Contact Geisinger Enterprise Pharmacy:
570-271-6192

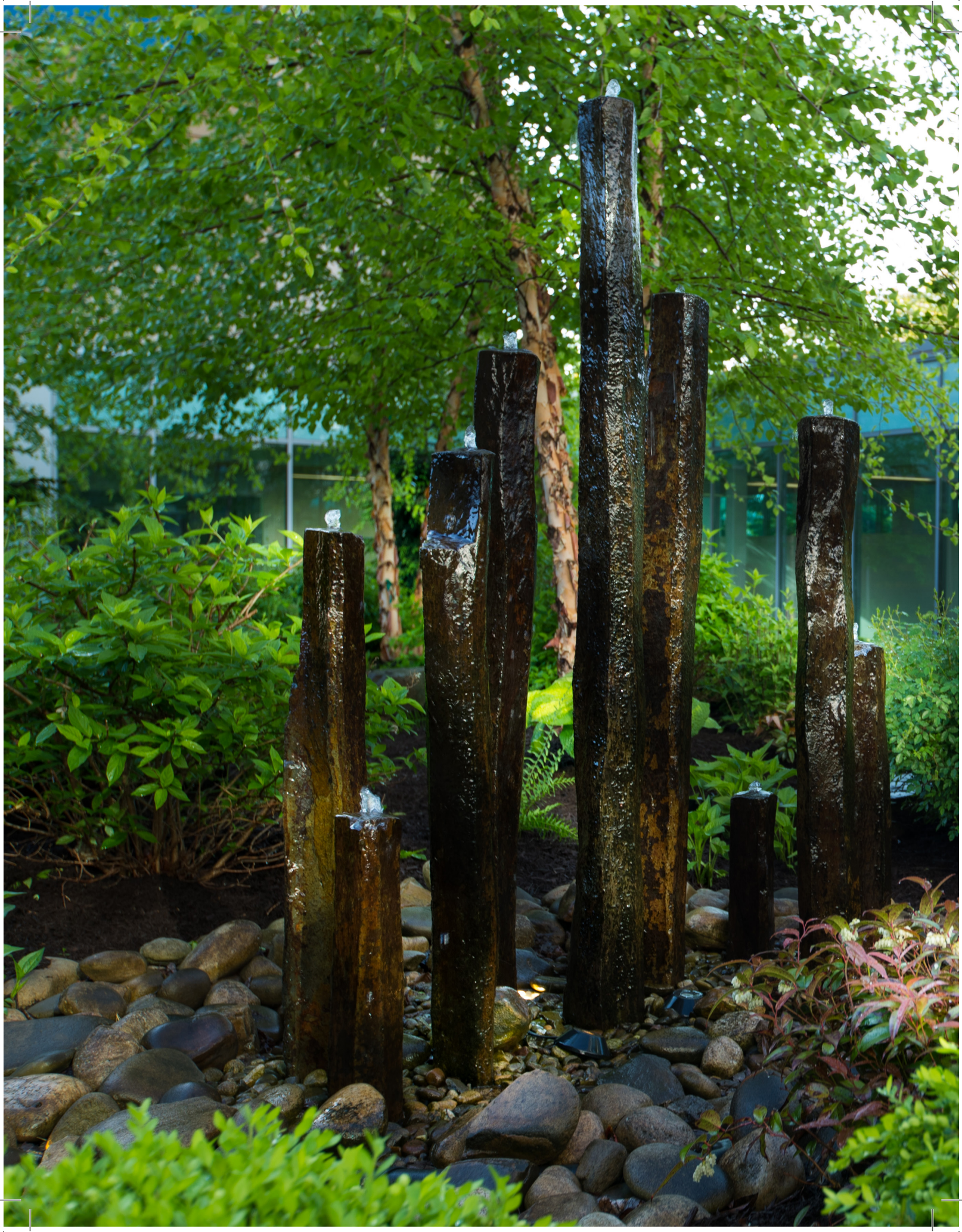
geisinger.org/pharmacy

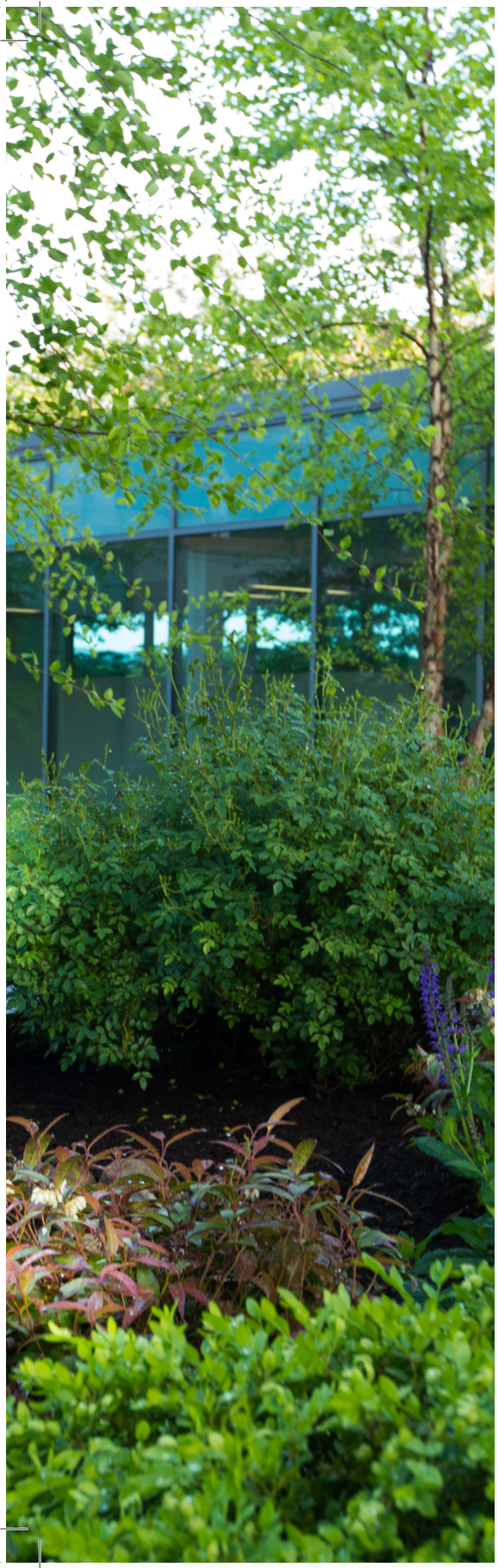
2624550-10/2025

2024–2025 Year in Review

Geisinger Enterprise Pharmacy

Geisinger





Contents


Geisinger

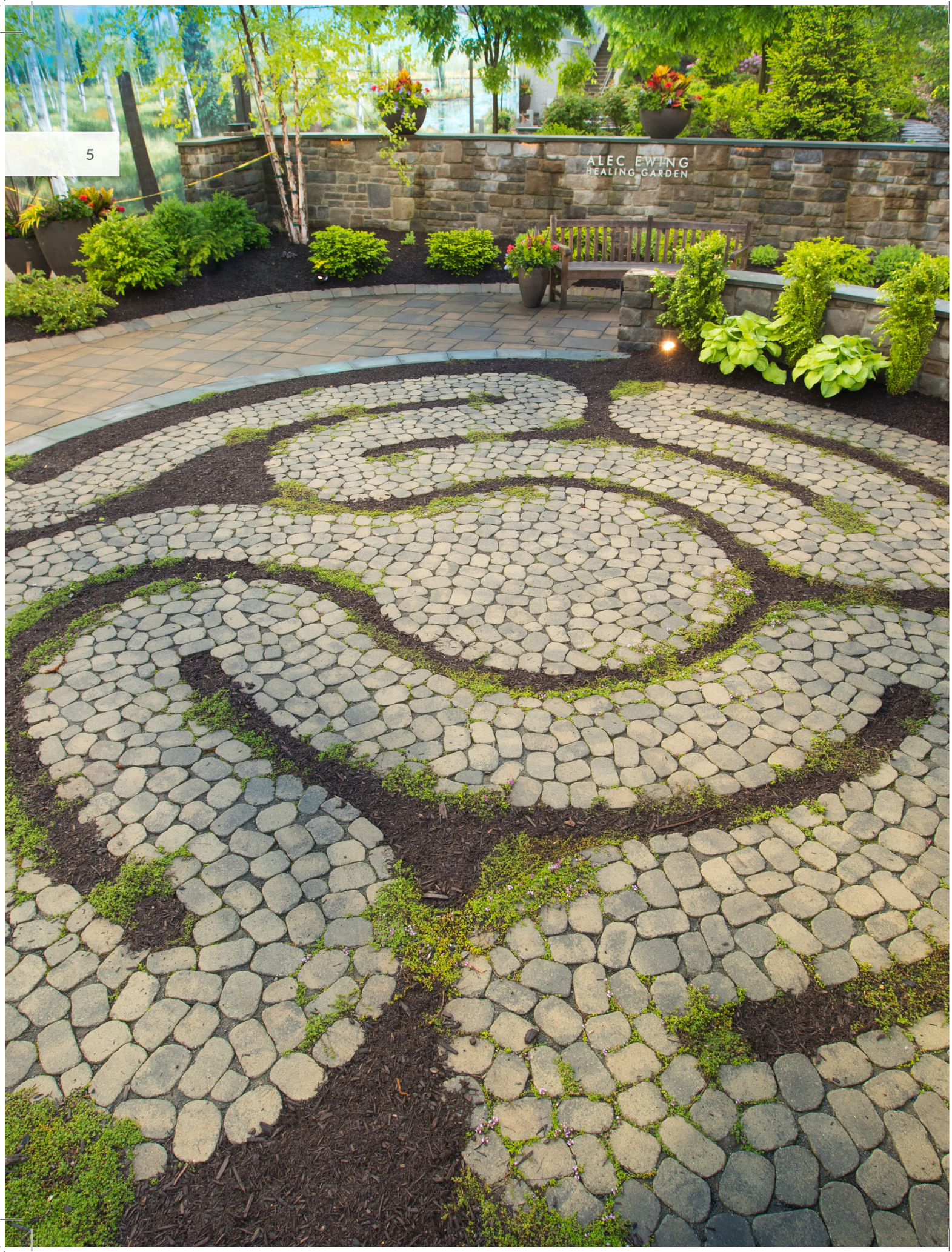
Mission

To work collaboratively with healthcare professionals across Geisinger and the community it serves to provide safe, cost-effective, evidence-based pharmaceutical care, striving to enhance the lives and health of our patients, system and region

---

Vision

- To lead a paradigm shift toward affordable, proactive, evidence-based pharmaceutical care
- To integrate advanced technologies and pharmacy into direct patient care
- To emphasize a move from a reactive treatment care delivery model to a proactive preventive model
- To leverage cutting-edge technologies like artificial intelligence, Carepaths, pharmacogenomics and digital health solutions that help realize personalized care while limiting unwarranted variation in its delivery


ALEC EWING
HEALING GARDEN

Message from the chief pharmacy officer

As we reflect on the past year, I am proud to share the remarkable progress we have made in advancing pharmacy services, optimizing medication use and improving patient outcomes across our organization. Our pharmacy teams have demonstrated unwavering commitment, innovation and resilience in the face of evolving healthcare challenges.

This year, we continued to focus across the 8 pillars of Enterprise Pharmacy:

1. Hospital Programs
2. Planning, Strategy & Analysis
3. Operations & Compliance
4. Ambulatory Programs
5. Formulary, Contracting & Procurement
6. Knowledge Management
7. Managed Care Pharmacy
8. Center for Pharmacy Innovation & Outcomes

Each pillar has served as a foundation for our strategic initiatives, driving excellence in care delivery, operational performance and innovation. Our teams have made measurable impacts, from expanding clinical services and improving transitions of care to optimizing formulary management and advancing research.

A key highlight this year was our **continued integration of Epic** across pharmacy operations. This has enabled more seamless medication reconciliation, enhanced clinical decision support and improved communication across care teams — ultimately contributing to safer, more efficient patient care.

We also worked diligently on the **Risant Health integration**, aligning pharmacy services, data systems and clinical protocols to support a unified, scalable model of care. This complex effort required cross-functional collaboration and strategic foresight, and I'm proud of the professionalism and agility our teams demonstrated throughout the process.

Looking ahead, we remain focused on continuous improvement, professional development and equity in care delivery. Our mission is clear: to elevate the role of pharmacy in shaping the future of healthcare.

Thank you for your continued support and partnership.

