

Oklahoma Society of Health-System Pharmacists

Advancing and supporting the professional practice of
pharmacy in Oklahoma health-systems

Summer 2024 Newsletter



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oklahomashp@gmail.com



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SCHOLARSHIP & AWARDS

Committee Report

Third Year Student Scholarships

The cost of attending pharmacy school is now over \$25,000 a year, requiring many students to take a substantial amount of loans at today's high market rates to get through school. The OSHP third year \$2,000 scholarships are awarded to one applicant from each college of pharmacy. This year's recipients are Emilie Chan from the University of Oklahoma and Sally Chang from Southwestern Oklahoma State University.

Emilie Chan is involved in multiple OU student organizations on campus. She has served the sOSHP organization as P1 liaison, vice president and president. She has attended local and regional meetings and participated in student chapter public service activities. Emilie works as an intern at St. Anthony Hospital in OKC with a glowing reference letter from her supervisor. She is planning on completing residency training following graduation and currently is interested in critical care or emergency medicine.

Sally Chang participates in the Dean's Council as well as various student organizations at SWOSU. She has served as the legislative chair and secretary of sOSHP. She has been involved in numerous service activities both within and outside the college. Sally works as a lab teaching assistant for the pharmaceutical care lab 4 course at SWOSU. After 5 years at Walgreens, she became an intern at the Select Specialty Hospital in Tulsa and has enjoyed the opportunity to be more actively involved in patient care activities and experience the wide variety of opportunities available in the realm of hospital pharmacy.

Senior Student Awards

Recipients of the OSHP Senior Student Awards were chosen by faculty committees at the colleges of pharmacy. The students selected to receive these awards are Brian Lee from the University of Oklahoma and Boma Legg-Jack from Southwestern Oklahoma State University.

Continuing Excellence Awards

There were two applications submitted for committee review. Applicants must report activity in three areas: Pharmacist-to-pharmacist activities, participation in programs or activities with health professionals, patients, or the public, and continued professional development requiring completion of at least 30 hours of CE during the past year. This year there are two award recipients: Ashley DeVaughan Circles from the Indian Health Services and Jeremy L. Johnson from Southwestern Oklahoma State University and OSU Center for Health Sciences & Medical Center in Tulsa.

Ashley DeVaughan Circles (Indian Health Service) is a clinical staff pharmacist at the Lawton Indian Hospital. Her pharmacist-to-pharmacist activities include precepting IPPE & APPE students, serving as OSHP Eastern District Chair and Programming Committee Chair, and presenting posters at the OKC Area IHS Meeting and ASHP Midyear Meeting. Her pharmacist-to-professional/provider/patient activities include presenting at SWOSU COP lunch and learns and serving on the Dean search committee. In addition to presenting lectures and educational in-services to the Choctaw Nation over Hepatitis C, she has provided nursing/provider lectures and served on the antibiotic and opioid stewardship committees. LCDR DeVaughan Circles is a life-long learner. It is a fair statement to say that she does enough annual continuing pharmacy education to get an entire room relicensed.

Jeremy L. Johnson (SWOSU COP & OSUHSC) has been very active in publications and poster presentations with SWOSU students and OSUHSC pharmacy residents at local, state, and national meetings. In addition, he is a frequent speaker at various meetings, focusing on diabetes and other metabolic disorders. He serves as a reviewer for national journals, a preceptor for the OSU residency programs and a mentor for students seeking residency positions. Dr. Johnson also teaches in the OSU Physicians Assistants curriculum and has done multiple outreach activities with high school students, encouraging them to explore pharmacy as a career. He also served as the OSHP delegate to the ASHP House of Delegates last year.

Sylvia J. Martin Outstanding Technician Award

OSHP solicited nominations for the Sylvia J. Martin Outstanding Technician Award from all technician and pharmacist members. There were three very qualified nominees and the nominators of those not selected were strongly encouraged to resubmit next year. Cynthia Chism from OU Health in Oklahoma City was selected as the recipient.

Cynthia Chism was nominated by Jimmy Williams and Kathleen Thompson of OU Health in OKC. Cynthia has been a pharmacy technician at OU Medical Center for 42 years. Her nomination called out her dedication, skill, and commitment to the pharmacy department. Cynthia has been involved with dispensing, inventory management, and chemotherapy compounding. She is able to establish an excellent rapport with patients, colleagues, and providers due to her excellent interpersonal skills and empathetic nature.

Pharmacist of the Year Award

This award is OSHP's highest and most prestigious recognition. Recipients are selected based on their contribution to pharmacy programs, cooperation with the healthcare team, and service to the profession and community. Congratulations to Alice Kirkpatrick, OU College of Pharmacy faculty and coordinator of experiential education, on receiving this award at the 2024 Annual Meeting.

50:50 Scholarship Fund Raffle

The 50:50 Scholarship Fund Raffle raised \$600 at the 2023 Fall Meeting and \$1,200 at the 2024 Annual Meeting. Winners of both the fall and annual meeting raffles donated their share to the scholarship fund.

**Thank you to these
individuals for their
contribution to the
Scholarship & Awards
Committee!**

| | |
|-------------------|--|
| Chair | Barry J. Gales |
| Board Liaison | Randy Steers |
| Committee Members | Teresa Cooper, Tiffany Kessler, Cathy May, Michele Splinter, Cheri Walker & Nancy Williams |

SWOSU sOSHP 2023-2024 Chapter Report

Faculty Advisors: Tiffany Kessler, Pharm.D. and Nancy Williams, Pharm.D.

Our Southwestern Oklahoma State University OSHP Student Chapter has had a successful year filled with many great activities and events. Each year, we have various guest speakers, conduct the local Clinical Skills Competition, host membership drives, and participate in community service and professional development projects. This year, we also focused on increasing membership and student involvement.

As our college has two admittance dates (fall and spring), we conducted membership drives at the beginning of both semesters to share information about sOSHP and OSHP, including the benefits they offer future health-system pharmacists as they are completing school. We discussed available online resources and presented ways in which student pharmacists can be involved in the school and state chapters and future networking opportunities.

Our student chapter hosted a variety of guest speakers throughout this year. We were able to have a couple visit us on SWOSU's campus while others communicated through Zoom. In October 2023, Dr. Mark Gales held a Zoom meeting to provide information on the annual Clinical Skills Competition hosted by our chapter. He explained the process to prospective participants along with tips to ensure competition success. In November 2023, we were able to speak with OSHP President, Dr. Randy Steers, about the Practice Advancement Initiative and how to utilize aspects of it to promote better patient care.

At the end of October 2023, we hosted the annual SWOSU-ASHP Clinical Skills Local Competition where eight teams participated. The entire competition was conducted virtually over two days. The top four teams

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partook in round 2's oral presentations. Our local winners, Chaney Freese and Abigail Kliewer-Mills (both P4.2s), represented our student chapter at the national competition during the ASHP Midyear Clinical Meeting in December 2023 in Anaheim, CA.

Our student chapter held a fundraiser where we sold SWOSU College of Pharmacy sweatshirts. Our community service project, held in late November to early December 2023, was a winter clothes drive for the Mission House in Clinton, OK. Our SWOSU student chapter of OSHP has had an eventful year, and we hope to grow in our efforts in the coming years.

| Officers | Fall 2023 | Spring 2024 |
|-----------------|----------------|------------------|
| President | Megan Presley | Asmau Murtala |
| President-Elect | Asmau Murtala | Brayden Ferguson |
| Secretary | Sally Chang | Amanda Favalora |
| Treasurer | Lyly Van | Megan Presley |
| Historian | Kristen Norris | Kristen Norris |
| Fundraising | Desmund Richey | Kristen Norris |
| Legislative | N/A | Sally Chang |

OU sOSHP 2023-2024 Chapter Report

Faculty Advisors: Corey Guidry, Pharm.D., BCPS and Jordan Fuller, Pharm.D., MBA, BCPS, BCCCP

Meetings and Events

Prior to the fall semester, the student officers of the sOSHP OU chapter met together to plan for the year. We discussed meeting plans, service ideas, and potential fundraisers. Our first meeting was in September 2023 where chapter president, Emilie Chan, introduced the purpose and goals of sOSHP to potential members. Faculty advisors, Jordan Fuller and Corey Guidry, spoke to students about the benefits of joining sOSHP, OSHP, and ASHP. The OSHP chapter gave out two free student memberships and we played bingo to pick the winners.

In October 2023, four teams of two students participated in ASHP's Clinical Skills Competition. The top three teams presented to faculty, who served as judges. The winners of the local competition were Maria Tadros and Kavita Patel. They represented OU College of Pharmacy for the national competition at ASHP Midyear 2023. Our general meeting was a residency information session in which we partnered with OU Pediatric Pharmacy Student Association (PPSA). The current OU PGY1 and PGY2 residents came and spoke to students about residency, tips for success, and general advice for pharmacy school. Lastly, the sOSHP chapter held a curriculum vitae (CV) review for P3 and P4 students. Students were encouraged to bring copies of their current CV and get it personally reviewed by faculty and residents.

