services, and revenue cycle integrity in partnership with Hospital Finance

MILESTONE ANNIVERSARIES

Fatima Alzaki	5 years	Aneeka Kittaneh	10 years
Jennifer Berg	5 years	Teri McCarty	10 years
Alyson Brown	5 years	Kayla Petkus	10 years
Salma El-Barrad	5 years	Kelsey Schmuhl	10 years
Christopher Fratianne	5 years	Heather Schoeneman	10 years
Andres Garcia Ortiz	5 years	Trenton Soukup	10 years
Seth Hall	5 years	Patrick Collins	15 years
Adam Hohman	5 years	Leanne Murray	15 years
Troy Kienzle	5 years	Matt Sapko	15 years
Amanda Kimbler	5 years	Shannon Howski	20 years
Brittany Kozar	5 years	Andy McClain	20 years
Lauren Leiby	5 years	Kim Novak	20 years
Kembral Nelson	5 years	Vinita Pai	20 years
Jose Ornelas	5 years	Teresa Puthoff	20 years
Emily Overfield	5 years	Cheryl Sargel	20 years
Matt Rich	5 years	Jessica Tansmore	20 years
Cassie Rush	5 years	Kristen Lamberjack	30 years
Ashley Samczuk	5 years	Mary Leanza	30 years
Adrienne Shearer	5 years	Shawn Pierson	30 years
LaShae Bowe	10 years	Jill Stegall	35 years

RETIREMENTS

Diane Durrell	44 years
Roger Zeiter	32 years
Julie Miller	29 years
Terry Laurila	19 years
David Demyan	15 years

AWARDS

- **Ben Barth** won an IMPACT award for his work with the code/trauma training program
- **Matt Dick** received the Department of Pharmacy Patient and Family Care Advocate Award in recognition of his commitment to ensuring all patients and families receive equitable care at the Behavioral Health Pavilion
- **Melissa Campbell** completed and successfully passed the ASHP Sterile Compounding Certificate Technician Program and was awarded the Employee of the Quarter for all of the Homecare department
- **Tara Rikabi** (Class of 2025) won a 2024 ASHP Student Leadership Award for the Class of 2025 as well as served on the ASHP Student Society Development Advisory Group (SSDAG)
- **Seth Hall:** One Team Values Award Winner
- **Alisha Chesser:** Zero Hero Award Winner
- We received the Center for Clinical Excellence Award in January 2024. This award is given in recognition of leadership and of the excellent outcomes in preventing significant adverse drug events over the past several years.

BOARD CERTIFICATIONS

- **Lauryn Shiplett** achieved board certification in psychiatric pharmacy
- **Alaine Feltes** achieved board certification in Emergency Medicine pharmacy

PRECEPTOR/STAFF RESIDENT AWARDS

- Inpatient Staff: Alisha Chesser
- Inpatient Preceptor: Megan Lewis
- Outpatient Staff: Katie McTaggart
- Outpatient Preceptor: Kelsey Schmuhl



Employee of the Year:

TAYLOR MORRIS

Taylor was recognized as the 2023 Employee of the Year! She has continued to display hard work and commitment to patient care as she recently received a promotion to Inpatient Pharmacist Supervisor. Here is what her co-workers shared about her:

“Taylor is an outstanding pharmacist. She has strong clinical judgement and is an asset that can perform at the top of her game in every environment. She brings high quality patient safety to everything she does, and still does it in an efficient manner. On top of all of that, she is kind and easygoing. I look up to her as a pharmacist and person.”

“Taylor is the jack of all trades and master of everything! From working in the ED, on DIISC service, at BHP, H12 and H2 pharmacy and Main Pharmacy, she provides high quality patient care in every sector of inpatient pharmacy.”

Congratulations Taylor!

EMPLOYEE OF THE QUARTER

- Quarter 1: Lauren Leiby
- Quarter 2: Adrienne Shearer
- Quarter 3: Brittanie Guthrie
- Quarter 4: Hayden Thompson

DEPARTMENT SCHOLARSHIP

In 2024, the pharmacy department continued to exceed our goals of publications and presentations. During the year, **20** works were published and **50** total presentations were presented at conferences and meetings across the country, as well as in our own hospital network.

2024 Publications - 20 total

Alaina Feltes, et al.

Impact of point-of-care gonorrhea and chlamydia testing in the emergency department on reducing overtreatment rates

The American Journal of Emergency Medicine

Caitlin Hawkins, et al.

Evaluation of Hyponatremia in Infants on Vasopressin Therapy

The Journal of Pediatric Pharmacology and Therapeutics

Cheryl Maslouski, Sonya Sebastian, Addie Brown, Anna Gehres, et al.

Primary care team member's perceptions of credentialed and privileged clinic pharmacists and impact on clinic workload in a pediatric primary care network

Journal of the American Pharmacists Association

Colleen Cloyd, Danielle Macedone, Jenna Merandi, Shawn Pierson, Maria Wcislo, Lindsay Kalata, Zachary Thompson, et al.