Michael A. Evans, RPh, MBA, FASHP
Chief Pharmacy Officer
Geisinger

Pharmacy leadership

Mike Evans
Chief Pharmacy Officer

Kelly Guza
Vice President
Hospital Pharmacy Services

Gerard Greskovic
Vice President
Ambulatory Pharmacy Services

Seth Gazes
Associate Vice President
Planning, Strategy and Analysis

Jamie Miller
Associate Vice President
Managed Care Pharmacy

Dave Klinger
System Director
Operations and Compliance

Daniel Longyhore
System Director
Knowledge Management

Eric Wright
Professor and System Director
Center for Pharmacy
Innovation and Outcomes

Durga Zally
System Director
Infusion and Oncology Services

Enterprise Pharmacy pillars

Hospital Programs

- Medication optimization
- Multidisciplinary team rounds
- Emergency bedside response
- Antimicrobial stewardship
- Anticoagulation management
- Pharmacokinetics
- Medication reconciliation
- Specialty services (e.g., hem/onc, peds)
- IV and home infusion
- OR

Planning, Strategy & Analysis

- Innovation
- Project management
- CarePaths
- Population health
- EP program analysis and evaluation
- Automation/technology
- Data informatics
- External consulting

Operations & Compliance

- Medication safety
- Corporate compliance
- Policies and procedures
- 340B

Ambulatory Programs

- Specialty and primary care disease management (MTDM)
- Centralized clinical pharmacy services
- Retail
- Mail-order
- Specialty
- Meds to Beds
- Pharmacogenomics program
- Pharmaceutical patient assistance

Pharmacy Care Coordination & Enterprise EHR

Formulary, Contracting & Procurement

- Clinical-focused formularies
- IDN contracting
- IDN procurement
- IDN formulary

Knowledge Management

- Pharmacy residency programs
- Student coordination
- Staff training programs
- Competency development
- Patient education materials/programs
- Collaborative practice

Managed Care Pharmacy

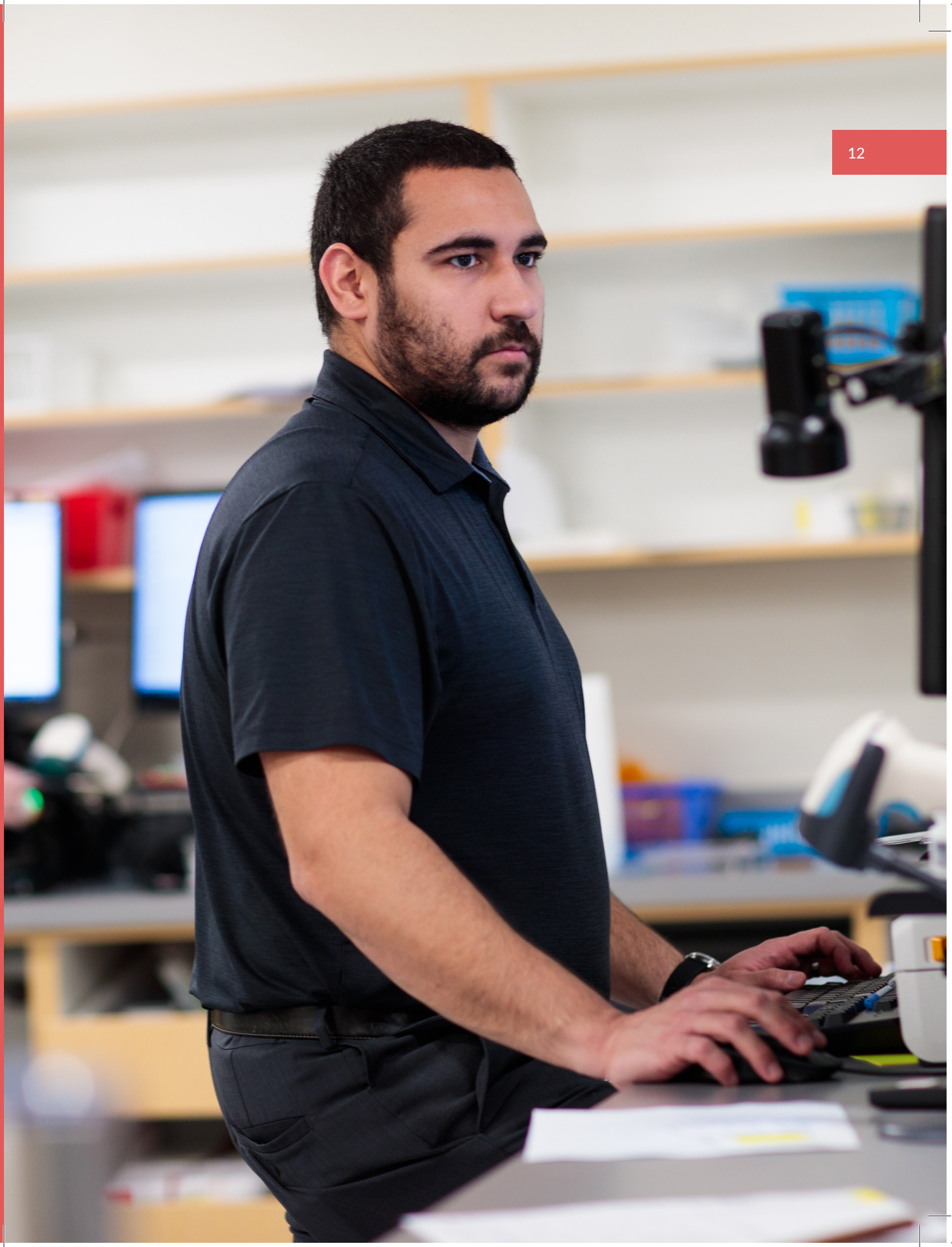
- Medication benefit design & management
- Medication utilization management
- Medication adherence
- Managed LDD and specialty pharmacy network
- Treat-to-target HEDIS metrics
- Prior authorization

Center for Pharmacy Innovation & Outcomes

- Investigational drug services
- Pharmacy research
- Pharmacy outcome studies
- Research grants
- Translating research into practice

Not a building; not a pharmacy: A complete system of clinical pharmacy resources responsible for medication management systemwide. We are matrixed throughout Geisinger as a distributed pharmacy and pharmacist network who maintain the patient at the center of all we do.

Ambulatory care



Balancing demand and evidence: MTDM's oversight of GLP-1 prescribing

Authors: Susanne Burns, Amanda Popko and Allison Cebulko

In response to the rising cost and growing demand for GLP-1 receptor agonists, Specialty MTDM, in collaboration with the Value & Strategy team, implemented a systemwide initiative designed to make sure prescribing practices remain clinically appropriate and financially sustainable. GLP-1 therapies, used for Type 2 diabetes and obesity, have gained widespread popularity, prompting the need to create an ecosystem that protects medication access for patients realizing maximal therapeutic impact.

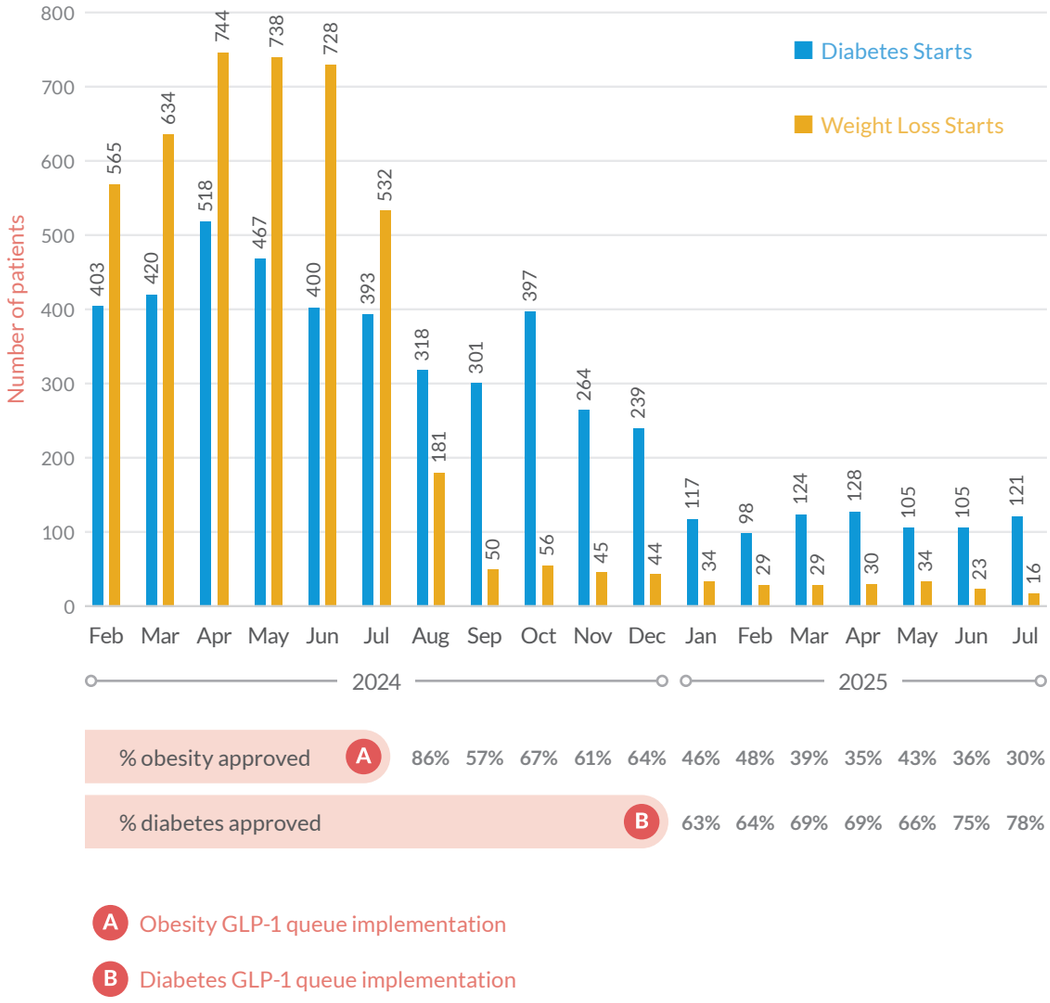
To address this challenge, a multidisciplinary team was assembled to define clinical best practices for the use of GLP-1 therapies in both diabetes and obesity management. This framework emphasized evidence-based criteria, including patient eligibility, therapeutic alternatives and expected outcomes. The goal was to guide providers toward high-value prescribing decisions that balance clinical benefit with cost-effectiveness, while also supporting long-term sustainability.

The cornerstone of the initiative was the implementation of an ambulatory order review queue — a novel workflow enhancement that positioned clinically trained pharmacists to review GLP-1 prescriptions before transmission to the pharmacy. This proactive step allowed pharmacists to validate indications, check alignment with best practices and engage prescribers when clarification or alternative therapies were warranted. By integrating pharmacists into the prescribing workflow, the review process improved prescribing accuracy, reduced unnecessary utilization and fostered meaningful collaboration between pharmacists and providers.

Beyond clinical oversight, the initiative emphasized education and communication. Pharmacists provided feedback to prescribers, shared guidance on formulary changes and helped navigate therapeutic alternatives when coverage or cost barriers were identified. This approach not only supported optimal prescribing, but also strengthened provider confidence in navigating a rapidly evolving therapeutic landscape.

Through these coordinated efforts, MTDM demonstrated how health systems can respond to market pressures with thoughtful, evidence-driven strategies. By prioritizing clinical integrity and operational oversight, the initiative helped mitigate unnecessary costs while preserving access to essential therapies. As demand for GLP-1 agents continues to grow — driven by expanding indications and public awareness — this model offers a scalable blueprint for sustainable prescribing practices that serve patients and payors alike.

GLP-1 Geisinger Prescribers – New Starts – All Payors



A Obesity GLP-1 queue implementation

B Diabetes GLP-1 queue implementation

Expanding clinical impact: Specialty MTDM's role in collaborative, patient-centered care

Authors: Susanne Burns, Amanda Popko, Allyson Hess and Allison Cebulko

Specialty MTDM continues to expand its clinical footprint through innovative partnerships and interdisciplinary care models that enhance patient access, optimize therapy and improve outcomes across a growing number of specialties. These initiatives demonstrate the critical role of pharmacists in advancing systemwide goals for quality, efficiency and patient-centered care, while also showcasing the value of collaborative care in complex therapeutic areas.

In dermatology, MTDM clinical pharmacists now co-manage patients on isotretinoin in close collaboration with dermatology providers. By integrating MTDM pharmacists into the care team, common barriers that delay treatment initiation have been removed, streamlining the patient's journey. Pharmacists ensure strict adherence to REMS protocols, provide detailed education on safety and adherence and increase prescription capture in Geisinger Pharmacy through a collaborative model with Geisinger retail. This pharmacist-led support not only improves operational efficiency, but also enhances patient understanding and engagement. Specialty MTDM co-management of isotretinoin frees up dermatology providers to focus on new and complex cases, significantly improving patient access and clinic throughput.

In partnership with cardiology, MTDM launched a proactive lipid management program targeting patients at high risk for cardiovascular events who may benefit from advanced lipid-lowering therapy. Primary care teams identify eligible patients, who are then referred to a cardiology pharmacist for comprehensive medication management during the first year of therapy, under the guidance of a cardiology physician champion. Pharmacists provide longitudinal support by closely monitoring treatment, adjusting therapy to achieve lipid goals and offering consistent follow-up to reinforce adherence and address side effects. This approach not only accelerates initiation of appropriate therapy, but also allows timely specialty access without requiring multiple provider visits, reducing delays and improving continuity of care.

MTDM also introduced a nephrology clinical pharmacy program focused on high-risk hypertension. Pharmacists provide intensive management for patients with uncontrolled blood pressure, including remote monitoring and medication optimization. This program enhances continuity of care, supports early intervention to prevent progression of kidney disease and strengthens collaboration between nephrology and pharmacy teams. Patients benefit from personalized medication plans and regular follow-up, which help improve outcomes and reduce complications.