Our November meeting focused on wellness and resilience. Chapter vice president, Braydon Moore, reached out to OUHSC counseling services for a guest speaker. Dr. Craig Cruzan spoke to students about imposter

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syndrome. He also provided external resources to help students with stress relievers and ways to deal with imposter syndrome. In collaboration with PPSA and clinical faculty, we hosted a Student Research Day. This event allowed students, residents, and graduate students to showcase research projects that they are working on or have recently completed. This allowed students to gain experience in presentations prior to conferences.

For the 2024 spring semester, we hosted Dr. Atra Mouser who spoke to students about pharmacy administration and leadership residency programs. She focused on leadership roles in pharmacy and tips for success. We will also hold our annual clinical pharmacist panel in March 2024 where we invite clinical pharmacists from health-systems around the OKC area to speak to students about their specialties. This is a great opportunity for students to gain insight on pharmacy specialties and receive advice for their pharmacy career. Lastly, we will have our student officer transitions for the upcoming school year.

OSHP and ASHP

In addition to being a sOSHP member, students have the opportunity for dual membership with OSHP. We recommended the benefit of having dual membership at the first meeting. Many student officers and student members have attended monthly district meetings, residency showcases, and semester meetings with OSHP. Additionally, chapter president, Emilie Chan, along with OSHP members, volunteered at the Regional Food Bank in November 2023. Two members represented OU at the ASHP national clinical skills competition. Also, past-president, Amber Woolley, represented the OU chapter at the Midyear Student Society Showcase 2023. She focused on the chapter's efforts at City Rescue Mission, a community service event hosted by OU College of Pharmacy.

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Service

In collaboration with other student organizations, sOSHP participated in a community service event at the City Rescue Mission. The sOSHP members hosted a smoking cessation booth for patients, giving us the opportunity to educate patients on the importance of smoking cessation and provide resources, such as the OK Helpline. This event allows student members to gain confidence in their counseling skills and direct patient care.

Officers

2023-2024

President

Emilie Chan (P3)

Vice President

Braydon Moore (P3)

Secretary

Jordan Rahilly (P2)

Treasurer

Taylor McLarty (P3)

Historian

Aryn Hammer (P2)

Service

Hunterlyn Alderson (P2)

8th Annual Oklahoma Pharmacy Residency Research Conference

The 8th Annual Oklahoma Residency Research Conference was held in Saint Francis Health System in Tulsa, OK. Thirty-two residents from all around Oklahoma presented their research projects. Those in attendance provided presentation feedback. Prior to the event, six research award finalists were selected based on their submitted research protocols and abstracts. We were proud to learn about all the exciting research being done by our residents to better understand and improve patient care.



Research Award Finalists

Drs. David Foote, Nichole Krug, Avery Parman, Jamie Knisley, Tristan Millican, and Natasha Orcutt

PGY2 Award Recipient

Dr. Avery Parman, PGY2 Pediatric Care Resident (OU College of Pharmacy), received the PGY2 award for her project, "Resistance with Inhaled Tobramycin for Treatment or Prevention of Ventilator Associated Tracheitis in Mechanically Ventilated Neonates and Children without Cystic Fibrosis".



OK PHARMACY RESIDENCY RESEARCH CONFERENCE

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PGY1 Award Recipients

The PGY1 award recipients were Dr. David Foote (OU College of Pharmacy) for his project, "Montelukast De-Prescribing in Outpatient Specialty Clinics: A Cross-Sectional Study" and Dr. Natasha Orcutt (Oklahoma City Veterans Affairs Health Care System) for her project, "Management of Heart Failure with Reduced Ejection Fraction Post Hospitalization at the OKC

Veterans Affairs Health Care System."

Development Session

The development session on "Pedagogy, Personalities, and Pedantic Pickles" was presented by Meri Hix, Pharm.D., BCPS. Dr. Hix is a clinical pharmacy specialist at SSM Health St. Anthony Hospital and an associate professor of pharmacy practice at SWOSU College of Pharmacy.



RESIDENT CLINICAL PEARLS

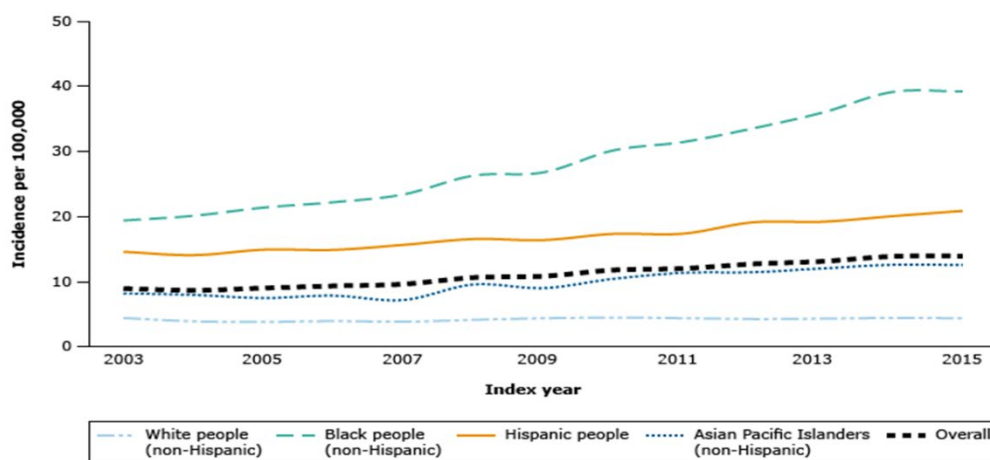
Type 2 Diabetes: A Pediatric Disease? Management of Type 2 DM in Children and Adolescents

Caleb Taylor, Pharm.D.

**Walgreens/SWOSU PGY1 Community-Based Pharmacy Resident
Oklahoma City, OK**

When pediatric diabetes is discussed, the first thing that typically comes to mind is type 1 diabetes mellitus (DM). However, type 2 DM is becoming a more frequent diagnosis for pediatric patients. From 2002 to 2014, the incidence of type 2 DM among U.S. youth aged 10 to 19 years increased from 9 per 100,000 to 13.8 per 100,000, and this number is only expected to increase.¹ In the past, 1 out of 5 diagnoses of DM in pediatric patients was type 2; currently, that ratio has increased to 1 out of 3.¹ In addition, the incidence of type 2 DM is significantly higher in some ethnic minority groups, including non-Hispanic Black and Hispanic communities (Figure 1).²

Figure 1: Trends in incidence of type 2 diabetes in United States youth (10 to 19 years)²



Reproduced from: National Diabetes Statistics Report 2020: Estimates of Diabetes and Its Burden in the United States. US Centers for Disease Control and Prevention. Available at: <https://www.cdc.gov/diabetes/pdfs/data/statistics/national-diabetes-statistics-report.pdf> (Accessed on July 30, 2021).

RESIDENT CLINICAL PEARLS

Type 2 DM tends to progress more aggressively in children and adolescents, putting these individuals at an increased risk for complications, such as hypertension, nerve damage, and organ damage.³ These complications often start in early adulthood and escalate rapidly, highlighting the importance of identifying and treating DM early.³ Some children and adolescents with type 2 DM are diagnosed during an asymptomatic screening, while approximately 60% of children and adolescents with type 2 DM are symptomatic at presentation.² In addition to the typical symptoms of hyperglycemia, other symptoms, such as frequent fungal skin infections, severe vulvovaginitis in adolescent girls, or tinea cruris in adolescent males, may be the chief complaint.^{2,4} While rare, adolescents with type 2 DM are more likely than adults to present with diabetic ketoacidosis (5 – 10% of cases). Of note, these individuals are usually members of ethnic minority groups.^{2,5} Therefore, pancreatic autoantibodies should be tested to rule out adolescent onset type 1 DM, which can present similarly to type 2 DM during early onset.⁴ Risk factors for type 2 DM in pediatric patients include some of the same as the risk factors for adults (non-white ethnicity, obesity, mother with gestational diabetes, first degree relative with type 2 DM), as well as some other risk factors, including low birth weight and female sex.²

The management of youth-onset type 2 DM should include lifestyle modifications, self-care education and support, and pharmacologic treatment. It is especially important to customize lifestyle modifications to not only be culturally appropriate, but sustainable as the patient transitions into adulthood.⁵ Patients with type 2 DM are often overweight or obese, and thus changes that focus on weight reduction are key. Currently, the American Diabetes Association Standards of Diabetes Care-2023 recommend a 7-10% reduction in excess weight and at least 60 minutes of physical activity per day, with bone/muscle strength training at least three days a week.⁴ Dietary modifications should focus on switching from calorie-rich, nutrient-poor foods (such as sweetened beverages, fried foods, and candy) to nutrient rich, lower calorie foods (such as fruits, vegetables, and grains).⁶ In patients with only slightly elevated glycosylated hemoglobin (A1C) (<8.5%), this may be enough to avoid pharmacologic therapy. If this

RESIDENT CLINICAL PEARLS

doesn't sufficiently reduce A1C or if the patient is symptomatic, pharmacologic therapy may need to be implemented.