A Quality Initiative to Improve Appropriate Medication Dosing in Pediatric Patients with Obesity

Pediatric Quality and Safety

Elora Hilmas, Yelena Wu, Alexandra Burton, et al.

Therapeutic Drug Monitoring in Special Populations

Drug Distribution in Special Populations

Jill Blind and Julie Leary

IDS pharmacists: Bridging the translational research gap for pharmacy practice

Journal of the American Pharmacists Association

Jill Blind, Taylor Niese, Abigail Dean, et al.

A comprehensive literature scoping review of infection prevention and control methods for viral-mediated gene therapies

Antimicrobial Stewardship & Healthcare Epidemiology

Kelly Wise, et al.

Implementation of an automated transition readiness assessment in a pediatric rheumatology clinic

Frontiers in Pediatrics

Kelsey Schmuhl, et al.

Early Remission of Opioid Use Disorder in an Adolescent Using Buprenorphine Extended – Release Subcutaneous Injection: A Case Report

Journal of Adolescent Health

Kelsey Schmuhl, et al.

Removing Barriers to Contraceptive Access for Adolescents

The Journal of Pediatric Pharmacology and Therapeutics

Kembral Nelson & Aneeka Kittaneh

Build a Medication Safety Risk Measurement Tool

Pharmacy Purchasing & Products

Kristen Curry, Cassandra Rush, Vinita Pai

Chimeric Antigen Receptor T-Cell Therapy

Oncology and Hematology Disorders

Lauren Leiby, Lauryn Shiplett, Wendy Lin, Matthew Dick, Hannah Thornton

Pharmacologic management of adolescent catatonia: A dual-case series

Mental Health Clinician

Megan McNicol, et al.

Clinical outcomes and cost savings of a nonmedical switch to a biosimilar in children/young adults with inflammatory bowel disease
Journal of Pediatric Gastroenterology and Nutrition

Megan McNicol, et al.

Proactive therapeutic drug monitoring and vedolizumab dose optimization in children with inflammatory bowel disease
Journal of Pediatric Gastroenterology and Nutrition

Michael Storey, et al.

Continued safety and long-term effectiveness of onasemnogene abeparvovec in Ohio
Neuromuscular Disorders

Michael Storey, et al.

Gene therapy: Practical considerations for clinical and operational pharmacy practice
American Journal of Health-System Pharmacy

Omar Hajmoussa and Alex Swick

A Hospital's Outpatient Pharmacies Attempt to Reduce DIR Fees Using Performance Reports
Pharmacy Times

Sonya Sebastian, Hannah Thornton, et al.

Patient-perceived understanding of home-going medication with transitions of care services at a pediatric institution
Journal of the American Pharmacists Association

Teresa Puthoff, et al.

Patterns of use of malnutrition risk screening in pediatric populations: A survey of current practice among pediatric hospitals in North America
Nutrition in Clinical Practice

2024 Presentations - 50 Total

Arslan Ali and Michael Storey

ASHP Revenue Cycle Integrity
ASHP Midyear

Ashley Duty

All by Design: Becoming a Cleanroom Certification Mastermind
ASHP Futures Meeting

Caitlin Hawkins

Efficiency of Non-Emergent Hyperglycemia Management in the Pediatric Emergency Department
Central Ohio Society of Health-System Pharmacy Spring Meeting

Caitlin Hawkins

Movin' On Up: The Importance of Pharmacy Technician Advancement
Ohio Society of Health-System Pharmacy Division Day

Cheryl Sargel

Glomerular Filtration Rate Using Serum Creatinine or Cystatin C in the Pediatric Intensive Care Unit
Critical Care Congress

Christina Adler

Assesstivus for the Rest of US (IDS folks): Establishing a Network-Wide Assessment of Risk Process for Investigational Drugs
ASHP Midyear

Doug Huffman

Spend Optimization
340b Midwest Regional Conference

Heather Gonce

Recorded Pharmacist Educational Series: Gene & Cell Therapy (Part 2-In Vivo and Viral-based Gene Therapy: Overview)
American Society of Health-System Pharmacists – Section of Clinical Specialists and Scientists

Jacqueline Magers, Megan Lewis, and Colleen Djordjevich

Respiratory Syncytial Virus (RSV) Update
NCH PedicaCast CME

Jenna Merandi, et al.

How do we know this is helping? Explore a human centered approach towards learning and improvement
Solutions for Patient Safety National Learning Session

Jenna Merandi, et al.