These initiatives reflect MTDM's commitment to collaborative, patient-centered care. By expanding the role of pharmacists within specialty clinics, MTDM has increased clinical capacity, strengthened therapeutic management and improved provider access. These programs illustrate how pharmacist-driven services can advance systemwide goals for quality, cost-effectiveness and operational efficiency while making sure patients receive timely, evidence-based care tailored to their individual needs.

Ambient documentation: Improving the Medication Therapy Disease Management pharmacist's productivity by decreasing documentation time

Authors: Anthony Olson, Leeann Webster, Stacey Grassi and Duncan Dobbins

Geisinger's Medication Therapy Disease Management (MTDM) clinical pharmacists devote a sizable share of each workday to documenting notes for their clinical encounters in the electronic health record (EHR). The amount of time and effort pharmacists spend working in EHRs — often extending beyond regular clinic hours — has been associated with burnout and care quality concerns. Research suggests that clerical tasks, such as documentation, consume cognitive bandwidth that could otherwise be directed toward clinical decision-making, patient communication and other high-value activities.

Recent advancements in artificial intelligence have introduced new tools like ambient listening and documentation, which aim to reduce the time and effort clinicians spend working in the EHR. Geisinger has deployed an ambient listening and documentation tool that auto-generates drafts of EHR notes from audio recordings of patient visits with MTDM pharmacists. Patient consent is required to activate the tool for privacy and transparency, and pharmacists must review and validate each note for comprehensiveness and accuracy before it is finalized in the EHR.

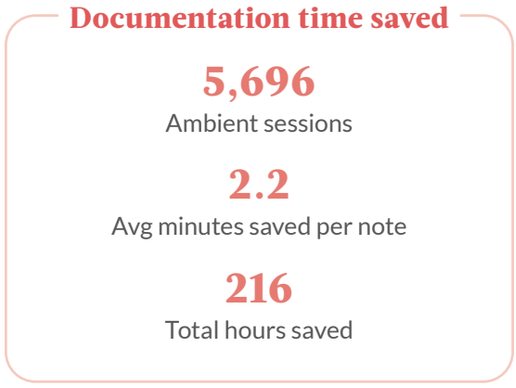
Early research and pilot feedback indicate that such tools help clinicians document more quickly, accurately, clearly and comprehensively. The time saved on documentation can also reduce screen time for pharmacists, creating more opportunities for direct patient engagement — a shift that may enhance the patient's experience and the provider's satisfaction.

In February 2025, MTDM piloted ambient documentation with 4 pharmacists practicing across 3 distinct patient populations. Two pharmacists were embedded in MTDM Family Practice, 1 in MTDM Pain Management, and 1 in Geisinger 65 Forward, which focuses on senior-focused care. The response from all pilot participants was overwhelmingly positive, citing improved efficiency and reduced administrative burden. Based on this success, 6 additional pharmacists were added to the program, including MTDM Specialty pharmacists.

To date, 43 MTDM pharmacists have used ambient documentation to complete 5,969 notes, saving an average of 2.2 minutes per note and a cumulative total of 216 hours of documentation time compared to manual entry. (Figure 1) This time savings translates into increased clinical availability and reduced after-hours workload. More MTDM pharmacists have expressed interest in joining the program, but the platform currently requires an iPhone to use the app. Later this year, the app is expected to become compatible with Android devices, which will allow broader enrollment across the MTDM pharmacist team.

As Geisinger continues to explore innovative solutions to reduce administrative burden and improve care delivery, ambient documentation stands out as a promising tool to support clinician well-being and enhance patient-centered care.

Figure 1



Redefining retail: Geisinger Pharmacy's transformation toward patient-centered, tech-enabled care

Author: Jenny Plummer

The overall Geisinger Retail Pharmacy landscape has undergone a remarkable transformation since 2020, driven largely by the pandemic and subsequent shifts in medication distribution, consumer expectations and the growing influence of technology on the patient experience. Like many others in the industry, Geisinger Pharmacy has shifted focus from traditional in-person medication dispensing to enhancing and expanding the scope of services provided by retail pharmacy today. This evolution reflects a broader commitment to meeting patients where they are — physically and digitally.

Since 2021, Geisinger has added 5 new retail locations to its geographical footprint, with several more planned in the year ahead. We continue to prioritize in-person medication dispensing with the introduction of Rx Fast Pass in 2024, a collaborative program with clinic providers that accelerates prescription fulfillment for acute medications so patients can leave with them in hand. This initiative reduces wait times and improves continuity of care between clinic and pharmacy.

In addition to dispensing, Geisinger Pharmacy now offers a wide array of vaccines for walk-in patients (e.g., flu, RSV, shingles, tetanus, pneumonia) and affordable medication opportunities through our Geisinger Pharmacy $4/$4 Plus program. These services support preventive care and improve access to essential medications for patients across the region.

Geisinger Pharmacy has also reshaped the traditional in-store experience by offering a variety of new delivery opportunities across the system. The Meds-to-Beds delivery program is designed to support patients leaving the hospital with medications in hand. Over the past year, this program has extended business hours and now supports campuses without a retail pharmacy on site (Geisinger Shamokin Area Community Hospital, Geisinger South Wilkes-Barre) and offers after-hours services for Emergency Department patients at several Geisinger hospitals. This expansion gives patients timely access to medications, even in settings with limited pharmacy infrastructure.

The Geisinger Alternative Dispensing program is an on-site cash/carry solution offered at select ConvenientCare locations so patients can leave an urgent care visit with their medications — no need for an extra stop at the pharmacy. Retail pharmacy has worked to extend medication delivery beyond the pharmacy counter with ship-to-home and curbside pickup solutions. In the year ahead, we plan to reintroduce home delivery via courier, further enhancing convenience and accessibility for patients.

Finally, leveraging MyChart for prescription refills and pharmacy alerts has promoted patient convenience and engagement. Providing a mobile app solution allows our pharmacies to align with evolving consumer expectations for tech-enabled care, supporting a seamless and personalized experience across the care continuum.

The Geisinger Pharmacy evolution over the last few years underscores the continued partnership between pharmacy and patient care teams, as well as the adaptability to meet the changing demands of the patients we serve. The continued support and increased script capture across the organization is further testament to Geisinger's commitment to resilience and innovation in shaping the patient experience — with pharmacy services playing a central role in the overall care journey.

Pharmacist Provider Status Recognized by Medicaid: Building the Framework for Billing

Authors: Stacey Grassi, Daniel Longyhore and Leeann Webster

On March 1, 2024, Pennsylvania State Medicaid announced the inclusion of pharmacists as providers, allowing them to bill and be reimbursed for patient visits and other services. This milestone follows several years of collaboration with the Pennsylvania Department of Human Services, with Geisinger's vice president of ambulatory care services, Gerard (Jerry) Greskovic, serving as a key driver of this advancement. This recognition marks a significant achievement for pharmacists.

Becoming credentialed providers with a health plan is a complex process involving multiple critical steps and a broad team of stakeholders. Geisinger's strong support of pharmacy services enabled its pharmacists to become one of the first health system–based pharmacy teams to enroll and begin billing for services through Pennsylvania Medical Assistance.

Geisinger Pharmacy leadership, in collaboration with revenue management, credentialing, professional billing, compliance and other departments, developed a process to facilitate pharmacist enrollment.

The initiative began with Medication Therapy Disease Management (MTDM) pharmacists embedded at community medicine clinics who manage patients with chronic diseases. This group was selected because an existing billing process for patient visits was already in place. Each pharmacist registered for a PROMISe™ ID provider number, which verifies enrollment with the state to render Medicaid-covered services. Staff then created profiles with the Council of Affordable Quality Healthcare, a repository allowing providers to store professional information for health plans to access during credentialing. Pharmacists are required to review and attest to the accuracy of their profiles every 90 days. Each pharmacist also attended a new provider orientation session led by the revenue management team. Finally, staff worked closely with Geisinger's corporate insurance team to ensure certificates of insurance were on file.

Pharmacy leadership collaborated with staff to update progress notes, ensuring the inclusion of appropriate language and time attestation phrases.

On Sept. 23, 2024, this monumental effort went live, with the majority of MTDM pharmacists billing Medicaid for services. To support seamless enrollment of new hires, an automated process was developed that incorporates communication among hiring managers, revenue management, credentialing and corporate insurance. As of August 2025, the MTDM program bills an average of 2,000 Medicaid claims per month and receives a higher reimbursement rate than was possible before pharmacists were recognized as billable providers. Pharmacists working in the MTDM Specialty space and retail pharmacies are next to be enrolled and begin billing Medicaid.

Streamlining access: Centralized prior authorization management improves efficiency and patient care

Authors: Hank Aftewicz and Jessica Hodle

A centralized prior authorization (PA) management process was implemented for electronic PA (ePA) requests originating from 38 of Geisinger's primary care clinics. This initiative involved transitioning all ePA volume to the Centralized Clinical Pharmacy Services (CCPS) team, with the goal of developing a standardized and structured workflow, reducing therapy delays, improving outcomes for patients and reducing clinic staff responsibility. By centralizing this function, Geisinger aimed to streamline medication access and reduce administrative burden at the point of care.

In the centralized model, PA requests are handled by a dedicated team of experts, including pharmacy technicians and clinical pharmacists, who are well-versed in payor requirements, therapeutic alternatives and documentation standards. Their specialized knowledge allows for more efficient navigation of complex payor criteria and supports timely resolution of medication access barriers.

A key component of the new workflow was the integration of clinical decision support tools and access to payor-specific criteria. Leveraging these tools, the new CCPS workflow reduced the average time to treatment by 2 full days, significantly improving patient experience and continuity of care.

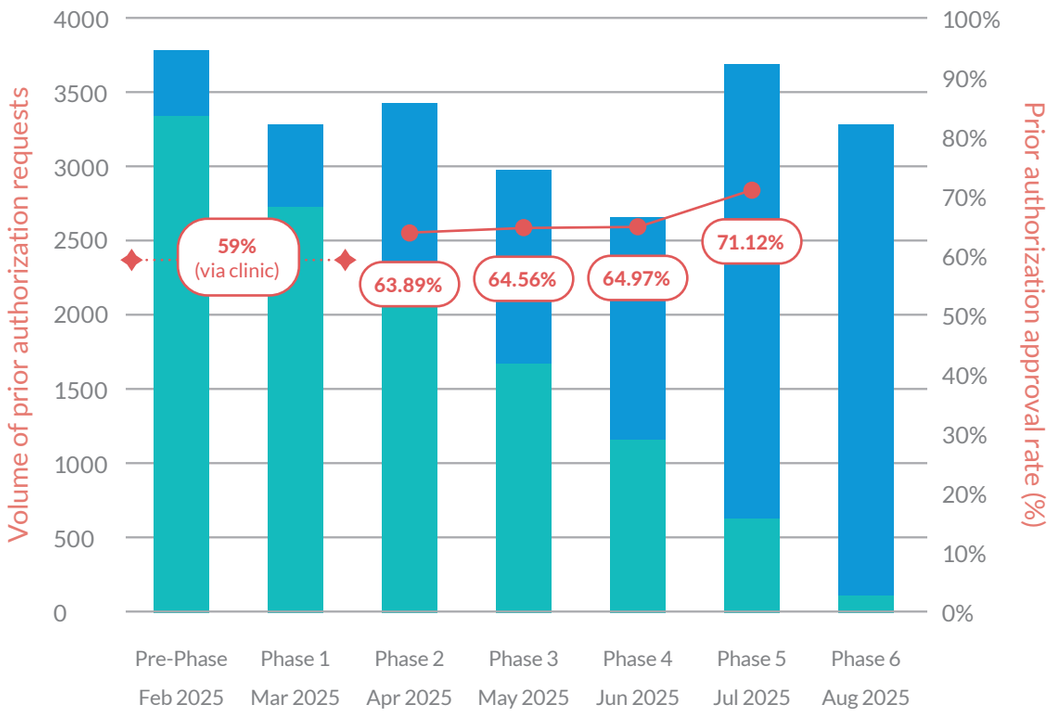
Notably, 28% of all PA requests received since the initiative began were able to be resolved without submission to the payor. Pharmacy technicians contribute to this by assessing brand/generic payor preferences, copay card use, secondary insurance coverage and specific manufacturer payor preferences. This proactive approach reduces unnecessary delays and improves first-pass success rates. If a technician is unable to resolve the request, a clinical pharmacist quickly determines if a covered alternative medication could be recommended to the prescriber so patients receive timely and appropriate therapy.

Of those requests that were submitted to payors for review, 71% received approval. This high success rate is attributed to the CCPS team's familiarity with payor requirements and a standardized workflow with access to payor portals and policies. The team's ability to anticipate documentation needs and align requests with coverage criteria has been instrumental in achieving these results.

The integration of ePA with existing telephone PA workflows has resulted in CCPS managing approximately 3,000 medication PA requests per month. The centralization of ePA management for 38 primary care clinics into the CCPS has led to measurable improvements in efficiency, approval rates and patient care. This model has also reduced variability in PA handling across sites, creating a more consistent experience for both providers and patients.