Pharmacologic treatment

Similarly for adults, the initial recommended pharmacologic treatment is metformin, which is typically started at 500-1000 mg daily (either once daily or split between 2 doses) and increased every one to two weeks as tolerated. Clinical response is often seen at doses at or above 1,500 mg daily and metformin may be given at doses up to 1,000 mg twice daily.⁴ If the patient's A1C is 8.5% or greater with no acidosis (with or without ketosis), basal insulin is initiated at a dose of 0.5 units/kg/day and titrated up as needed.^{4,6} If glycemic targets (pediatric A1C goal: less than 7.5%⁴) are not being met with metformin (with or without long-acting insulin), it may be time to add other type 2 DM drugs with approval for use in pediatric patients. Three glucagon-like peptide-1 receptor (GLP-1) agonists, liraglutide (Victoza-Novo Nordisk), dulaglutide (Trulicity-Eli Lilly), and extended-release exenatide (Bydureon Bcise-AstraZeneca) are all approved as an adjunct to diet and exercise for patients aged 10 years and older with type 2 DM.⁷ More recently, in June 2023, a new class of medication, sodium-glucose co-transporter 2 (SGLT-2) inhibitor [empagliflozin (Jardiance-Boehringer Ingelheim) and empagliflozin/metformin (Synjardy-Boehringer Ingelheim)] gained approval for use in children ages 10 years and older, providing additional non-injectable treatment options beyond metformin.⁸ Currently, no dipeptidyl peptidase 4 (DPP-4) inhibitor has been approved for the management of type 2 DM in children or adolescents. Metabolic surgery (such as gastric bypass) may be considered for adolescents if non-pharmacologic and pharmacologic methods both fail, the patient's BMI remains greater than 35 kg/m², and the patient is experiencing a persistently elevated A1C or complicating comorbidities.⁶

Comorbidities

Children and adolescents with type 2 DM often present with comorbidities that contribute to chronic cardiovascular complications, such as

hypertension (defined as blood pressure (BP) consistently at the 95th percentile or higher for age, sex, and height or, in adolescents aged 13 years or older, with a BP of at least 130/80 mmHg) and dyslipidemia (defined as a LDL-C at least 100 mg/dL, HDL less than 35 mg/dL, and/or TG more than 150 mg/dL).^{5,8} While non-pharmacologic interventions including salt restriction, physical activity, optimized diets, and weight management may be initially considered for children and adolescents with an elevated BP (defined as between 120/80 to 129/80 mmHg or 85th to 95th percentile for children younger than 13 years), individuals with confirmed primary hypertension should be immediately initiated on pharmacologic therapy in addition to non-pharmacologic interventions upon diagnosis.¹⁰ Agents generally recommended for initial therapy for pediatric use include angiotensin-converting enzyme (ACE) inhibitors (benazepril, enalapril, fosinopril, and lisinopril) or angiotensin receptor blockers (ARB) (candesartan, losartan, olmesartan, and valsartan).^{8,9} Children and adolescents with abnormal lipid concentrations should be initiated on non-pharmacologic interventions and monitored for six months. If after six months, the LDL-C remains above 130 mg/dL, a lipid-lowering medication, preferably a statin (atorvastatin, lovastatin, pravastatin, simvastatin, or rosuvastatin), should be initiated.⁸

Type 2 DM in children and adolescents is a growing issue that pharmacists are in a key position to address. As vital members of the diabetes care team, pharmacists educate patients, caregivers and providers, ultimately allowing them to better understand how to manage type 2 DM and prepare for the transition to adulthood and navigate complicated medication regimens.

References

1. Divers J, Mayer-Davis EJ, Lawrence JM, et al. Trends in incidence of type 1 and type 2 diabetes among youths - selected counties and Indian Reservations, United States, 2002-2015. *MMWR Morb Mortal Wkly Rep* 2020;69:161-5. Published 2020 Feb 14. doi:10.15585/mmwr.mm6906a3

RESIDENT CLINICAL PEARLS

2. Laffel L, Svoren B. Epidemiology, presentation, and diagnosis of type 2 diabetes mellitus in children and adolescents. In: Post TW, ed. UpToDate; 2023 Accessed November 4, 2023. <https://www.uptodate.com/contents/epidemiology-presentation-and-diagnosis-of-type-2-diabetes-mellitus-in-children-and-adolescents>
3. TODAY Study Group, Bjornstad P, Drews KL, et al. Long-term complications in youth-onset type 2 diabetes. *N Engl J Med* 2021;385:416-26. doi:10.1056/NEJMoa2100165
4. Tillotson CV, Bowden SA, Boktor SW. Pediatric type 2 diabetes. [Updated 2023 Feb 26]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2023 Jan-. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK431046/>
5. ElSayed NA, Aleppo G, Aroda VR, et al. 14. Children and adolescents: standards of care in diabetes-2023. *Diabetes Care* 2023;46(Suppl 1):S230-53. doi:10.2337/dc23-S014
6. Laffel L, Svoren B. Management of type 2 diabetes mellitus in children and adolescents. In: Post TW, ed. UpToDate; 2023 Accessed October 21, 2023. www.uptodate.com/contents/management-of-type-2-diabetes-mellitus-in-children-and-adolescents
7. FDA Press Release. FDA approves new class of medicines to treat pediatric type 2 diabetes. US Food and Drug Administration. Accessed November 4, 2023. <https://www.fda.gov/news-events/press-announcements/fda-approves-new-class-medicines-treat-pediatric-type-2-diabetes>
8. Laffel L, Svoren B. Chronic complications and screening in children and adolescents with type 2 diabetes mellitus. In: Post TW, ed. UpToDate; 2023 Accessed November 4, 2023. <https://www.uptodate.com/contents/chronic-complications-and-screening-in-children-and-adolescents-with-type-2-diabetes-mellitus>
9. Mattoo TK. Nonemergent treatment of hypertension in children and adolescents. In: Post TW, ed. UpToDate; 2023 Accessed November 4, 2023. <https://www.uptodate.com/contents/nonemergent-treatment-of-hypertension-in-children-and-adolescents>

STUDENT CLINICAL PEARLS

Drug Information Question: Is Benztropine Still the Treatment of Choice for Extrapyramidal Symptoms, and How Long Should a Patient Remain on it?

Amber Woolley, Pharm.D. Candidate
University of Oklahoma College of Pharmacy
Oklahoma City, OK

Preceptor: Emily Gray, Pharm.D., BCPP, Laureate Psychiatric Hospital, Tulsa

Benztropine is FDA-approved for the acute treatment of drug-induced extrapyramidal symptoms.¹ Extrapyramidal symptoms (EPS) are movement disorders often associated with antipsychotic medications and which can be very bothersome, potentially harmful, and may jeopardize patient adherence to antipsychotic therapy if left untreated. However, as an anticholinergic agent, benztropine also carries the potential for significant side effects, including blurred vision, constipation, tachycardia, urinary retention, and impairment in memory and cognition.¹ These side effects are particularly worrisome in elderly patients. Therefore, it bears questioning whether benztropine is the best choice for treating EPS, and, if its use is deemed necessary, what is an appropriate duration of treatment. Unfortunately, the evidence for the best agents to use for EPS is somewhat limited and quite dated. Recent review articles attempting to formulate treatment recommendations often cite very small studies conducted in the 1970s and 1980s. Even so, there are some meaningful conclusions that we can glean to help guide therapy.