Practical Application of Proactive Safety: Evolving Our Approach

American Society for Health Care Risk Management

Jenna Merandi and James Won (interviewed by Todd Conklin)

Pre-accident investigation – Podcast Interview
Podcast

Jenna Merandi

Proactive Safety: Evolving Our Approach
American Academy of Pediatrics

Jenna Merandi

Proactive Safety: Evolving Our Approach
Human & Organizational Performance 2024 Summit

Jenna Merandi

Proactive Safety: Evolving Our Approach
SHOTS Annual 2024 Meeting

Jenny Steinbrenner

Practice Enhancing Interventions
ASHP Midyear

Jessica Fischer

Pharmacy Led Central Prior Authorizations
CHA Pharmacy Leaders

Jill Blind

The Promise of Gene Therapy
DISRxUPT Podcast

Julianne Fava

Posaconazole-Induced Pseudohyperaldosteronism
Midwest Peds

Julie Leary

Clinical Research Competency Series_Pharmacy Services
AWRI Competency Series

Kayla Petkus

Novel Drug Therapies in Pediatrics
9th Annual Pediatric Update for Advanced Practice Providers

Kelin Wheaton

Resolving Asthma Medication Access Barriers
Ohio Pharmacist Association Midyear Conference

Kelin Wheaton

Resolving Medication Access Barriers with Partners For Kids Resources
Community Pediatric Advisory Council

Kelin Wheaton

Resolving Medication Access Barriers with Partners For Kids Resources
Ohio Chapter of The American Academy of Pediatrics

Kelin Wheaton

Resources to Prescribe Guideline- Recommended Medications and Avoid insurance Barriers
Ohio Chapter of the American Academy of Pediatrics

Kelsey Schmuhl

Emerging Drug Trends: Fentanyl fatalities, xylazine, and x-wavier removal
NCH Pediatric Grand Rounds

Kembral Nelson

Navigating Uncertainty: Leveraging a Risk and Control Matrix Tool for Proactive and Ongoing Risk Mitigation
ASQ Columbus Section Fall Conference

Kembral Nelson and Kennedy Jones

Hazardous Observations Tools, Strategies, and Wins for Pharmacy and Non-Pharmacy Areas
OSHP Annual Meeting

Kembral Nelson and Aneeka Kittaneh

Out of Sight out of mind: Medication Safety Practices in the Ambulatory Pharmacy Setting
OSHP Annual Meeting

Kimberly Novak

20 Years and Counting: Reflections of R303
University of Kentucky College of Pharmacy

Kimberly Novak

Atypical Alphabet Soup: ABPA, ALPS, CF, ETI, and PI.... Oh My!

North American Cystic Fibrosis Conference 2024

Kimberly Novak

Retrospective Review of Prucalopride Prescribing in Pediatric Patients and Associated Annual Meeting

Pediatric Pharmacy Association Annual Meeting

Kimberly Novak

What Shall I Do as I Prepare for PGY2?

Ohio Society of Health- System Pharmacists Annual Meeting

Kristen Curry, Mara Crabtree, Cassie Rush

Pharmacy Consideration for Targeted Therapies

Targeted Therapies Symposium Conference

Kristen Lamberjack

Treating your youngest Hepatitis C Patients

ASHP Midyear

Lauren Bull

Assessment of unmet social needs for patients who receive pharmacist discharge counseling

Nationwide Children's Hospital Division of Health Equity Team Meeting

Lauren Bull

Bat-ting a Rabies Exposure: A Campground Crisis

Midwest Peds

Laurny Shiplett

Updates in Pharmacology – ADHD

2024 Ohio Association of Advanced Practices Nurses Conference

Matt Sapko and Caitlin Hawkins

Developing the Pharmacy Workforce; Novel People Management Strategies

CHA Leaders Fall Forum

Megan Lewis

Straight to the Heart: Transplant Medication Overview

NCH Heart Center Podcast

Michael Storey

Anatomy of a CGT Launch: Operationalizing Cell and Gene Therapy

Alliance for Regenerative Medicine's Meeting on the Mesa

Michael Storey

CAR-T and Gene Therapy: Cold Chain and Hazardous Handling

Vizient Gene and Cell Therapy Symposium

Michael Storey

Fighting for Every Future

Parent Project Muscular Dystrophy PPMD Connect

Michael Storey

Gene Therapy: Adverse Effect Management

ASHP Midyear

Michael Storey

Gene Therapy: Operational, Financial, and Clinical Considerations

ASHP Midyear

Michael Storey

Gene Therapy Clinical Implementation and Readiness

MDA Gene Therapy Summit

Patrik Miller

Management of Paroxysmal Sympathetic Hyperactivity (PSH)

ACCP

Shelly Morvay

Medication Use and Safety

Virtual Presentation for OSU ASHP SSHP (student) Group

Teresa Puthoff

Parenteral Nutrition Order Writing in the Face of Clinical Challenges

American Society of Parenteral and Enteral Nutrition Clinical Nutrition Week

Teri McCarty

Optimizing Care Through Evidence Based Practices for NAS/NOWS

Mount Carmel Perinatal Conference



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