By leveraging a dedicated team, standardized workflows and clinical expertise, the organization has created a scalable model that supports timely, accurate, patient-centered medication access. Future enhancements include integration of artificial intelligence to further automate and optimize the process, as well as collaboration with Geisinger Health Plan (GHP) to develop a comprehensive front-to-back solution for PA management for health system and GHP members. These innovations will help keep Geisinger at the forefront of efficient, value-driven medication access strategies.

ePA Centralization Outcomes



Meds to Beds plus ED Meds to Beds

Authors: Stacey Tonitis and Kayla Kotch

The Meds to Beds service delivers discharge medications directly to patients in their hospital rooms before they leave for home. This program enhances convenience, ensures timely access to prescribed medications, improves health outcomes, and significantly boosts patient satisfaction by removing barriers to care at a critical transition point.

In 2025, the program saw notable growth. We expanded our service hours on weekdays, and added Sunday coverage at Geisinger Medical Center and Geisinger Wyoming Valley Medical Center, following a successful 2024 pilot at Geisinger Community Medical Center. We also launched a remote Meds to Beds service for Geisinger Shamokin Area Community Hospital, supported by Geisinger Woodbine Outpatient Pharmacy. The program expanded its reach within emergency departments (EDs) and began servicing Geisinger St. Luke's Hospital via curbside pickup through Geisinger Orwigsburg Outpatient Pharmacy.

Performance metrics for 2025 reflect the program's continued success. Year-to-date system capture reached 59.6%, representing a 7.7% increase over 2024 and a 19.3% increase compared to 2023. So far this year, the program has served 31,787 patients and dispensed 93,198 prescriptions — demonstrating both scale and impact.

Looking ahead, we have several exciting developments planned. Delivery services to Geisinger St. Luke's will be expanded from Orwigsburg, and remote services will be launched for Geisinger Bloomsburg Hospital and Geisinger Behavioral Health, supported by Geisinger Buckhorn Outpatient Pharmacy. Additionally, we're planning an opt-out model pilot at Geisinger Lewistown Hospital, designed to streamline access and further improve patient care by making medication delivery the default option.

As demand for Meds to Beds continues to grow, the pharmacy team remains committed to expanding services to meet patient needs. This commitment is especially evident in the ED Meds to Beds program, which provides 24/7 access to the most commonly prescribed medications. By enabling immediate access to essential medications, the program promotes adherence, reduces delays in treatment and helps prevent hospital readmissions.

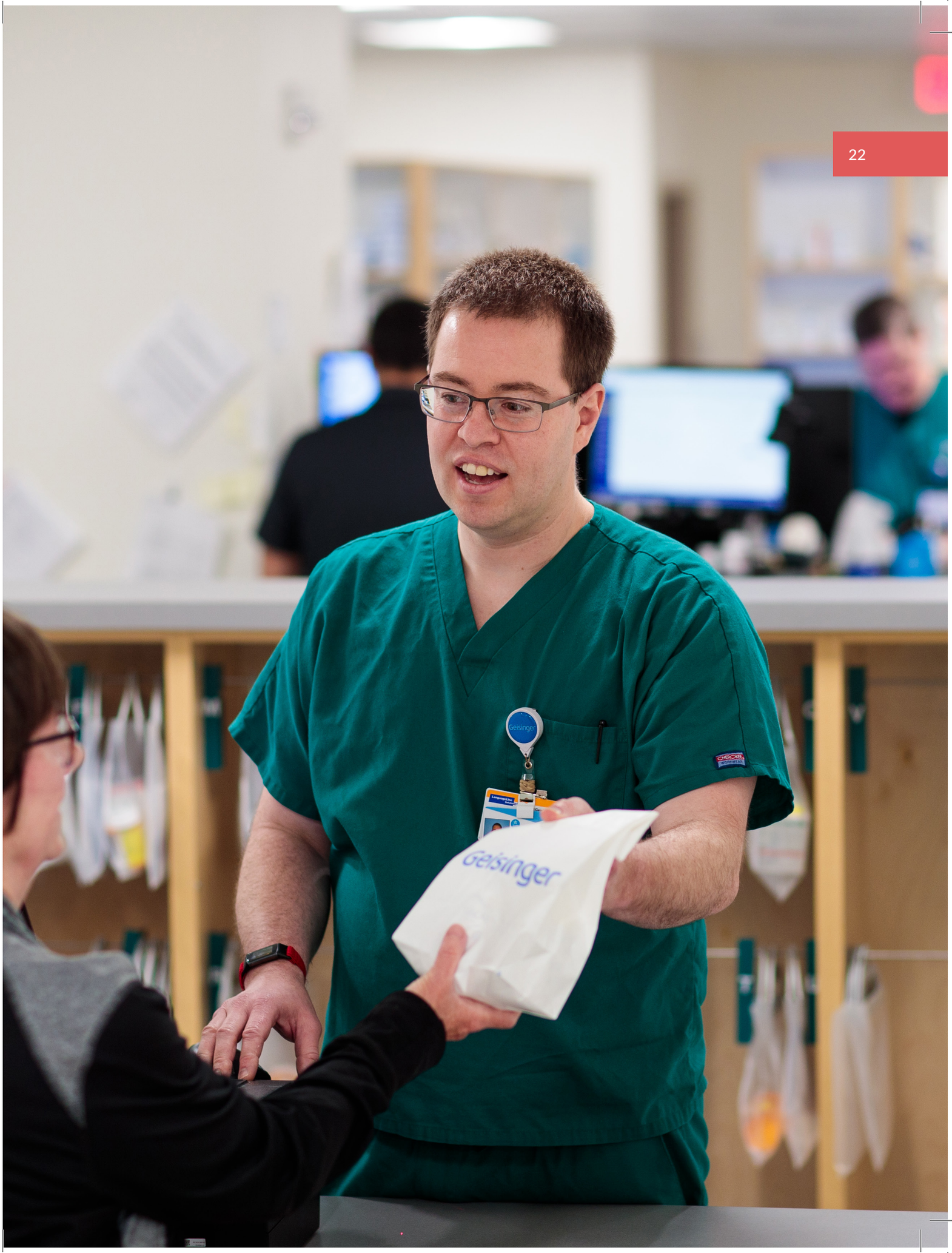
Over the past year, pharmacy teams collaborated with other departments supporting emergency care to expand ED Meds to Beds services to 5 more campuses:

- Geisinger South Wilkes-Barre
- Geisinger Lewistown Hospital
- Geisinger Medical Center Muncy
- Geisinger Medical Center
- Geisinger Community Medical Center (non-24-hour)

In total, ED Meds to Beds is now available at 6 campuses across the Geisinger system.

Key achievements for this service include the dispensing of over 13,000 prescriptions in calendar year 2025, with monthly volumes consistently exceeding the target of 2,000 prescriptions. Notably, Geisinger South Wilkes-Barre set a campus record in June 2025, dispensing 811 prescriptions.

To further enhance the program in the coming year, we are preparing to introduce automated dispensing cabinets into the workflow. These cabinets will support faster, more efficient medication delivery and help scale the program to meet growing demand.


Geisinger
Geisinger

Acute care


116

Transforming cancer care: Expanding home infusion access for blinatumomab therapy

Authors: Benjamin Andrick, Ron Zsido and Nichole Varela-Gonzalez

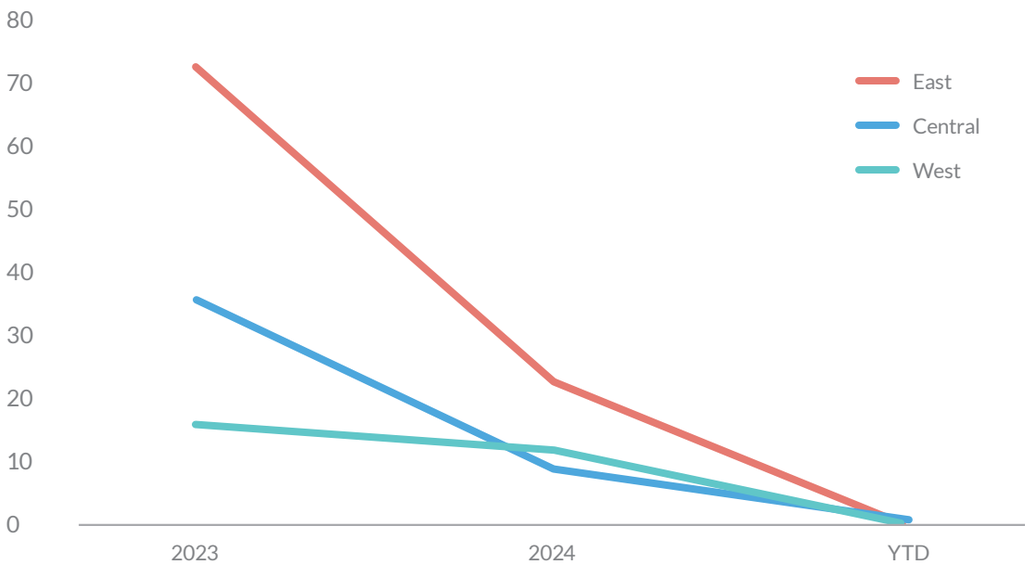
Over the past year, the health system continued to advance cancer care delivery by expanding access to high-acuity therapies in the home setting. Among the most impactful initiatives was the development and implementation of a coordinated home infusion program for blinatumomab, a continuous infusion therapy used to treat adult and pediatric patients diagnosed with acute lymphoblastic leukemia (ALL). This program reflects a strong commitment to patient-centered care, operational excellence, and health equity, particularly for individuals living in rural and underserved communities.

Blinatumomab requires continuous 28-day infusion cycles, which have traditionally been administered in inpatient or outpatient clinic settings. The extended duration of therapy presents significant challenges to accessibility, especially for patients residing in remote areas. These challenges include travel burdens, limited availability of infusion chairs, and fragmented care coordination. In response to these barriers, the Hematology Oncology Pharmacy and Home Infusion Services teams collaborated to design an integrated home infusion model that delivers this critical therapy directly to patients' homes, thereby reducing logistical obstacles and improving continuity of care.

The program was built on a foundation of interdisciplinary collaboration, with structured workflows embedded into Epic and Beacon protocols to ensure clinical safety, operational transparency, and seamless care coordination. The model includes pre-admission planning for therapy initiation and inpatient monitoring, followed by patient and caregiver education on pump operation and infusion bag changes. Supplies are delivered directly to the home, and patients have access to 24/7 clinic support for any pump-related concerns. Subsequent therapy cycles follow standardized workflows that eliminate the need for unnecessary hospitalizations. The integration of the Epic Home Infusion Module in December 2024 further enhanced visibility for the Hematology Oncology team and streamlined documentation processes.

This approach not only reduced the frequency of clinic visits but also made sure prescriptions remained in the health system, supporting continuity of care and financial stewardship. The program's measurable impact has been significant. Clinic visits for infusion bag changes decreased from 129 in 2023 to 44 in 2024. Following the Epic integration, only 1 clinic visit was recorded between January and July 2025. Patients reported improved experiences, citing reduced travel time and increased comfort during treatment. Medication capture also improved, minimizing prescription leakage to external providers. The program successfully provided equitable access to therapy for pediatric and adult patients, regardless of geographic location.

Graph 1.
Outpatient hem/onc clinic blinatumomab administrations from Jan. 1, 2023, to Aug. 21, 2025.



By addressing pharmacy deserts and reducing reliance on clinic infrastructure, the program optimized resource utilization while maintaining high standards of care. Building on this success, leadership teams are now focused on scaling and sustaining the initiative. Future priorities include expanding remote monitoring capabilities to enhance safety and allow real-time clinical oversight. Long-term outcomes such as treatment adherence, relapse rates, and patient-reported experiences are being evaluated to guide continuous improvement. Collaboration with Epic analysts is underway to refine workflows and improve automation, while cost-effectiveness analyses are being conducted to support broader adoption across the health system.

This collaborative model has standardized blinatumomab administration, reduced hospitalizations and clinic visits, and lowered overall costs. Patient feedback has consistently highlighted a preference for home-based care, and the program has served as a catalyst for expanding access to other home infusion services. By minimizing weekend hookups and optimizing resource allocation, the initiative has improved patient outcomes and enhanced system efficiency.

Expanding behavioral health pharmacy services through the Geisinger–Acadia Partnership

Author: Brian Simpkins

In 2023, Geisinger and Acadia Healthcare launched a joint venture to expand behavioral health services across the Geisinger service region. The partnership began with the opening of Geisinger Behavioral Health Northeast in Moosic, Pa., followed by the launch of a second facility in Danville in August 2025. These facilities represent a coordinated effort to enhance access to behavioral health care while integrating pharmacy services into the broader continuum of treatment.

Over the past year, the Moosic facility has undergone significant expansion. All 96 inpatient beds are now operational, and planning is underway to introduce pediatric services and electroconvulsive therapy. Pharmacy services have grown in parallel, with the team expanding from one to three pharmacists. These pharmacists provide inpatient support and lead outpatient Medication Therapy Disease Management services, particularly for patients receiving long-acting injectable antipsychotics (LAIs).

The LAI program is designed to allow continuity of care for patients requiring scheduled injections. Pharmacists coordinate appointments, monitor medication histories and manage adherence. Although regulations limit pharmacist administration of LAIs, the team plays a central role in ensuring timely delivery and rescheduling when necessary. Coordination with Geisinger Specialty Pharmacy and other insurance-designated providers means patients receive their medications without disruption.