Determining the type of EPS the patient is experiencing is an important first step for choosing appropriate treatment. Some forms of EPS are categorized as acute syndromes (akathisia, Parkinsonism, and dystonia) which are generally reversible, while tardive dyskinesia is a delayed type of EPS that may become irreversible.² When possible, dose reduction or withdrawal of the offending medication is the simplest step for resolving or

mitigating acute EPS.² However, this may not be a feasible option for patients actively experiencing psychotic symptoms. Another option is to switch to a different antipsychotic with a lower propensity to cause EPS, such as clozapine or quetiapine.³

Akathisia is a form of acute EPS that is characterized by restlessness and pacing.² The 2018 treatment guidelines for antipsychotic-induced akathisia in the Canadian Journal of Psychiatry⁴ recommend against the routine use of anticholinergic medications to treat akathisia, owing to the limited available evidence and risk of adverse effects. In the case of benztropine specifically, these guidelines identified only two small studies^{5,6} (N=28, 6) from 1993 that found a significant benefit of benztropine compared to placebo, both of which the authors judged to have a high risk of bias. Furthermore, these guidelines identified two additional very small trials (N=17, 44) that found benztropine to be less effective than propranolol and roughly similar in effectiveness to amantadine. These guidelines instead recommend the use of propranolol for antipsychotic-induced akathisia, or mirtazapine if beta blockers are contraindicated for a given patient.⁴

Drug-induced Parkinsonism (DIP) is a type of acute EPS characterized by tremor, skeletal muscle rigidity, and/or bradykinesia.² There are no recent developments in treatment recommendations for DIP. A 1994 review in the journal *Pharmacotherapy* states that the anticholinergic agents benztropine, trihexyphenidyl, diphenhydramine, biperiden, and procyclidine are all appropriate options to treat rigidity with DIP, with no differences in efficacy.⁷ A 1997 review in *American Journal of Health-System Pharmacy* states that anticholinergics are an effective option for DIP, with no preference for a particular agent, noting only that benztropine has the advantage of once daily administration.⁸ Both reviews mention amantadine as an alternative to anticholinergics, which is similarly effective and may be better tolerated.^{7,8}

The final category of acute EPS, acute dystonia, is characterized by sustained abnormal postures and muscle spasms, especially in the head

and/or neck.² Several review articles⁷⁻¹⁰ list benztropine, trihexyphenidyl, and diphenhydramine as potential options to treat dystonia, with benztropine and diphenhydramine highlighted as useful options for dystonia with laryngospasm, which is potentially life-threatening and necessitates rapid administration via the parenteral route. There do not appear to be any head-to-head comparisons of agents used for dystonia.

Tardive dyskinesia is a special case of EPS. A 2018 Cochrane Review¹⁰ identified only 2 studies encompassing a total of 30 patients that evaluated anticholinergic drugs in tardive dyskinesia. No strong conclusions could be drawn about either the effectiveness of anticholinergic drugs to treat tardive dyskinesia, or the effectiveness of withdrawing anticholinergic medications to prevent or mitigate tardive dyskinesia. On the basis of these findings, the tardive dyskinesia guidelines from the Canadian Journal of Psychiatry¹¹ state that providers may consider discontinuing anticholinergics in patients with tardive dyskinesia with the caveat that the evidence is limited and the reminder that withdrawal of anticholinergic agents could exacerbate underlying Parkinsonism. This is in opposition to the conventional wisdom that tardive dyskinesia is exacerbated by anticholinergic agents, requiring them to be withdrawn and avoided.

Finally, the proper duration of benztropine/anticholinergic therapy for antipsychotic-induced EPS is controversial and has not been directly assessed in a systematic way. Higher serum anticholinergic activity has been correlated with poorer cognitive function in patients with schizophrenia,¹² which is particularly concerning because cognitive impairment is a feature of schizophrenia itself. In the case of acute dystonia specifically, it is recommended that anticholinergic therapy be continued for prophylaxis after the initial episode, though the suggested duration ranges from three days to four weeks.^{7,8} Otherwise, a timeline for withdrawing anticholinergic agents is not well established. It has been suggested that three months without EPS is an appropriate time to consider tapering and discontinuing an anticholinergic, though it is not clear what evidence that specific timeframe is based on.¹³ That said, there is limited

but growing evidence in recent years that anticholinergic agents can often be safely withdrawn or dose-reduced without return of EPS and with subsequent improvements in cognition when tapered slowly.¹³⁻¹⁵ Further study is needed to better refine the appropriate duration of benztropine and other anticholinergics for antipsychotic-induced EPS.

References

1. Benztropine Oral. Facts and Comparisons eAnswers, Drug Facts and Comparisons. Ohio: Wolters Kluwer Clinical Drug Information, Inc.; January 24, 2023.
2. Divac N, Prostran M, Jakovcevski I, et al. Second-generation antipsychotics and extrapyramidal adverse effects. *Biomed Res Int* 2014;656370. doi:10.1155/2014/656370
3. Farah A. Atypicality of atypical antipsychotics. *Prim Care Companion J Clin Psychiatry* 2005;7:268-74. doi:10.4088/pcc.v07n0602
4. Pringsheim T, Gardner D, Addington D, et al. The assessment and treatment of antipsychotic-induced akathisia. *Can J Psychiatry* 2018; 63:719-29. doi:10.1177/0706743718760288
5. Adler LA, Peselow E, Rosenthal M, et al. A controlled comparison of the effects of propranolol, benztropine, and placebo on akathisia: an interim analysis. *Psychopharmacol Bull* 1993;29:283-6.
6. Sachdev P, Loneragan C. Intravenous benztropine and propranolol challenges in acute neuroleptic-induced akathisia. *Clin Neuropharmacol* 1993;16:324-31. doi:10.1097/00002826-199308000-00004
7. Tonda ME, Guthrie SK. Treatment of acute neuroleptic-induced movement disorders. *Pharmacotherapy* 1994;14:543-60.
8. Holloman LC, Marder SR. Management of acute extrapyramidal effects induced by antipsychotic drugs. *Am J Health Syst Pharm* 1997;54:2461-77. doi:10.1093/ajhp/54.21.2461
9. Cloud LJ, Jinnah HA. Treatment strategies for dystonia. *Expert Opin Pharmacother* 2010;11:5-15. doi:10.1517/14656560903426171
10. Bergman H, Soares-Weiser K. Anticholinergic medication for antipsychotic-induced tardive dyskinesia. *Cochrane Database Syst Rev* 2018;1:CD000204. doi:10.1002/14651858.CD000204.pub2

11. Ricciardi L, Pringsheim T, Barnes TRE, et al. Treatment recommendations for tardive dyskinesia. *Can J Psychiatry* 2019;64:388-99. doi:10.1177/0706743719828968
12. Vinogradov S, Fisher M, Warm H, et al. The cognitive cost of anticholinergic burden: decreased response to cognitive training in schizophrenia. *Am J Psychiatry*. 2009;166:1055-62. doi:10.1176/appi.ajp.2009.09010017
13. Desmarais JE, Beauclair L, Margolese HC. Anticholinergics in the era of atypical antipsychotics: short-term or long-term treatment? *J Psychopharmacol* 2012;26:1167-74. doi:10.1177/0269881112447988
14. Lupu AM, MacCamy KL, Gannon JM, et al. Less is more: Deprescribing anticholinergic medications in persons with severe mental illness. *Ann Clin Psychiatry* 2021;33:80-92. doi:10.12788/acp.0019
15. Desmarais JE, Beauclair L, Annable L, et al. Effects of discontinuing anticholinergic treatment on movement disorders, cognition and psychopathology in patients with schizophrenia. *Ther Adv Psychopharmacol* 2014;4:257-67. doi:10.1177/2045125314553611

2023-2024 Oklahoma Pharmacy Residents

Seth Bartlett
Ashley Benedict
Jessica Bird
Michael Ray Brown
Chrystal Cardoza
Lauren Chastain
Sean Coyne
Destiny Daniel
Kennedy Drew
Cole Eichelberger
Taylor Fallin
David Foote
John Luke Garber
Andrea Gillette
Katie Griffin
Eugene Hernandez
Edaris Rodriguez Izquierdo
Jamie Knisley
Nichole Krug

Monica Le
Alyssa Loffin
Christopher Mariano
Tristan Millican
Walker Mink
Andrea Nguyen
Natasha Orcutt
Avery Parman
Jordan Ruffin
Kyla Sampson
Joshua J. Schultz
Hunter Stout
Tara Sullivan
Caleb Taylor
Allison Tiemann
Iab Vang
Mitchell Welch
Kaci Lynn White
Angela Yu

2023-24 OKLAHOMA PHARMACY RESIDENTS

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| | |
|-------------------------------|---|
| Name | Seth Bartlett, Pharm.D. |
| Email Address | sethbartlettpharmd@gmail.com |
| Current Position | PGY1 Pharmacy Resident |
| Current Institution | Chickasaw Nation Department of Health, Ada, OK |
| Pharmacy School | Southwestern Oklahoma State University College of Pharmacy, Weatherford, OK |
| Other College | |
| Family, Pets, Hobbies, etc. | My wife and I have 1 daughter and 1 on the way. I enjoy spending time with family and friends, playing chess and fishing in my free time. |
| Why I am Doing a Residency | To develop my clinical skills and gain a broader view of our health system. |
| One Interesting Fact About Me | I used to run a chess club in Ada. |

