Pharmacist-Led DVT Clinic Cuts Emergency Department Utilization and Improves Access to Care

A pharmacist-led deep vein thrombosis (DVT) clinic revolutionizes outpatient care, reducing emergency visits and costs while enhancing medication adherence through collaborative practices.

At the 2025 American Society of Health-System Pharmacists (ASHP) Midyear Clinical Meeting & Exhibition, Madison Yates, PharmD, BCACP, CPP, a clinical pharmacist practitioner at Cone Health, describes the development of a pharmacist-led outpatient deep vein thrombosis (DVT) clinic designed to address fragmented care, medication access barriers, and delays in treatment.

In an interview with Pharmacy Times, Yates explains that by embedding pharmacists within a vascular surgery practice and centralizing imaging, diagnosis, anticoagulation initiation, and follow-up, the clinic enables rapid outpatient care and avoids unnecessary emergency department visits. In its first year, the clinic significantly reduced emergency department utilization and inpatient admissions for DVT while improving medication adherence and lowering patient out-of-pocket costs. Yates emphasizes the importance of interdisciplinary collaboration and hopes the model can be replicated to improve care for other high-impact disease states.

Pharmacy Times: Can you introduce yourself?

Madison Yates, PharmD, BCACP, CPP: I am Madison Yates. I am a clinical pharmacist practitioner at Cone Health in Greensboro, North Carolina, and I work in our deep vein thrombosis clinic.

Pharmacy Times: What gap in DVT care led you to create a pharmacist-led outpatient clinic, and what problem were you most focused on solving?

Yates: We saw a handful of barriers that patients with DVT were facing throughout our community that led to fragmented, suboptimal care. Most patients with positive outpatient ultrasounds were sent to the emergency department to start treatment, with a prescription sent at discharge to start anticoagulation. Many of those patients could not afford the medication at the pharmacy. Most pharmacies in our area do not stock Eliquis or Xarelto starter packs, which led to delays in starting treatment for some patients. Many patients did not have a primary care provider, so they may have been able to fill the first month of medication but were not established anywhere to receive access to follow-up care.

Once we really got started, we found certain populations who tended to slip through the cracks even more when it came to follow-up care, including uninsured, pregnant, and postpartum patients. Many patients who would have been eligible for vascular interventions to improve symptoms and long-term outcomes were not referred to vascular surgery or were not able to be seen promptly during the window of possible benefit. As a result, our health system sought to

implement a standard process where patients could receive high-quality, interdisciplinary care in an outpatient setting, and they wanted this to be led by a pharmacist.

We wanted to provide an alternative option for patients to receive rapid treatment for an acute DVT entirely in the outpatient setting. We centralized imaging, diagnosis, anticoagulant initiation, screening for vascular intervention, and pharmacy services into a single outpatient experience for the patient.

Pharmacy Times: How does the collaborative model between pharmacists and vascular surgeons work in real time within the clinic?

Yates: The DVT clinic is embedded within our vascular surgery practice, where there are six vascular surgeons, and vascular imaging is on the same floor, which allows for close collaboration among all of us. Patients are referred to the clinic from providers throughout our health system upon a positive outpatient ultrasound result, and if it is determined they are safe for outpatient treatment, we see them immediately to start treatment, which avoids the emergency department entirely.

We also have a health system pharmacy in our lobby, so every patient leaves the building with that medication in hand. Our state pharmacy law has a provision for qualified pharmacists who are authorized by the state pharmacy and medical boards to enter into a drug therapy management agreement with a supervising physician and work under a collaborative practice agreement as a clinical pharmacist practitioner. I and the second pharmacist that we have expanded to are both CPPs under the supervision of those six vascular surgeons.

Once a patient is diagnosed with the DVT and added to our schedule, we are able to start treatment, order lab tests, counsel the patient, resolve any medication access barriers, and arrange follow-up. Patients who may qualify for a vascular intervention are also seen by one of the vascular surgeons in the clinic with us. They created a protocol for which clots might qualify for intervention so that they are assessing every appropriate patient for possible intervention. We work very closely together, and they are always available in the clinic if something comes up that we want their opinion on. Outside of that, and vice versa, they will come to us for things as well.

Pharmacy Times: What impact has the clinic had on emergency department visits, inpatient admissions, and overall care utilization?

Yates: In just the first year the clinic was open, which was 2024, we saw over 200 patients in clinic, and we saw emergency department and inpatient utilization for DVT nearly cut in half compared to 2023, before we opened. The proportion of systemwide DVT encounters that occurred in the emergency department in 2024 decreased from 88.6% to 53.3%.

We stratified the 2024 data to determine what impact the clinic was having on that decline and found significantly lower acute care utilization for DVT among patients seen in the DVT clinic compared to those not seen in the clinic. The proportion of emergency department encounters for DVT was 15.2% for clinic patients, which includes patients who initially presented to the emergency department and were referred to us for follow-up, versus 91.5% for patients I had

never seen. In other words, had we not opened in 2024, the proportion of emergency department utilization would have remained the same as 2023, at around 90%.

The same trend was seen for inpatient admissions, with the proportion of systemwide DVT encounters that led to admission decreasing from 25.5% in 2023 to 13.9% in 2024. In 2024, 1.8% of inpatient admissions were patients who had been seen in clinic, versus 26% who had never been seen in clinic, which mirrors the 2023 rate. We found that the DVT clinic was the primary driver in reducing these systemwide averages, which leads to significant cost savings for patients and the health system and shortens the time for other patients in the emergency department to be seen for DVT.

Pharmacy Times: How has pharmacist-led medication access and counseling improved adherence and reduced patient costs?

Yates: We spend a lot of time during visits counseling patients and ensuring that they completely understand their medication, which I think helps lead to the high anticoagulation adherence rates we have seen. We saw 96% adherence for the first three months of treatment based on proportion of days covered.

In the first full year that we were open, we helped save patients over $50,000 in out-of-pocket costs when looking at just the first three months' supply of medication they received. This was accomplished through copay cards, patient assistance programs, Medicaid enrollment, and anything else we could do to help them save money, which equated to about $250 per patient.

Pharmacy Times: What does it mean to you, both personally and professionally, to be recognized as an award recipient for this pharmacist-led DVT clinic initiative?

Yates: I feel incredibly honored and humbled to receive this award. Opening and leading this clinic was my first post-residency job, and I feel incredibly lucky to get to care for these patients. It is really rewarding for me to see patients walk into their clinic visit anxious about the news of their DVT diagnosis but leave feeling empowered with the knowledge of what is going on, what we are doing, and why we are doing it.

It has also been a joy to work with a wonderful group of vascular surgeons, sonographers, heart and vascular leaders, clinic staff, and many others across our health system. The clinic would not exist or be successful without every single one of them. I hope the awareness that comes with this award leads other health systems to see the value in a model like this and replicate it in their own communities. It has worked really well for DVT, and as value-based care continues to evolve, I believe it would work well for other disease states with high acute care utilization or significant gaps in medication management. I would be more than happy to talk with anyone hoping to implement something like this and encourage them to reach out if I can be of help.

News Source:

https://www.pharmacytimes.com/view/pharmacist-led-dvt-clinic-cuts-emergency-department-utilization-and-improves-access-to-care