Pharmacists at the Moosic facility operate in a multidisciplinary rounding model, supporting 4 behavioral health teams. Their responsibilities include medication management for psychiatric conditions as well as oversight of chronic disease treatment, such as hypertension, diabetes, and heart failure. This integrated approach leads to comprehensive inpatient care.

A distinctive feature of the pharmacy program is the implementation of medication group therapy sessions. These sessions are conducted in group and individual formats, depending on patient needs. Pharmacists provide education on medication regimens, address adherence challenges and answer questions related to side effects and treatment expectations. Family involvement is encouraged, with pharmacists facilitating sessions either in person or virtually to support shared understanding and engagement.

To support safe and efficient transitions of care, the facility has implemented a remote bedside medication delivery service. Pharmacists coordinate discharge medication reconciliation in advance, working closely with the retail pharmacy team at Mount Pleasant. Medications are delivered directly to patients or nursing stations, depending on discharge plans. The secure delivery model improves compliance with facility protocols while enhancing patient satisfaction. The absence of unplanned discharges allows for deliberate planning and reliable execution of this service, which has been recognized as a key differentiator by joint venture partners.

Looking ahead, the pharmacy services developed at Moosic will be replicated and expanded at the Danville facility. The Geisinger–Acadia partnership continues to evolve, with pharmacy services playing a central role in advancing patient care. The integration of clinical expertise, operational planning and patient-centered services positions the behavioral health facilities as models for collaborative, high-quality care delivery. These enhancements reflect a commitment to continuous improvement and innovation in behavioral health pharmacy practice.

Medication reconciliation transformation: Enhancing safety across the care continuum

Author: Brian Simpkins

Geisinger has launched a multi-phase initiative to improve medication reconciliation processes across the system, with a focus on strengthening patient safety and care continuity from admission through discharge. The effort addresses longstanding challenges related to medication accuracy, workflow consistency and system integration.

The initial phase targets transitions from the Emergency Department to inpatient care. Key issues identified include incomplete or inaccurate medication histories, limited availability of medication history technicians (MHTs) and inconsistent use of Epic tools. To address these gaps, Geisinger implemented the Surescripts module to improve medication data integration and secured support to expand the MHT workforce. A notable advancement is the establishment of a virtual medication history team, comprising 5.5 full-time equivalents, designed to support campuses without in-person coverage and yield timely, accurate histories for high-risk patients.

To promote consistency in practice, educational resources — including fast-fact sheets, posters and video walkthroughs — have been developed and distributed across disciplines. These materials are intended to reinforce standardized workflows and support staff in adopting best practices. Financial modeling associated with this phase projects significant cost avoidance, with potential annual savings exceeding $11 million through reductions in medication errors, adverse drug events and hospital readmissions.

The second phase of the initiative focuses on optimizing discharge medication reconciliation. Persistent challenges include premature printing of the After-Visit Summary (AVS), limited integration with skilled nursing facility (SNF) systems and inconsistent delivery of medication education. In response, Geisinger is implementing a hard stop for AVS printing until pharmacist signoff is complete, expanding multi-language support and introducing concise 1-page medication lists tailored for SNFs. These changes aim to improve communication between care teams and patients, reduce medication-related confusion and support safer transitions of care.

Other efforts include evaluating pre-authorization workflows for discharge medications and clarifying roles and terminology to support standardized practices. These measures are designed to reduce delays in medication access, improve documentation accuracy and be sure patients receive clear, actionable information about their medications at discharge.

Together, these phases underscore the importance of accurate medication history as the foundation for safe and effective reconciliation. The initiative is guided by continuous improvement methodology and supported by a governance structure led by Brian Simpkins and Kelly Guza. Through a combination of technology enhancements, workforce development and process redesign, Geisinger's transformation offers a scalable model for health systems seeking to elevate medication safety and operational performance across the patient journey.

Gene therapy administration: A collaborative model for complex care

Author: Sarah Hale

Geisinger continues to expand its capabilities in delivering advanced therapies. Among the most notable are gene therapies for pediatric patients, including onasemnogene abeparvovec-xioi (Zolgensma) for spinal muscular atrophy (SMA) and delandistrogene moxeparvovec-rokl (Elevidys) for Duchenne muscular dystrophy (DMD). These treatments represent some of the most complex and costly interventions in modern medicine, with wholesale acquisition costs exceeding $2 million to $3 million per dose.

Successfully delivering these therapies requires seamless coordination across multiple disciplines, including pediatric neurology, pharmacy, informatics, formulary and procurement, finance and nursing. From securing prior authorizations to managing ultra-low temperature logistics and carefully timed dose preparation, each step demands meticulous planning, precision and teamwork. For example, Elevidys must be placed in an ultra-low freezer or refrigerator within 5 minutes of removal from its specialized shipping container. It must then follow controlled thawing instructions and adhere to a tightly regulated 6-hour timeline to begin infusion after preparation.

Zolgensma is supplied as a kit containing 5.5-mL or 8.3-mL vials, with each kit tailored to the patient's weight — requiring between 2 and 14 vials in specific combinations. To support this complexity, the informatics team provided essential assistance in building customized, weight-based medication records that allow accurate and efficient preparation. Hazardous drug handling and waste disposal considerations were also critical components of our gene therapy readiness strategy, requiring specialized protocols and training.

These coordinated efforts across teams enabled the safe and timely administration of therapies with intricate handling and infusion requirements. By building robust infrastructure and fostering collaboration, Geisinger has positioned itself as a leader in offering transformative therapies that redefine possibilities for pediatric patients. The success of these programs reflects not only clinical excellence, but also a deep commitment to innovation and patient-centered care.

Looking ahead, Geisinger remains focused on expanding access to advanced therapies and refining operational workflows to support future treatments. As gene therapy continues to evolve, our teams are actively engaged in evaluating emerging products, updating protocols and staying ready for next-generation interventions. This forward-thinking approach means our youngest patients continue to benefit from the most cutting-edge care available.

Standardizing Broselow carts: Elevating pediatric emergency care across Geisinger

Author: Emma Wysocki

Since their development in the 1980s, Broselow carts have revolutionized pediatric emergency medicine by streamlining access to lifesaving equipment and supplies. Broselow carts are organized into color-coded drawers that correspond to specific length and weight ranges and have consistently demonstrated several advantages over standard code carts in pediatric resuscitation — including faster equipment access, improved accuracy, enhanced safety and greater user confidence.

Recognizing the many advantages of Broselow carts in pediatric resuscitation, the Pediatric Emergency Medicine team launched a transformative initiative under the Geisinger Transformation program to bring standardized Broselow carts to every emergency department (ED) across the Geisinger system. While many Geisinger EDs already had Broselow carts in use, their organization and contents varied widely. This variation presented an opportunity to unify practices and elevate the standard of care across the system. Acute Care Pharmacy partnered closely with the initiative team to ensure the right medications, quantities and supplies for medication preparation were selected, with careful attention to the nuances of preparing patient-specific, weight-based medications for infants and children.

This collaboration also created an opportunity to pilot a centralized distribution model for medication trays — an innovation that streamlines operations and enhances consistency. The Broselow cart medication trays are prepared and packaged at the Elysburg Distribution Center and shipped to EDs as needed, simplifying the replenishment process and reducing variability across sites. This marks a meaningful shift from the current site-specific approaches used for universal code cart tray replacement and sets the stage for broader standardization efforts.

The success of this initiative not only enhances pediatric emergency care today, but also lays the groundwork for future systemwide standardization of pharmacy-supplied medication trays and kits. It's a powerful example of what can be achieved when teams across disciplines come together with a shared vision for improving patient care. By aligning clinical expertise, operational efficiency and pharmacy innovation, Geisinger is advancing the quality and reliability of emergency response for its youngest patients.

Expanding Care Beyond Walls: Launching Geisinger's Hospital at Home Program

Authors: Michelle Budzyn, PharmD, BCPS and Kelly Bolesta, PharmD, BCPS

Geisinger's Hospital at Home program is an innovative initiative that offers patients hospital-level care from the comfort of their own homes. The program allows patients to remain close to family, friends and pets; avoid unnecessary exposure to infection; and continue healing in safety and privacy — all while maintaining regular contact with their healthcare provider. Since its launch in October 2023 at Geisinger Wyoming Valley Medical Center, the program has expanded to Geisinger South Wilkes-Barre, Geisinger Community Medical Center and Geisinger Medical Center.

To continue delivering hospital-level care in the home, medication access is a critical component of the program. The Acute Care Pharmacy team played a pivotal role in shaping the medication management framework to ensure safety, optimize access and maintain continuity of care. Partnering with other pillars in Enterprise Pharmacy, the acute care team adopted new processes to bridge the gap between traditional inpatient management and current outpatient services. In addition, nursing and physician teams collaborated with pharmacy to establish best practices for medication management, ensuring alignment across disciplines.

Healthcare providers caring for patients in the program can administer medications in any formulation — oral, intravenous, intramuscular, subcutaneous and more. In the hospital, medications are typically dispensed from automated dispensing cabinets. In the home, where this technology is not available, the pharmacy team developed alternative procedures to ensure safe and compliant medication access. For example, the Acute Care Pharmacy team implemented a modified dispensing process that provides a 24-hour supply of medications. To support timely administration of critical medications, care teams are equipped with a medication "tackle box" containing a selection of commonly needed medications. This mobile solution allows clinicians to administer urgent first doses without delay. Controlled substances follow a revised dispensing protocol to eliminate the need for waste in the home, and insulin pens have been introduced to improve safety and ease of use.

One of the challenges encountered in the Hospital at Home program was the administration of intravenous antibiotics requiring multiple daily doses. To streamline the regimen for both nursing staff and patients, the Acute Care Pharmacy team collaborated with the Home Infusion team to implement the use of elastomeric pumps. These portable, disposable infusion devices deliver antibiotics over a predetermined period and offer the advantages of being simple to operate and requiring no electricity or complex programming — making them ideal for home-based care.

Patients in the Hospital at Home program are encouraged to self-administer oral medications under the direction of the nursing team. This approach fosters autonomy and improves adherence while maintaining safety through clear communication. As-needed medications are dispensed with clear, patient-friendly instructions, helping patients and caregivers understand when and how to use them appropriately. The Acute Care Pharmacy team worked closely with Pharmacy Informatics to develop labeling solutions that support safe, clear and patient-friendly medication use in the home setting.

As with traditional inpatient care, medication reconciliation remains a cornerstone of the process. Pharmacists verify discharge medications to ensure accuracy and appropriateness, maintaining a strong commitment to safe transitions of care. The Meds to Beds service has been adapted for the home setting so patients receive their prescribed medications at discharge without needing to leave their home. This eliminates delays and supports adherence to treatment plans.

Overall, the Hospital at Home program represents a significant advancement in redefining healthcare delivery. Through thoughtful planning, interdisciplinary collaboration and a commitment to patient safety, Geisinger is extending the reach of hospital-level care — without compromising quality. Pharmacy Services is proud to be at the forefront of this evolution, making sure care supports healing at home.

Reference

1. Geisinger's Hospital at Home program. Accessed August 12, 2025. *geisinger.org/hospital-at-home*

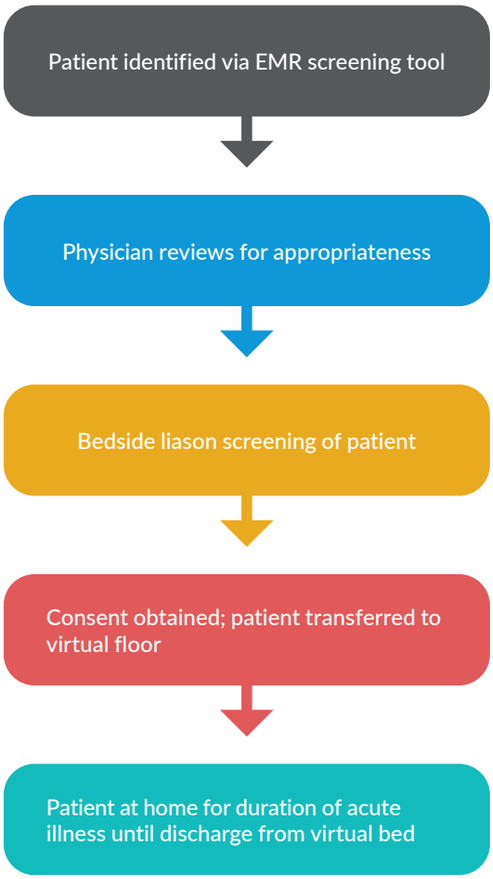
Inclusion criteria & acquisition

Clinical

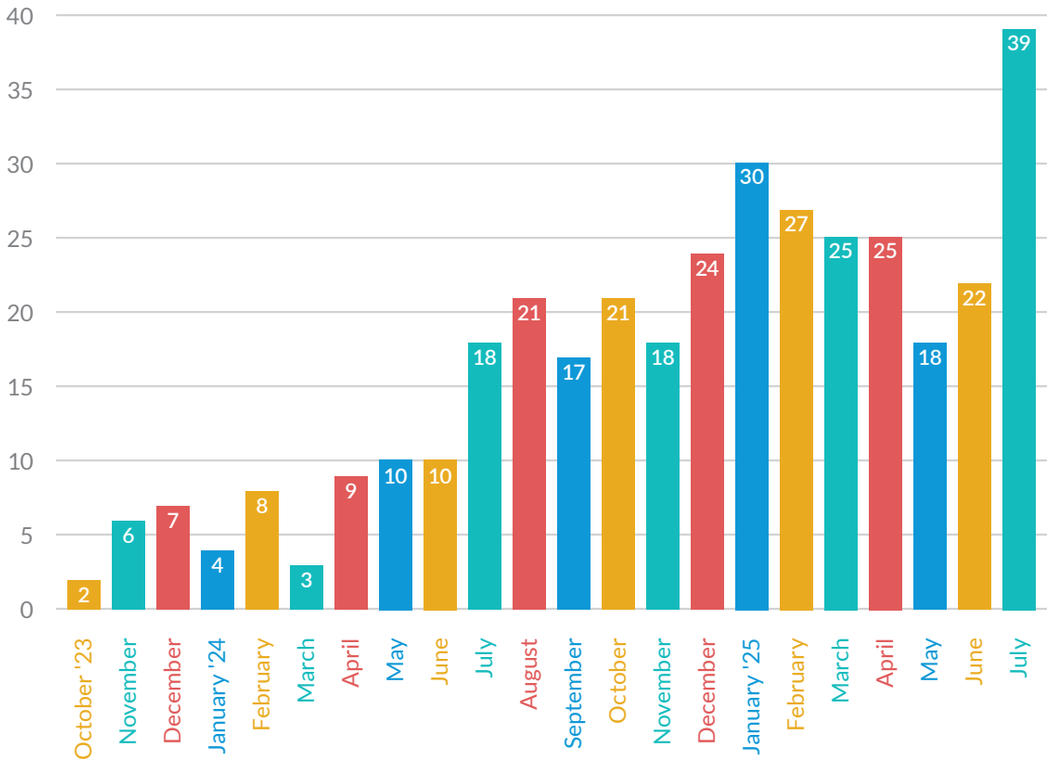
- Inpatient admission criteria
- 21+ years of age