2023-24 OKLAHOMA PHARMACY RESIDENTS

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|-------------------------------|--|
| Name | Ashley Benedict, Pharm.D. |
| Email Address | ashley-benedict@ouhsc.edu |
| Current Position | PGY1 Pharmacy Resident |
| Current Institution | University of Oklahoma College of Pharmacy/OU Health, Oklahoma City, OK |
| Pharmacy School | University of Oklahoma College of Pharmacy; Oklahoma City, OK |
| Other College | University of Oklahoma; Zoology; Norman, OK |
| Family, Pets, Hobbies, etc. | I enjoy spending time with my husband, Zach, and our 5-year-old daughter, Bonnie. I like to travel, try new restaurants, and make things on my Cricut machine! |
| Why I am Doing a Residency | I chose to do a residency to further expand my clinical knowledge base and become a more proficient, well-rounded clinical pharmacist. |
| One Interesting Fact About Me | I am expecting a baby girl in March! |



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|-------------------------------|--|
| Name | Jessica Bird, Pharm.D., B.S. |
| Email Address | jessica.bird@hillcrest.com |
| Current Position | PGY1 Pharmacy Resident |
| Current Institution | Hillcrest Medical Center, Tulsa, OK |
| Pharmacy School | University of Texas College of Pharmacy, Austin, TX |
| Other College | University of Texas at Tyler, Tyler, TX |
| Family, Pets, Hobbies, etc. | I am married and have a dog named Bear. I am expecting my first child, a baby girl, in the beginning of July |
| Why I am Doing a Residency | I am doing a residency to further my training as a pharmacist so I can work as a clinical pharmacist in the future |
| One Interesting Fact About Me | My husband's video with his drone went viral on TikTok and became one of the top 10 TikToks of all time |

2023-24 OKLAHOMA PHARMACY RESIDENTS

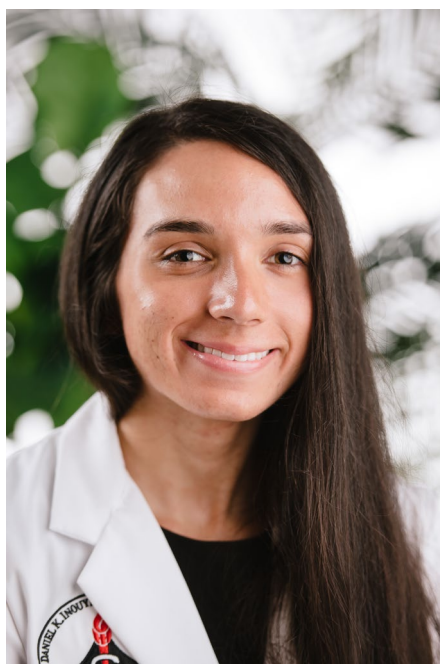
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|----------------------------------|--|
| Name | Michael Ray Brown, Pharm.D. |
| Email Address | michael.brown36@va.gov |
| Current Position | PGY1 Pharmacy Resident |
| Current Institution | VA Health Care System, Oklahoma City, OK |
| Pharmacy School | University of Oklahoma College of Pharmacy, Oklahoma City, OK |
| Family, Pets, Hobbies, etc. | Between my fiancé and me, we have five medium to large-sized dogs whom we love dearly. I enjoy anything fantasy and adventure-related, whether that be listening to audiobooks, playing video and/or board games, or just enjoying a good film in the theater. |
| Why I am Doing a Residency | I am doing a residency in order to become an ambulatory care pharmacist. |
| One Interesting Fact About Me | I am a prior infantry Marine who served during Operation Enduring Freedom in Afghanistan. |

2023-24 OKLAHOMA PHARMACY RESIDENTS

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|-------------------------------|--|
| Name | Chrystal Cardoza, Pharm.D. |
| Email Address | cacardoza@nrh-ok.com |
| Current Position | PGY1 Pharmacy Resident |
| Current Institution | Norman Regional Health System, Norman, OK |
| Pharmacy School | Daniel K. Inouye College of Pharmacy, Hilo, Hawaii |
| Other College | |
| Family, Pets, Hobbies, etc. | My hobbies are going to church, traveling, and exploring western culture. |
| Why I am Doing a Residency | I am passionate about acute care and I wanted the opportunity to learn from great mentors. |
| One Interesting Fact About Me | I am a huge Tom Brady fan. |

2023-24 OKLAHOMA PHARMACY RESIDENTS

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|-------------------------------|---|
| Name | Lauren Chastain, Pharm.D. |
| Email Address | lauren.chastain@ihs.gov |
| Current Position | PGY1 Pharmacy Resident |
| Current Institution | Claremore Indian Hospital, Claremore, OK |
| Pharmacy School | Southwestern Oklahoma State University, Weatherford, OK |
| Other Colleges | B.S. in Biochemistry from Northeastern State University, Tahlequah, OK |
| Family, Pets, Hobbies, etc. | My professional interests include infectious disease, ambulatory care, and pain management. Outside of residency, I enjoy traveling, attending concerts and festivals, and spending time with my husband, family, and pets. |
| Why I am Doing a Residency | I chose to pursue a residency to develop my leadership skills, gain confidence in my clinical abilities, and become a more well-rounded pharmacist. |
| One Interesting Fact About Me | One of my favorite things to do in the springtime is hunt for wild onions. My family and I go a few times every year and make a whole day of it! We take a picnic and have lunch in the woods and then spend the rest of the afternoon digging up the onions and washing them off in the creek. |

2023-24 OKLAHOMA PHARMACY RESIDENTS

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|-------------------------------|---|
| Name | Sean Coyne, Pharm.D. |
| Email Address | srcoyne@saintfrancis.com |
| Current Position | PGY1 Pharmacy Resident |
| Current Institution | The Children's Hospital at Saint Francis, Tulsa, OK |
| Pharmacy School | Massachusetts College of Pharmacy and Health, Boston, MA |
| Family, Pets, Hobbies, etc. | I have a twin sister. I enjoy being outside, board games, escape rooms, and baking. |
| Why I am Doing a Residency | To further my clinical knowledge and become a more confident pharmacist |
| One Interesting Fact About Me | I was on swim team for 14 years |

2023-24 OKLAHOMA PHARMACY RESIDENTS

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|-------------------------------|---|
| Name | Destiny Daniel, Pharm.D. |
| Email Address | destiny-matthews@cherokee.org |
| Current Position | PGY1 Pharmacy Resident |
| Current Institution | Cherokee Nation Health Services, Tahlequah, OK |
| Pharmacy School | University of Oklahoma College of Pharmacy, Oklahoma City, OK |
| Other College | B.S. in Biochemistry, Northeastern State University, Tahlequah, OK |
| Family, Pets, Hobbies, etc. | I enjoy running, reading, baking, and spending time with my husband, family, and pets. My husband and I have two goldendoodles and a cat. |
| Why I am Doing a Residency | To expand my clinical knowledge and critical thinking while having the opportunity to provide healthcare services to my tribe and other American Indians. |
| One Interesting Fact About Me | I biked ~1000 miles as part of the Cherokee Nation Remember the Removal Bike Ride program. |

2023-24 OKLAHOMA PHARMACY RESIDENTS

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|-------------------------------|---|
| Name | Kennedy Drew, Pharm.D. |
| Email Address | kennedy.drew@integrishealth.org |
| Current Position | PGY1 Pharmacy Resident |
| Current Institution | INTEGRIS Baptist Medical Center, Oklahoma City, OK |
| Pharmacy School | Regis University School of Pharmacy: Denver, CO |
| Other College | Bachelors in Cellular Biology, University of Mary-Hardin Baylor, Belton, TX |
| Family, Pets, Hobbies, etc. | I enjoy taking naps with my two dogs. |
| Why I am Doing a Residency | I am doing a residency to gain more experience in the ambulatory care pharmacy setting. My goals are to become a board certified ambulatory care pharmacist and to become a preceptor at a clinic site. |
| One Interesting Fact About Me | My closet is full of black clothing, but my favorite color is pink. |

2023-24 OKLAHOMA PHARMACY RESIDENTS

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|-------------------------------|--|
| Name | Cole Eichelberger, Pharm.D, AAHIVP |
| Email Address | aceichelberger@osumc.net |
| Current Position | PGY2 Internal Medicine Pharmacy Resident |
| Current Institution | Oklahoma State University Medical Center, Tulsa, OK |
| Pharmacy School | Southwestern Oklahoma State University, Weatherford, OK |
| Other College | Southwestern Oklahoma State University |
| PGY1 Residency | Oklahoma State University Medical Center, Tulsa, OK |
| Family, Pets, Hobbies, etc. | I enjoy spending time with my partner, Jackson, and our dog Ellie. When I am not working, you could find me reading, watching television shows, playing the trumpet, hanging out with friends, playing board games, exploring Tulsa, and travelling. |
| Why I am Doing a Residency | Clinical pharmacy is something I'm passionate about. I enjoy working at the top of my license and building on the knowledge I gained in pharmacy school. I hope to one day be board-certified with a career in internal medicine or academia. |
| One Interesting Fact About Me | I am learning how to crochet! |