Social

- Connectivity in the home (cellular and/or WiFi)
- Access to a safe living environment that includes:
  - Food
  - Running water
  - Heating/cooling
  - Plumbing
  - Electricity
  - Proper medication storage
- Lives within 25-mile radius of the hub location
- Can obtain 24-hour supervision (case by case basis)



Admissions month to month



Data: Outcomes

Total patients	375
Average length of stay	3.02 days
Escalations to hospital	3.9% (14)
30-day readmissions	12.7% (48)
7-day readmissions	1.9% (7)
Bed days saved	1,214

Restoring cleanroom integrity: HVAC renovations at 2 primary compounding locations

Author: Adam Castro

In 2024, Geisinger completed critical heating, ventilation and air conditioning (HVAC) renovations at 2 of its primary sterile compounding locations — Geisinger Wyoming Valley (GWV) operating rooms and Geisinger Medical Center (GMC) Hematology/Oncology Biologics Pharmacy suite. These upgrades addressed longstanding environmental control challenges that directly impacted sterile compounding operations and patient safety. The renovations represent a significant investment in infrastructure that supports regulatory compliance and the delivery of high-quality pharmaceutical care.

Engineering-driven upgrades

The renovations were initiated following comprehensive engineering assessments that identified persistent issues in temperature and humidity regulation, as well as unstable pressure differentials. These environmental inconsistencies compromised the integrity of cleanroom environments and chemotherapy hoods, posing risks to compliance with U.S. Pharmacopeia (USP) standards <797> and <800>. Inconsistent pressure and exhaust controls created vulnerabilities in sterile compounding operations, threatening regulatory compliance and the reliability of medication preparation. The assessments provided a clear roadmap for targeted improvements that would restore environmental stability and support safe compounding practices.

Operational impact

Environmental deviations had a direct and measurable effect on pharmacy operations. When cleanroom conditions fell outside acceptable ranges, USP guidelines required reduced beyond-use dating (BUD) for compounded sterile products. This limitation hindered the ability to prepare medications in advance, particularly for next-day chemotherapy services. As a result, pharmacy teams had increased medication waste, staffing inefficiencies and delays in patient care delivery. These disruptions strained clinical workflows and highlighted the need for infrastructure improvements that could support operational efficiency and patient safety. The inability to rely on extended BUDs also limited flexibility in scheduling and resource allocation, further emphasizing the importance of environmental control.

Renovation outcomes

The HVAC upgrades included several key enhancements. Air filtration systems were improved to support higher levels of particulate control. Zoned climate control was implemented to allow for precise regulation of temperature and humidity in each cleanroom. Automated pressure monitoring systems were installed to stabilize pressure differentials between rooms and exhaust systems were upgraded to support consistent airflow and containment. Since implementation, both cleanrooms have maintained stable environmental conditions. Notably, no bacterial growth has been detected in either space over the past 7 months, demonstrating the effectiveness of the renovations and the restored integrity of the compounding environments. These outcomes reflect a measurable improvement in environmental quality and reinforce the value of the investment.

A model of collaboration

This success reflects a strong partnership between the pharmacy and facilities teams. A shared commitment to patient safety, regulatory excellence and operational resilience kept the project technically sound and aligned with clinical needs. The teams' coordinated efforts enabled the timely execution of the renovations and reinforced the importance of cross-functional collaboration in achieving infrastructure improvements. Regular communication, joint planning and shared accountability were essential to the project's success and serve as a model for future initiatives.

Looking ahead

The HVAC renovations at GWV operating rooms and GMC Biologics Pharmacy suite represent a foundational step in strengthening Geisinger's sterile compounding capabilities. As Geisinger Pharmacy continues to prioritize environmental integrity in compounding areas, these upgrades serve as a model for future initiatives aimed at enhancing safety, efficiency and patient outcomes. Ongoing monitoring, staff training and proactive maintenance will support continued high-quality care and regulatory compliance across the health system. The lessons learned from this project will inform future infrastructure planning and reinforce Geisinger's commitment to excellence in pharmacy operations.

Pharmacy Stars platform drives systemwide standardization in compounding competencies

Authors: Heidi Yanoski and Adam Castro

Over the past year, the transition of Geisinger's aseptic technique competencies to the Pharmacy Stars® online platform was successfully completed, with the official launch occurring on March 1, 2025. This initiative involved extensive cross-departmental planning and customization to meet systemwide requirements. Instructional resources — including videos, quizzes and slide decks — were developed to support specialized competency templates and distinct competency groups for nonhazardous, hazardous and chemotherapeutic compounders. End-user training sessions were facilitated for site leadership across all locations for smooth, effective implementation.

The shift to Pharmacy Stars has significantly strengthened the Inpatient Pharmacy team's ability to deliver standardized, high-quality education and training. This transition aligns with the advanced cleanroom monitoring protocols introduced in 2024. In addition to managing competencies, Pharmacy Stars is now used to document cleanroom cleaning activities and monitor environmental conditions such as temperature, humidity and pressurization. These functions support consistent regulatory compliance and streamlined reporting across the health system.

In parallel, collaboration with the Outpatient Pharmacy team led to the development of a customized module in Pharmacy Stars tailored to outpatient operational needs. Each retail pharmacy now uses individualized environmental monitoring and cleaning workflows, modeled after inpatient practices. While the structural framework mirrors inpatient processes, outpatient staff competencies are primarily focused on nonsterile compounding techniques and pharmaceutical calculations.

To support compliance with the USP <797> guidelines released in 2023 — which introduced specific competency standards for aseptic technique and hand hygiene — targeted training modules were implemented within Pharmacy Stars. The platform was also extended to include nursing colleagues specializing in allergy dilutions at outpatient allergy clinics. Plans are underway to further expand Pharmacy Stars to encompass more nursing specialties, including home infusion, reinforcing an interdisciplinary approach to safe and standardized compounding practices.

Through this expansion, Pharmacy Stars plays a central role in standardizing compounding processes across Enterprise Pharmacy. The platform promotes systemwide consistency, quality assurance and alignment with regulatory standards, supporting the delivery of safe and effective pharmaceutical care.

Strategic system transition: GHIS adopts Epic to advance home infusion services

Authors: Ron Zsido, Anthony Dicriscio and Jessica Koch

The year 2024 marked a transformative milestone for Geisinger Home Infusion Services (GHIS), as the organization initiated a strategic transition from its long-standing CPR+ operating system to Epic. This shift is expected to redefine workflows, elevate patient care and align GHIS with broader systemwide goals for the foreseeable future.

Since 2008, GHIS had relied on Welsky's CPR+, a platform widely used by more than 400 home infusion companies across the country. Known for its robust capabilities in patient registration, prescription processing and billing, CPR+ served as a reliable operational backbone for GHIS. However, in early 2024, GHIS was notified that CPR+ would be sunsetted by the end of the year, prompting an urgent need to identify and implement a new operating system.

In response, Geisinger formed a dedicated operating system assessment group composed of representatives from GHIS, the Pharmacy Strategy team, and Information Technology. This group conducted a comprehensive evaluation of multiple commercially available home infusion platforms. Although none initially matched CPR+ in terms of performance, the team soon learned that Epic was preparing to launch a dedicated home infusion module. GHIS was invited to join Epic's early adopter group, becoming 1 of only 7 organizations nationwide to participate. This opportunity positioned GHIS at the forefront of innovation in home infusion technology and allowed the organization to help shape the future of the platform.

Epic, already the preferred electronic health record across the Geisinger system, offers a unified platform that integrates all programs under a single digital infrastructure. This integration brings several key advantages. It eliminates the need for double documentation, enhances visibility across inpatient and outpatient pharmacy workflows and streamlines medication ordering and inventory management. Additionally, Epic empowers patient engagement through the MyChart portal and provides advanced reporting and analytics capabilities. These features collectively support GHIS's commitment to operational excellence and improved patient outcomes.

The transition, while strategically beneficial, presented a number of challenges. With an aggressive timeline of less than 8 months from project kickoff to go-live, the project team demonstrated exceptional dedication and resilience. Complexities related to data migration, workflow optimization across multiple departments and comprehensive user training required meticulous planning and strong governance. Support from experienced Epic consultants played a critical role in navigating these hurdles.

A multidisciplinary governance group — comprising experts from pharmacy, nursing, billing, IT, informatics and revenue management — was instrumental in guiding the transition. The team conducted thorough workflow analyses, executed multiple test migrations and implemented role-based training programs. Several days of at-the-elbow support during go-live helped minimize disruptions and led to a smooth adoption process across the organization.

The transition from CPR+ to Epic represents a strategic leap forward for GHIS. Through careful planning, cross-functional collaboration and a shared commitment to excellence, GHIS is now positioned to deliver more integrated, efficient and patient-centered care in the evolving landscape of home infusion services. This change not only aligns GHIS with broader system goals, but also reinforces its dedication to operational excellence and long-term improvements in patient outcomes.

Smart automation in cleanrooms: Metasys enhances sterile compounding compliance at Geisinger

Authors: Nichole Varela-Gonzalez and Adam Castro

In hospital cleanrooms, where sterile compounding and infusion medication preparation occur, maintaining strict environmental controls is essential to patient safety and regulatory compliance. As standards governing compounding spaces have become increasingly rigorous — particularly with the implementation of USP <797> and USP <800> — the need for continuous monitoring and documentation of temperature, pressure and humidity has grown more critical than ever. These environmental parameters directly impact the integrity of sterile preparations and the reliability of pharmacy operations.

Historically, limitations in temperature tracking technology have prevented pharmacy teams from gaining real-time visibility into room pressure conditions. This gap in monitoring has led to instances where cleanrooms had a loss of air pressure without immediate alerts. When such deviations go unaddressed for more than 30 minutes, staff are required to perform a full disinfection process before sterile compounding operations can resume. At non-24-hour sites, this often results in staff arriving to find pressure conditions out of range, prompting urgent remediation efforts and delaying the start of the workday — ultimately impacting patient care and operational efficiency.

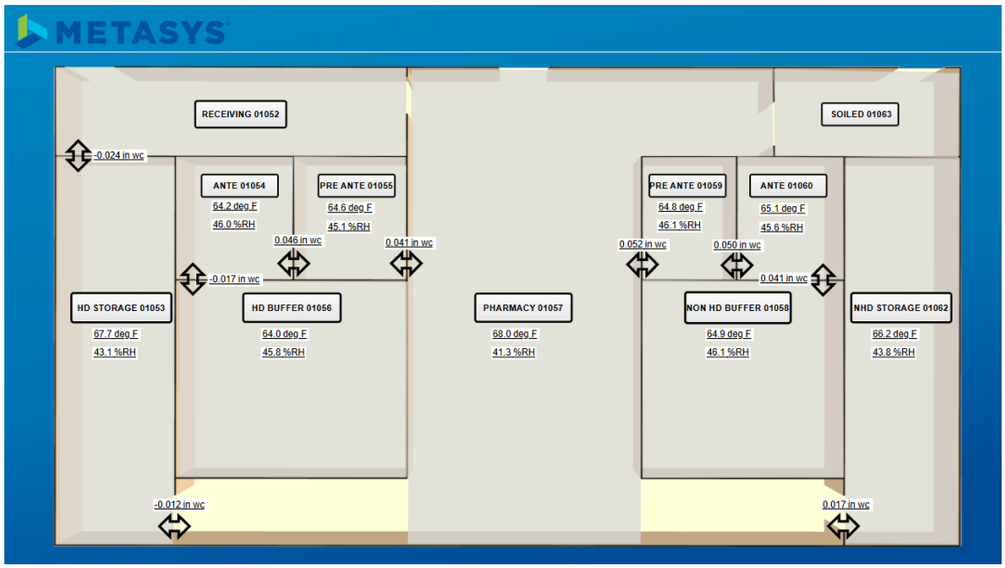
To address these challenges, Geisinger implemented Metasys, the flagship building automation system developed by Johnson Controls. Metasys provides a comprehensive solution that delivers real-time, actionable data across temperature, pressure and humidity parameters. This empowers pharmacy teams with the insights needed to maintain controlled environments and ensure compliance with USP <797> and <800> standards. The system has enabled consistent, safe compounding of infusion medications, supporting the timely delivery of patient care.

Metasys allows pharmacy facilities to customize schematics to match the layout and specifications of individual pharmacy spaces. It supports proactive management of sterile compounding environments by continuously monitoring and electronically logging environmental conditions. The system provides 24-hour access to regulatory metrics and serves as the data backbone for the building maintenance system. By offering a single source of truth for critical environmental values, Metasys enables pharmacy teams to respond quickly and effectively to deviations. Automated alarms are triggered when parameters fall outside acceptable ranges, and all changes and alerts are recorded with time-stamped audit trails to support compliance and accountability.

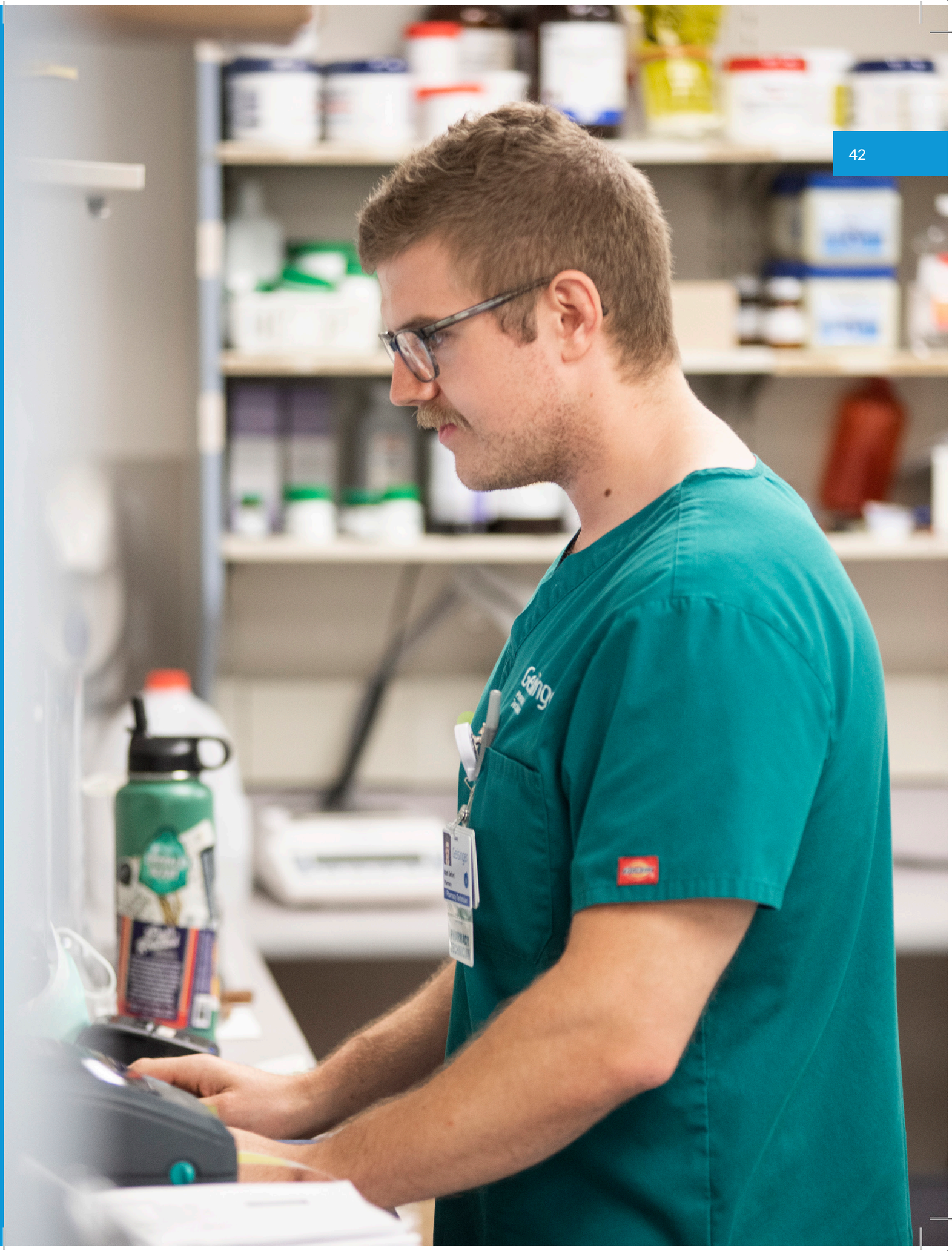
Impact and outlook

Through the integration of Metasys, Geisinger has positioned its Enterprise Pharmacy sites at the forefront of regulatory excellence, operational resilience and patient-centered innovation. This investment not only enhances environmental integrity, but also strengthens the safety and efficiency of sterile compounding practices. As Geisinger continues to evolve its infrastructure and adopt advanced technologies, the implementation of smart automation systems like Metasys demonstrates how innovation can drive compliance, reduce risk and improve outcomes across the health system.

Image 1. Metasys dashboard cleanroom schematic for Geisinger Cancer Center Dickson City, denoting each room's pressure, temperature and humidity.



Formulary & procurement



Geisinger Pharmacy services: Our integrated pharmacy network

Author: Stephanie Gill

Geisinger's integrated pharmacy network continues to support high-quality, cost-effective, evidence-based medication therapy management across central, south-central and northeastern Pennsylvania. Serving more than 1 million residents in 45 counties, the network includes 50+ pharmacy locations encompassing inpatient, outpatient, ambulatory care, home infusion and mail-order services. This infrastructure enables comprehensive pharmaceutical care tailored to the diverse needs of the communities served.

A central component of this network is the Geisinger Pharmacy Distribution Center. Though licensed as a distributor, the center operates exclusively within the Geisinger system. It receives, verifies and transfers pharmaceutical products to internal pharmacy locations, functioning as a closed-loop supply chain. This model enhances operational control, accountability and efficiency across the enterprise, reducing reliance on external distribution channels and improving responsiveness to internal demand.

Geisinger maintains strategic partnerships with more than 50 vendors, including its primary wholesaler, Cencora. These relationships yield consistent access to medications from authorized distributors and support the organization's commitment to safe and effective care delivery. Vendor collaboration also allows Geisinger to respond to supply chain disruptions, manage inventory proactively and maintain continuity of care across all service lines.

In preparation for full enforcement of the Drug Supply Chain Security Act (DSCSA) on Nov. 27, 2024, Geisinger implemented a series of measures to meet federal requirements for serialization and traceability. Enacted in 2014, DSCSA aims to strengthen the pharmaceutical supply chain by enabling tracking of medications from manufacturer to dispenser, thereby reducing the risk of counterfeit products and improving patient safety.

To support compliance, Geisinger pharmacies have adopted ConsortiEX Verify on Receipt® and ScanCast™ technologies. These tools facilitate:

- Serialization and traceability of pharmaceutical products
- Verification of product legitimacy
- Reporting of suspect or illegitimate items
- Compliance with record-keeping and audit requirements

Integration with Epic Willow Inventory and Parata CoreFlex systems ensures seamless data flow and operational alignment. These technologies reinforce Geisinger's commitment to regulatory compliance and continuous improvement in pharmacy operations. The use of interoperable systems also supports real-time inventory management, enhances medication safety and improves workflow efficiency across inpatient and outpatient settings.

Geisinger's investment in advanced infrastructure and technology reflects a broader strategy to align pharmacy operations with national standards while maintaining a patient-centered approach. The organization continues to evaluate emerging tools and regulatory changes to be sure its pharmacy network remains agile, compliant and responsive to evolving healthcare needs.

By maintaining collaborative vendor relationships, implementing robust supply chain safeguards and integrating pharmacy services across care settings, Geisinger reinforces its commitment to operational integrity and patient safety. The pharmacy network remains a foundational element of the health system's ability to deliver coordinated, high-quality care to the communities it serves.

Tenecteplase is here: Navigating the shift of a stroke thrombolytic in the United States prior to FDA approval: a mini-review on rationale, barriers and pathways

Authors: Julian M. Burwell, Jason R. Howay, Lisa Wasko, Samantha Doucoure, Jamie L. Kerestes, Clemens M. Schirmer, David Ermak, Anthony Noto, Philipp Hendrix

Until March 2025, alteplase (TPA) was the sole thrombolytic agent approved by the U.S. Food and Drug Administration (FDA) for the treatment of acute ischemic stroke (AIS). That changed when the FDA granted approval for tenecteplase (TNK), a genetically modified variant of TPA originally approved for myocardial infarction. Although TPA's FDA approval is limited to administration within 3 hours of symptom onset, the American Heart Association/American Stroke Association guidelines and The Joint Commission support its use up to 4.5 hours, based on additional clinical evidence.

Over the past decade, tenecteplase has emerged as a viable alternative to alteplase, demonstrating comparable efficacy and safety in multiple studies. Recent research has provided robust evidence supporting TNK's use in AIS, prompting growing interest in its adoption across stroke systems nationwide. Operational advantages — including single-bolus administration, simplified dosing protocols and lower overall costs — have further strengthened the case for transitioning from TPA to TNK.

The shift from TPA to TNK represents a significant paradigm change in the management of acute ischemic stroke. While adoption rates vary across institutions, TNK's clinical, operational and economic benefits make it an increasingly compelling choice. Continued research and real-world implementation will help refine TNK's role and inform future developments in thrombolytic therapy.

At Geisinger, the pre-FDA approval implementation of TNK was guided by a comprehensive change management strategy. This proactive approach enabled a smooth transition and yielded enduring improvements in stroke care delivery. The experience highlights the importance of strategic planning, stakeholder engagement, and evidence-based decision-making in adopting new therapeutic standards.

For a more detailed exploration of the rationale, implementation strategies and clinical outcomes associated with TNK adoption, readers are encouraged to review the full article available at *Frontiers in Neurology*.

Relevant publication

1. Burwell JM, Howay JR, Wasko L, Doucoure S, Kerestes JL, Schirmer CM, Ermak D, Noto A, Hendrix P. (2025). Tenecteplase is here: navigating the shift of a stroke thrombolytic in the United States prior to FDA approval: a mini-review on rationale, barriers, and pathways. Frontiers in Neurology, 16:1563423.

Hematology & oncology

Geisinger Cancer Center Dickson City opens, expanding access to advanced oncology care

Authors: Justine Zuk and Ralph Ferraro

On June 23, the new Geisinger Cancer Center Dickson City welcomed its first patient, marking a major milestone in the expansion of advanced cancer care across northeastern Pennsylvania. This momentous occasion reflects the culmination of months of tireless dedication and teamwork. Every member of the team — from construction crews and IT specialists to pharmacy staff — played a vital role in bringing the facility to life, working collaboratively to make sure the center was ready to serve the community.

The new center is designed with innovation and compassion in mind. It features cutting-edge technology and a patient-centered layout that prioritizes comfort, safety and efficiency. One of the standout features is the state-of-the-art pharmacy, which includes Qlean air compounding rooms that meet the highest standards for sterile preparation. These advanced facilities allow the safe and accurate delivery of medications, which is critical in oncology care.

In addition to its pharmacy capabilities, the center offers expanded services such as radiation oncology. This addition brings advanced treatment options closer to home for patients who previously had to travel long distances to receive care. By reducing travel burdens, the center helps improve access and continuity of treatment, which can be essential to patient outcomes.

The expanded pharmacy space not only enhances safety and operational efficiency, but also supports the growing and complex needs of oncology patients in the region. With more room and resources, the pharmacy team is better equipped to manage increasing patient volumes and deliver high-quality care.

The opening of Geisinger Cancer Center Dickson City represents a new chapter of hope and healing for the community. The team's unwavering commitment to excellence has laid a strong foundation for the future of cancer treatment in the region, and their work continues to make a meaningful difference in the lives of patients and families.

One year of CAR-T therapy: Advancing personalized cancer treatment at Geisinger

Authors: Lori Stopper, RPh, PharmD, Kayla Aufiero, RPh, PharmD

Geisinger Medical Center in Danville and the Geisinger Cancer Institute have successfully completed the first year of chimeric antigen receptor T-cell (CAR-T) therapy infusions, treating 12 patients with the goal of achieving long-term remission — or even a potential cure — for cancers that are traditionally resistant to treatment. This milestone marks a significant advancement in personalized cancer care and reflects the dedication of multidisciplinary teams committed to improving patient outcomes.

CAR-T cell therapy is a highly specialized form of immunotherapy designed to treat certain types of blood cancers by harnessing the power of the patient's own immune system. The process begins with the collection of T cells — a type of white blood cell — through leukapheresis. These cells are then genetically modified in a laboratory to express chimeric antigen receptors (CARs), which enable them to recognize and target specific proteins found on cancer cells. Once modified, the CAR-T cells are infused back into the patient, where they actively seek out and destroy cancer cells carrying the targeted antigen.