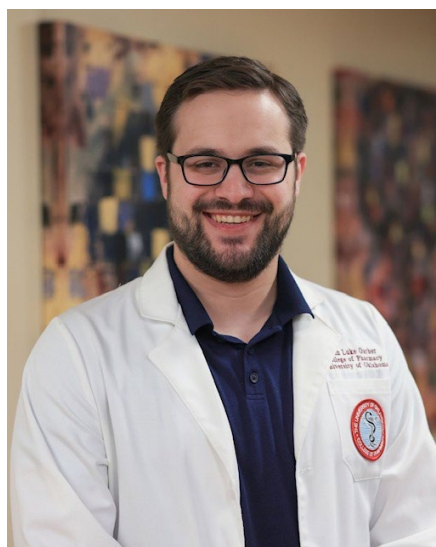
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|-------------------------------|--|
| Name | Taylor Fallin, Pharm.D. |
| Email Address | taylor-fallin@ouhsc.edu |
| Current Position | PGY2 Internal Medicine Pharmacy Resident |
| Current Institution | University of Oklahoma College of Pharmacy, Oklahoma City, OK |
| Pharmacy School | University of Oklahoma College of Pharmacy, Oklahoma City, OK |
| Other College | B.S. in Biochemistry, University of Arkansas, Fayetteville, AR |
| PGY1 Residency | University of Oklahoma College of Pharmacy, Oklahoma City, OK |
| Family, Pets, Hobbies, etc. | I have two Shih Tzus, Gabbie and Millie, who live in Arkansas with my family. My hobbies include cheering on the Hogs (woo pig!) and keeping up with fashion trends. |
| Why I am Doing a Residency | I am doing a residency to further expand my clinical knowledge and training in order to best prepare me for my future as a clinical pharmacist. |
| One Interesting Fact About Me | I love fashion and interior design! |

2023-24 OKLAHOMA PHARMACY RESIDENTS

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|----------------------------------|---|
| Name | David Foote, Pharm.D. |
| Email Address | david-foote@ouhsc.edu |
| Current Position | PGY1 Pharmacy Resident |
| Current Institution | University of Oklahoma College of Pharmacy/OU Health, Oklahoma City, OK |
| Pharmacy School | University of Texas at Tyler Fisch College of Pharmacy, Tyler, TX |
| Other College | University of Texas at Tyler, Tyler, TX |
| Family, Pets, Hobbies, etc. | My family lives in Texas, and I love to spend time with them whenever I can! I enjoy trying new coffee shops, making new coffee drinks, and exploring all the food OKC has to offer. |
| Why I am Doing a Residency | I am completing a PGY-1 residency to continue growing my knowledge and confidence in pharmacy practice. I hope to pursue a position as a faculty member, and feel that additional specialty training will provide me the clinical context and experience to best educate the next generation of pharmacists. |
| One Interesting Fact About Me | I have been to all 50 states! |



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|----------------------------------|--|
| Name | John Luke Garber, Pharm.D. |
| Email Address | garberj01@gmail.com |
| Current Position | PGY1 Pharmacy Resident |
| Current Institution | Norman Regional Health System, Norman, OK |
| Pharmacy School | University of Oklahoma College of Pharmacy, Oklahoma City, OK |
| Other College | Biology, University of Oklahoma, Norman, OK |
| Family, Pets, Hobbies, etc. | I am married to my best friend, Allison Garber. The two of us look forward to sharing many happy years together, and are excited for a new little family member who will be joining us later this summer. |
| Why I am Doing a Residency | I am doing a residency to further develop my skills as a clinical pharmacist, and pursue experiences that will better prepare me to seek a career in ambulatory care. I especially enjoy educating patients on their disease states and medications to help them become better invested in their own medical care. |
| One Interesting Fact About Me | I have a scar from when I was stabbed in the stomach during a sword fight back in my undergrad years. |



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|-------------------------------|--|
| Name | Andrea Gillette, Pharm.D., MBA |
| Email Address | alwinters@cnhsa.com |
| Current Position | PGY2 Pharmacy Resident in Medication Safety |
| Current Institution | Choctaw Nation, Talihina, OK |
| Pharmacy School | Harding University, Searcy, AR |
| Other College | B.S. in Biochemistry, Northeastern State University, Tahlequah, OK |
| PGY-1 Residency | Choctaw Nation, Talihina, OK |
| Family, Pets, Hobbies, etc. | I have two cats, and I bake/decorate cakes for birthdays, weddings, and other special events. |
| Why I am Doing a Residency | To allow myself to work at the top of my license while showcasing what pharmacists can do through our hospital system. |
| One Interesting Fact About Me | I am the first high school graduate in my family. I have since obtained an associate's, a bachelor's, a master's, and a doctorate. |



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|-------------------------------|---|
| Name | Katie Griffin, BBA, Pharm.D. |
| Email Address | katie.griffin@chickasaw.net |
| Current Position | PGY1 Pharmacist Resident |
| Current Institution | Chickasaw Nation Department of Health, Oklahoma City, OK |
| Pharmacy School | University of Oklahoma College of Pharmacy, Oklahoma City, OK |
| Other College | University of Oklahoma Price College of Business, Norman, OK |
| Family, Pets, Hobbies, etc. | I am married with 1 child. I like to read, spend time with family and travel. |
| Why I am Doing a Residency | I decided to pursue a residency because I wanted to sharpen my clinical skills/knowledge. |
| One Interesting Fact About Me | I have never had a job that didn't involve pharmacy. |

2023-24 OKLAHOMA PHARMACY RESIDENTS

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|-------------------------------|---|
| Name | Eugene Hernandez, Pharm.D., BCIDP |
| Email Address | ehernandez@osumc.net |
| Current Position | PGY1 Pharmacy Resident |
| Current Institution | Oklahoma State Medical Center, Tulsa, OK |
| Pharmacy School | Texas Tech University Health Sciences Center School of Pharmacy, Amarillo, TX |
| Other College | Texas Tech University, Lubbock, TX |
| Family, Pets, Hobbies, etc. | My wife's name is Rachel and she is also a pharmacist. We have a corgi named Gatsby. We love traveling, and spending time outdoors |
| Why I am Doing a Residency | To specialize as an infectious diseases pharmacist and get more experience teaching |
| One Interesting Fact About Me | I consider myself ambidextrous. I write, throw a football, and dribble a basketball with my left hand. I shoot a basketball and throw a baseball with my right hand |

2023-24 OKLAHOMA PHARMACY RESIDENTS

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|-------------------------------|---|
| Name | Edaris Rodriguez Izquierdo, Pharm.D. |
| Email Address | edaris.rodriquezizquierdo@ihs.gov |
| Current Position | PGY1 Pharmacy Resident |
| Current Institution | Lawton Indian Hospital, Lawton, OK |
| Pharmacy School | Nova Southeastern University, San Juan, Puerto Rico |
| Other College | University of Puerto Rico Industrial Microbiology Mayaguez, Puerto Rico |
| Family, Pets, Hobbies, etc. | Outdoor activities and visiting new places have always been my passion, providing me with endless opportunities for adventures. |
| Why I am Doing a Residency | I am doing a residency because it provides invaluable hands-on experience and specialized training in Ambulatory Care and Outpatient Pharmacy. This period allows me to refine my skills, gain confidence, and deepen my understanding of my pharmacy career under the guidance of experienced mentors. Ultimately, completing a residency will prepare me for independent practice and contribute to my growth as a competent and skilled professional in the Ambulatory Care field. |
| One Interesting Fact About Me | Since I was a child, I have collected unique magnets from every place I have visited. |

2023-24 OKLAHOMA PHARMACY RESIDENTS

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|-------------------------------|--|
| Name | Jamie Knisley, Pharm.D. |
| Email Address | jamie@totaldose.com |
| Current Position | PGY1 Pharmacy Resident |
| Current Institution | TotalDose. Edmond, OK |
| Pharmacy School | University of Oklahoma College of Pharmacy, Oklahoma City, OK |
| Other College | University of Oklahoma, Norman, OK |
| Family, Pets, Hobbies, etc. | I have a dog (Slider) and a cat (Maverick). Yes, their names are from Top Gun. |
| Why I am Doing a Residency | I started pharmacy school with the intention of continuing on in a community pharmacy. As my education progressed, so did my interest in the clinical aspects of pharmacy. I went back-and-forth several times, until I was introduced to the residency program at TotalDose. It was the perfect place for me, as it combined my passion for patient care as well as my love of ambulatory care. |
| One Interesting Fact About Me | My favorite party game is Name that Tune |



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|-------------------------------|---|
| Name | Nichole Krug, Pharm.D. |
| Email Address | nichole-krug@ouhsc.edu |
| Current Position | PGY2 Critical Care Pharmacy Resident |
| Current Institution | University of Oklahoma College of Pharmacy / OU Health, Oklahoma City, OK |
| Pharmacy School | University of Oklahoma College of Pharmacy, Oklahoma City, OK |
| Other College | B.S. in Medicinal Sciences, University of Oklahoma, Norman, OK |
| PGY1 Residency | Baylor University Medical Center, Dallas, TX |
| Family, Pets, Hobbies, etc. | Born and raised in Kansas City, Missouri (Go Chiefs!) and I go back to visit my family whenever I can. Hobbies include watching trash reality TV, true crime documentaries, all things OU sports, staying active, hanging out with my co-residents, and eating ice cream. |
| Why I am Doing a Residency | Critical care is fast paced with a high patient acuity allowing for many opportunities for pharmacy interventions. I'm completing a residency in order to receive the best training so I can become a well-rounded critical care pharmacist. |
| One Interesting Fact About Me | I have a weird obsession with athletic fields / turf management! |



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|-------------------------------|---|
| Name | Monica Le, Pharm.D. |
| Email Address | monica-le@ouhsc.edu |
| Current Position | PGY1 Pharmacy Resident |
| Current Institution | University of Oklahoma College of Pharmacy/OU Health, Oklahoma City, OK |
| Pharmacy School | University of Oklahoma College of Pharmacy, Oklahoma City, OK |
| Other College | |
| Family, Pets, Hobbies, etc. | I am from Edmond, OK; I have 2 dogs named Mikah and Milo. My hobbies include being a foodie, avid coffee drinker, taking spin classes, and running |
| Why I am Doing a Residency | I am completing a PGY-1 residency to help expand my clinical skills as well as the opportunity to work together with the medical team to improve patient care. The opportunities I have received during this year have helped me find my area of interest in critical care! |
| One Interesting Fact About Me | I can solve a Rubik's cube |

2023-24 OKLAHOMA PHARMACY RESIDENTS

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|----------------------------------|---|
| Name | Alyssa Loftin, Pharm.D. |
| Email Address | alyssadloftin@gmail.com |
| Current Position | PGY1 Pharmacy Resident |
| Current Institution | Claremore Indian Hospital, Claremore, OK |
| Pharmacy School | University of Oklahoma College of Pharmacy, Oklahoma City, OK |
| Other College | B.S. in Nutritional Science, Oklahoma State University, Stillwater, OK |
| Family, Pets, Hobbies, etc. | Four dogs (two of my own and two foster puppies), hiking, and kayaking |
| Why I am Doing a Residency | I wanted to expand my clinical skills and gain confidence in my profession so that I am best prepared for my future career. |
| One Interesting Fact About Me | My favorite TV show is New Girl |



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|-------------------------------|---|
| Name | Christopher Mariano, Pharm.D., MBA |
| Email Address | cmariano@cnhsa.com |
| Current Position | PGY1 Pharmacy Resident |
| Current Institution | Choctaw Nation Health Services, Tahleah, OK |
| Pharmacy School | Texas Tech University School of Pharmacy, Dallas, TX |
| Other College | B.A. in Biology, East Central University, Ada, OK |
| Family, Pets, Hobbies, etc. | Parents: Mike and Angela Mariano and siblings Russell Mariano and Gina Pope |
| Why I am Doing a Residency | I chose residency because I enjoy the challenge and diversity of clinical pharmacy and residency gave the best opportunity to experience a wide variety of possibilities. |
| One Interesting Fact About Me | I was the oldest student in my pharmacy class of 155. |



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|-------------------------------|---|
| Name | Tristan Millican, Pharm.D. |
| Email Address | tristan.renfroe@ascension.org |
| Current Position | PGY1 Pharmacy Resident |
| Current Institution | Ascension St. John Medical Center, Tulsa, OK |
| Pharmacy School | Texas Tech University Health Sciences Center Jerry H. Hodge School of Pharmacy, Dallas TX |
| Other College | Bachelor of Art in Biology, University of North Texas, Denton, TX |
| Family, Pets, Hobbies, etc. | I am married and expecting our first child this July! I have 2 dogs; a Pomeranian and a yellow lab. Outside of work my husband and I like to watch horror/thriller movies & play board games. |
| Why I am Doing a Residency | I wanted to become more confident in my abilities as a clinical practitioner. I also wanted to be able to see a wide range of clinical areas to help guide me in my career choices. |
| One Interesting Fact About Me | Before I was pregnant, I also dabbled in the art of aerial acrobatics. |

2023-24 OKLAHOMA PHARMACY RESIDENTS

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|-------------------------------|--|
| Name | Walker Mink, Pharm.D. |
| Email Address | walker.mink@integrishealth.org |
| Current Position | PGY1 Pharmacy Resident |
| Current Institution | INTEGRIS Medical Center, Oklahoma City, OK |
| Pharmacy School | Idaho State University College of Pharmacy; Pocatello, ID |
| Other College | |
| Family, Pets, Hobbies, etc. | Collect and propagate various species of Philodendron plants. |
| Why I am Doing a Residency | To further develop my skills and knowledge as a clinical pharmacist in hopes of finding a position in either infectious disease or pediatric pharmacy. |
| One Interesting Fact About Me | I was a research assistant in undergrad, tasked with training cockroaches to find illegal substances such as cocaine and methamphetamines. |

2023-24 OKLAHOMA PHARMACY RESIDENTS

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|-------------------------------|---|
| Name | Andrea Nguyen, Pharm.D. |
| Email Address | andrea.wilson3@va.gov |
| Current Position | Infectious Diseases PGY2 Pharmacy Resident |
| Current Institution | OKC VAMC, Oklahoma City, OK |
| Pharmacy School | Southwestern Oklahoma State University, Weatherford, OK |
| Other College | Southwestern Oklahoma State University, Weatherford, OK |
| PGY1 Residency | OKC VAMC, Oklahoma City, OK |
| Family, Pets, Hobbies, etc. | I have a husband, 2 Dogs, Doug & Milli, and I like building Legos |
| Why I am Doing a Residency | To gain expert knowledge in ID and pursue a career in antimicrobial stewardship |
| One Interesting Fact About Me | I'm the 2023 1st place Christmas cookie champion at the VAMC Pharmacy department. |

2023-24 OKLAHOMA PHARMACY RESIDENTS

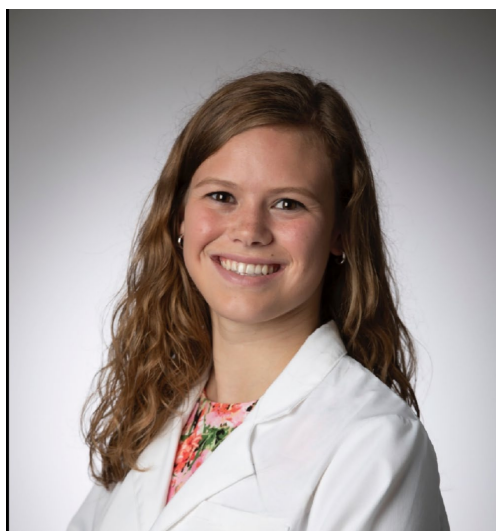
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|-------------------------------|--|
| Name | Natasha Orcutt, Pharm.D., B.S., B.A. |
| Email Address | natasha.orcutt@va.gov |
| Current Position | PGY1 Pharmacy Resident |
| Current Institution | Oklahoma City VA Health Care System, Oklahoma City, OK |
| Pharmacy School | University of Oklahoma College of Pharmacy, Oklahoma City, OK |
| Other College | University of Oklahoma, Norman, OK |
| Family, Pets, Hobbies, etc. | My husband and I have 2 rescue dogs, Bennie and Barley. In my free time, I enjoy working out in our home gym and training for the OK Memorial Half Marathon. This spring, I joined an adult soccer league and when residency's over, I want to take a ceramics class! |
| Why I am Doing a Residency | I wanted to do a residency for the training to work at the top of my license and the experience to better identify what area of pharmacy I would like to work in. So far, I am drawn to both internal medicine and ambulatory disease states, so I haven't necessarily narrowed that down, but residency has developed the soft skills and clinical application experience to be successful in either field. |
| One Interesting Fact About Me | I grew up raising and showing pigs in Illinois. |



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| Name | Avery Parman, Pharm.D. |
| Email Address | avery-parman@ouhsc.edu |
| Current Position | PGY-2 Pediatric Pharmacy Resident |
| Current Institution | University of Oklahoma College of Pharmacy, Oklahoma City, OK |
| Pharmacy School | The University of Mississippi School of Pharmacy, Jackson, MS |
| Other College | The University of Mississippi, Oxford, MS |
| PGY1 Residency | Acute Care, University of Oklahoma College of Pharmacy, Oklahoma City, OK |
| Family, Pets, Hobbies, etc. | My family lives in Mississippi with my Aussie doodle, Indie, and I love to visit them whenever I can! For fun I enjoy trying new restaurants, exploring the different districts in OKC, traveling, and keeping up with college basketball. |
| Why I am Doing a Residency | I am completing a PGY-2 Pediatric residency in order to continue growing my clinical knowledge and pharmacy practice. I hope to pursue a job in the intensive care setting and want to ensure I can provide my future patients with the highest quality of care! |
| One Interesting Fact About Me | Growing up my dream job was to be a personal shopper |



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|-------------------------------|---|
| Name | Jordan Ruffin, Pharm.D. |
| Email Address | jordan.ruffin01@hillcrest.com |
| Current Position | PGY1 Pharmacy Resident |
| Current Institution | Hillcrest Hospital South, Tulsa, OK |
| Pharmacy School | University of Oklahoma College of Pharmacy, Oklahoma City, OK |
| Other College | University of Oklahoma, Norman, OK |
| Family, Pets, Hobbies, etc. | I'm originally from Pryor, OK but now live in Tulsa with my husband Dylan, our dog Heidi, and our chinchilla, Squirt. We enjoy being outdoors and love to take our dog with us hiking, camping, and kayaking (Squirt likes to stay home). |
| Why I am Doing a Residency | I'm doing a residency to build my clinical knowledge and abilities and to gain confidence in applying that knowledge. Residency has shown me that there is a lot to learn but that I knew more than I thought, too. |
| One Interesting Fact About Me | My family owns a 50s-style drive-in restaurant in Pryor, which is where I had my first job. |

2023-24 OKLAHOMA PHARMACY RESIDENTS

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|-------------------------------|---|
| Name | Kyla Sampson, Pharm.D. |
| Email Address | kyla.sampson@ihs.gov |
| Current Position | PGY-1 Pharmacy Resident |
| Current Institution | Lawton Indian Hospital, Lawton, OK |
| Pharmacy School | Southwestern Oklahoma State University, Weatherford, OK |
| Other College | |
| Family, Pets, Hobbies, etc. | Travel, play with my dog, and make car freshies. |
| Why I am Doing a Residency | To grow as a pharmacist and learn from those around me. |
| One Interesting Fact About Me | I have a cute miniature schnauzer named Gus. |



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| Name | Joshua J. Schultz, Pharm.D. |
| Email Address | Jschultz@saintfrancis.com |
| Current Position | PGY1 Pharmacy Resident |
| Current Institution | Saint Francis Health System, Tulsa, OK |
| Pharmacy School | University of New England, Portland, ME |
| Other College | B.S. Neuroscience, University of New England, Biddeford, ME |
| Family, Pets, Hobbies, etc. | Interests include listening to music, reading, and hiking. |
| Why I am Doing a Residency | Pursuit of specialized knowledge, specifically in psychiatry. |
| One Interesting Fact About Me | I'm originally from Berwick, ME |



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| Name | Hunter Stout, Pharm.D. |
| Email Address | hunter-stout@ouhsc.edu |
| Current Position | PGY-2 Ambulatory Care Pharmacy Resident |
| Current Institution | University of Oklahoma College of Pharmacy, Oklahoma City, OK |
| Pharmacy School | University of Oklahoma College of Pharmacy, Oklahoma City, OK |
| Other College | OU Undergraduate Studies in Pre-Pharmacy, Norman, OK |
| PGY1 Residency | University Medical Center of El Paso, El Paso, TX |
| Family, Pets, Hobbies, etc. | Ballroom dancing, going on adventures |
| Why I am Doing a Residency | To provide expert level care for my patients and learn how to set up and run my own ambulatory care pharmacy practice. |
| One Interesting Fact About Me | I used to be a Ballroom Dance Teaching Assistant before Pharmacy School |



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| Name | Tara Sullivan, Pharm.D. |
| Email Address | tara-f-sullivan@ouhsc.edu |
| Current Position | PGY2 Oncology Pharmacy Resident |
| Current Institution | OU Health, Oklahoma City |
| Pharmacy School | University of Florida, Gainesville, FL |
| Other College | University of South Carolina, Columbia, SC |
| PGY1 Residency | Acute Care at North Florida/South Georgia VA, Gainesville, FL |
| Family, Pets, Hobbies, etc. | Sadie is my dog; I do triathlons, bake and cook, and love to travel (especially cruising) |
| Why I am Doing a Residency | A lot of my family members have had cancer and I want to give back to the community |
| One Interesting Fact About Me | I do Ironman races |



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| Name | Caleb Taylor, Pharm.D. |
| Email Address | caleb.taylor@swosu.edu |
| Current Position | PGY1 Pharmacy Resident |
| Current Institution | Southwestern Oklahoma State University/Walgreen Co., Oklahoma City, OK |
| Pharmacy School | Southwestern Oklahoma State University College of Pharmacy, Weatherford, OK |
| Other College | |
| Family, Pets, Hobbies, etc. | I'm the middle child of three boys from a small town. I have one cat (he loves to play fetch!). My hobbies include walking, swimming, and cooking. |
| Why I am Doing a Residency | I'm doing a residency to learn and gain experience in the "clinical" side of outpatient pharmacy. |
| One Interesting Fact About Me | I make my own cologne. |

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| Name | Allison Tiemann, Pharm.D. |
| Email Address | artiemann@saintfrancis.com |
| Current Position | PGY2 Psychiatry Pharmacy Resident |
| Current Institution | Laureate Psychiatric Clinic and Hospital, Tulsa, OK |
| Pharmacy School | University of Texas at Tyler College of Pharmacy, Tyler, TX |
| Other College | Angelina College, Lufkin, TX |
| PGY1 Residency | VA North Texas Health Care System, Dallas, TX |
| Family, Pets, Hobbies, etc. | I enjoy running and hiking with my friends and family. |
| Why I am Doing a Residency | I am doing a residency to provide myself well rounded rotation experiences that can prepare me to become a psychiatric clinical pharmacist. |
| One Interesting Fact About Me | I once went cliff jumping in Hawaii. |

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| Name | Iab Vang, Pharm.D. |
| Email Address | nivang@saintfrancis.com |
| Current Position | PGY1 Pharmacy Resident |
| Current Institution | Saint Francis Hospital, Tulsa, OK |
| Pharmacy School | Western University of Health Sciences, Pomona, CA |
| Other College | Bachelor of Science, University of Oklahoma, Norman, OK |
| Family, Pets, Hobbies, etc. | My hobbies are traveling and exploring different cuisines. |
| Why I am Doing a Residency | I am currently in a pharmacy residency, focused on continuous learning and broadening my knowledge base. This program aims to enhance my decision-making abilities, shaping me into a well-rounded pharmacist. |
| One Interesting Fact About Me | An interesting fact about me is that I am the youngest of 8 siblings. |

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| Name | Mitchell Welch Pharm.D. |
| Email Address | mbwelch@osumc.net |
| Current Position | PGY1 Pharmacy Resident |
| Current Institution | OSU Medical Center, Tulsa, OK |
| Pharmacy School | SWOSU College of Pharmacy, Weatherford, OK |
| Other College | Chemistry, Cameron University, Lawton, OK |
| Family, Pets, Hobbies, etc. | My wife Carley Welch, Dog Goose. I enjoy watching college football and trying new restaurants. |
| Why I am Doing a Residency | To further myself in my profession and have the option to teach future pharmacy students. |
| One Interesting Fact About Me | My signature dish is a microwave quesadilla and I'm not ashamed of it. |



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| Name | Kaci Lynn White, Pharm.D. |
| Email Address | kwhite2@nrh-ok.com |
| Current Position | PGY1 Pharmacy Resident |
| Current Institution | Norman Regional Health System, Norman, OK |
| Pharmacy School | University of Mississippi School of Pharmacy, Oxford, MS |
| Other College | Bachelor of Science in Pharmaceutical Sciences, University of Mississippi, Oxford, MS |
| Family, Pets, Hobbies, etc. | Hobbies include axe throwing, reading, and painting |
| Why I am Doing a Residency | I wanted to build upon the clinical skills and decision making that I attained during pharmacy school. I also wanted to have experience in the inpatient setting; that way I could provide patients with exceptional care in any area of pharmacy. |
| One Interesting Fact About Me | I am a roller coaster fanatic. |

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| Name | Angela Yu, Pharm.D., BS |
| Email Address | angela.yu01@hillcrest.com |
| Current Position | PGY1 Pharmacy Resident |
| Current Institution | Hillcrest Medical Center, Tulsa, OK |
| Pharmacy School | The University of Texas at Austin College of Pharmacy; Austin, TX |
| Other College | University of Texas at Dallas, TX |
| Family, Pets, Hobbies, etc. | Hiking, sleeping, and eating |
| Why I am Doing a Residency | To have a strong clinical foundation in acute care |
| One Interesting Fact About Me | I am not the best at trivia/pop-culture |