Geisinger's formulary includes 5 CAR-T therapies:

- Tecartus® (for relapsed/refractory acute lymphoblastic leukemia and mantle cell lymphoma)
- Yescarta® (for relapsed/refractory follicular lymphoma and large B-cell lymphoma)
- Abecma® (for relapsed/refractory multiple myeloma)
- Breyanzi® (for relapsed/refractory chronic lymphocytic leukemia, follicular lymphoma, large B-cell lymphoma and mantle cell lymphoma)
- Kymriah® (for relapsed/refractory acute lymphoblastic leukemia, diffuse large B-cell lymphoma and follicular lymphoma)

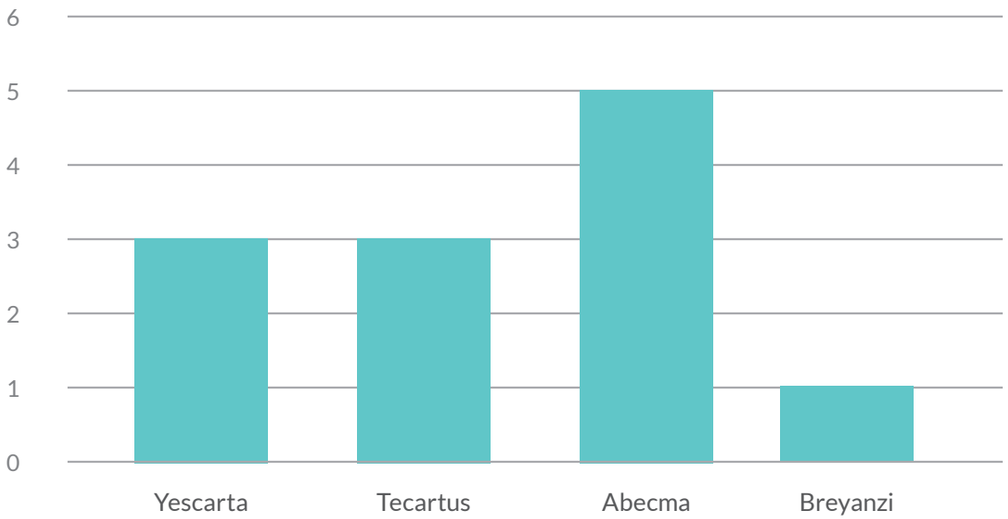
All patients treated experienced cytokine release syndrome (CRS), with severity limited to grade 1 or 2. Tocilizumab is administered with approval from the hematology attending for grade 1 CRS with persistent or refractory fever, and for grades 2 through 4. To date, 2 patients received 4 doses of tocilizumab, 1 patient received 3 doses, and 3 patients received 2 doses.

Immune effector cell-associated neurotoxicity syndrome (ICANS) occurred in 5 patients. Of these, 1 experienced grade 1 symptoms, 3 experienced grade 2 symptoms, and 1 patient passed away before ICANS could be resolved. Steroids are used as the first-line treatment for ICANS, also requiring approval from the hematology attending.

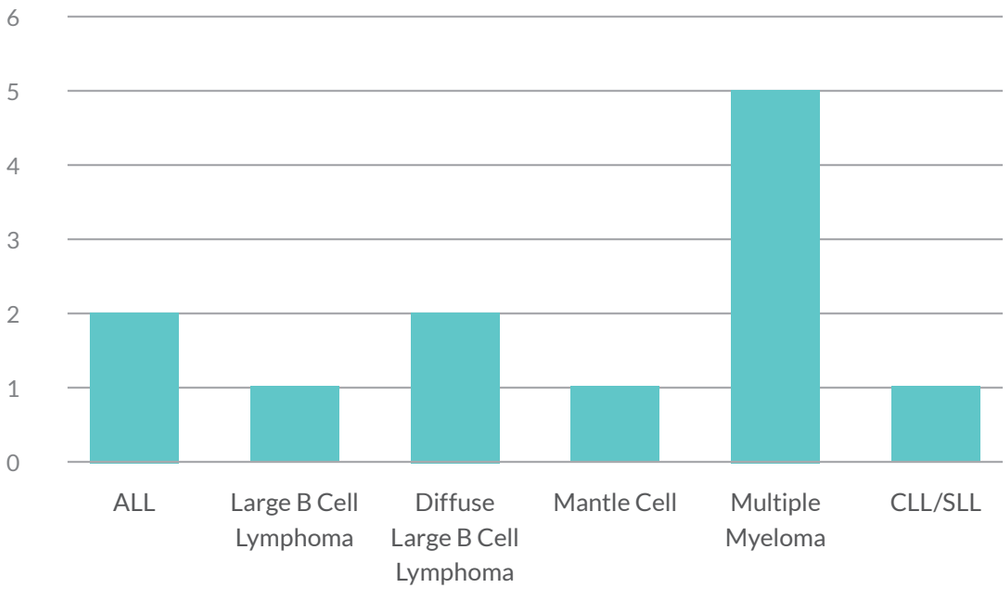
To date, 3 patients have passed away following CAR-T therapy due to complications including fungemia with pancytopenia, recurrence of disease and renal failure. The remaining patients are doing well, with no major deficits reported.

Pharmacists play a critical role in the care of CAR-T patients. Prior to admission, pharmacists contact patients to conduct a comprehensive medication reconciliation. Before discharge, every patient and their caregiver receives counseling on discharge medications. Post-discharge, the medication therapy management clinic closely monitors each patient to ensure adherence to antimicrobial prophylaxis, CAR-T medication protocols and the vaccination schedule associated with CAR-T therapy.

CAR-T Given



Disease States Treated



CPIO

Opioid Wizard: Advancing identification and engagement in opioid use disorder care

Author: Eric Wright

As part of a national initiative to improve care for patients with opioid use disorder (OUD), Geisinger Enterprise Pharmacy contributed to the development and evaluation of Opioid Wizard — a clinical decision support tool embedded in the electronic health record. Designed to assist clinicians in identifying patients with OUD and guiding them toward evidence-based treatment options, the tool reflects a collaborative effort to enhance clinical decision-making and improve patient outcomes.

The project was conducted through a multi-site research collaboration funded by the National Institute on Drug Abuse, involving researchers and clinicians from several major health systems. Geisinger's Center for Pharmacy Innovation and Outcomes led key aspects of the initiative, including tool design, implementation and evaluation. The project highlights the role of pharmacy in advancing clinical informatics and contributing to national strategies for substance use treatment.

"This project demonstrates how pharmacy can lead innovation in clinical decision support," said Eric Wright, PharmD, MPH, professor and system director of CPIO. "While adoption in practice was variable, Opioid Wizard helped us better identify patients at risk and laid the groundwork for future improvements in care delivery."

Opioid Wizard integrates risk models and point-of-care decision aids to support clinicians in recognizing OUD and initiating appropriate care pathways. The tool was designed to be accessible in routine workflows, allowing providers to assess risk and make informed decisions during patient encounters. A randomized controlled trial published in *JAMA Internal Medicine* reported modest but statistically significant improvements in naloxone prescribing and referrals to treatment for OUD.[1] These findings underscore the potential of embedded decision support tools to influence clinical behavior and improve access to care.

In addition to quantitative outcomes, the initiative included a qualitative study of patient perspectives conducted at Geisinger and Essentia Health by researchers Drs. Katrina Romagnoli and Tony Olson. This work informed the development of 6 validated patient archetypes, representing diverse experiences and engagement patterns with opioid-related care. The study, published in *BMJ Open*, highlighted real-world barriers and motivators that influence patient decisions and provided actionable insights for future intervention design.[2] These archetypes are now being used to inform the design of future tools and outreach strategies so that patient needs and preferences are considered in the development of care models.

"Understanding patient perspectives was essential," said lead author Tony Olson, PharmD, PhD, Enterprise Pharmacy leader and co-investigator. "The archetypes helped us see the

real-world barriers and motivators that shape how patients engage with treatment — and that insight is already influencing how we design future interventions."

The project also emphasized the importance of understanding communication dynamics between patients and primary care clinicians. Findings from the qualitative study revealed that perceptions of empathy, trust and clarity significantly influenced patient engagement with treatment recommendations. These insights are being used to guide training and support for clinicians working with patients affected by substance use disorders.

The Opioid Wizard initiative demonstrates Geisinger's commitment to collaborative, patient-informed innovation. By combining data-driven tools with qualitative research, the project contributes to a more responsive and effective model of care for people with OUD. The integration of pharmacy leadership in both the technical and clinical aspects of the project reinforces the value of interdisciplinary collaboration in addressing complex public health challenges.

Geisinger's participation in this national effort reflects its ongoing investment in innovation, research and continuous improvement in substance use treatment. The insights gained from this project continue to inform the development of future tools and approaches aimed at improving care delivery, supporting clinicians and enhancing outcomes for patients with opioid-related conditions.

Relevant publications

1. Rossom RC, Crain LA, Wright EA, Olson AW,… Romagnoli K, …Tusing L et al. Clinical Decision Support System for Primary care of Opioid Use Disorder: A Randomized Clinical Trial. JAMA Intern Med. 2025;185;(9):1079-1089. doi:10.1001/jamainternmed.2025.2535

2. Olson AW, Bucaloiu A, Allen CI, Tusing LD, Henzler-Buckingham HA, Gregor CM, Freitag LA, Hooker SA, Rossom RC, Solberg LI, Wright EA, Haller IV, Romagnoli KM. 'Do they care?': a qualitative examination of patient perspectives on primary care clinician communication related to opioids in the USA. BMJ Open 2025;15:e090462. doi: 10.1136/bmjopen-2024-090462

Innovations in medical marijuana research at the Center for Pharmacy Innovation & Outcomes

Authors: Melissa Kern and Brian Piper

The Center for Pharmacy Innovation & Outcomes (CPIO) continues to advance research in medical marijuana, also referred to as cannabis, through studies conducted at the national, state and local levels. These efforts are supported by grants from the Geisinger Academic Clinical Research Center and contribute to a growing body of evidence aimed at informing clinical practice and policy.

Recent investigations have explored the potential interaction between cannabis and immunotherapy, based on the presence of cannabinoid type 2 receptors on immune cells. While initial observational studies suggested a possible link, further analysis identified methodological limitations, including the failure to account for tobacco use — a known comorbidity in cancer treatment — and statistical inconsistencies. Subsequent work has demonstrated that artificial intelligence can be applied to detect and prevent common statistical errors in published research, including issues related to bivariate analysis, rounding and percentage reporting.

Policy-focused studies have examined the perspectives of pharmacists and other stakeholders regarding the inclusion of medical cannabis data in prescription drug monitoring programs (PDMPs). Unlike states such as New York and Ohio, Pennsylvania does not include cannabis information in its PDMP. This distinction has implications for clinical decision-making and regulatory oversight.

Additional research has assessed the alignment between Pennsylvania's list of qualifying conditions for medical cannabis and the evidence ratings established by the National Academy of Sciences. Pennsylvania ranks 17th nationally, with 8.3% of its qualifying conditions supported by substantial or conclusive evidence, such as chronic pain, multiple sclerosis and chemotherapy-induced nausea and vomiting.

The CPIO has also identified persistent misconceptions surrounding medical marijuana, including the belief that it is prescribed or dispensed through traditional pharmacies. These inaccuracies have occasionally been communicated by healthcare providers, underscoring the need for improved education and clarity in patient-provider interactions.

Utilization trends indicate a significant increase in medical cannabis certifications among Pennsylvania adults, rising from 0.6% in 2018 to 3.8% in 2021. Certain counties, such as Montour, report disproportionately high certification rates relative to population size, while Lackawanna County ranks second statewide for certifications related to chronic pain.

Collectively, these research efforts provide a foundation for future policy development as Pennsylvania considers adult-use legalization and the federal government evaluates reclassification of cannabis from Schedule I to Schedule III. The CPIO remains committed to generating evidence that informs safe, effective, transparent use of medical marijuana in health systems.

Relevant publications

1. Piper BJ, Tian M, Saini P, Higazy A, Graham J, Carbe CJ, Bordonaro M. Immunotherapy and Cannabis: A Harmful Drug Interaction or Reefer Madness? *Cancers (Basel).* 2024 Mar 22;16(7):1245. doi: 10.3390/cancers16071245. PMID: 38610922; PMCID: PMC11011043.

2. Piper BJ, Dobbins DX; et al. Commentary on "Bar-Sela et al. Cannabis consumption used by cancer patients during immunotherapy correlates with poor clinical outcome. *Cancers* 2020, 12, 2447". *Cancers.* 2025. In press.

3. Gregor CM, Tian MY, Tusing LD, Wright EA, Piper BJ, Romagnoli KM. State policies and clinicians' and administrators' perspectives on the inclusion of Medical Cannabis information in the Prescription Drug Monitoring Program. *MedRxiv.* 2025 Jul 25. doi: https://doi.org/10.1101/2025.07.24.25332003

4. Stains EL, Kennalley AL, Tian M, Boehnke KF, Kraus CK, Piper BJ. Medical Cannabis in the United States: Comparing 2017 and 2024 State Qualifying Conditions to the 2017 National Academies of Sciences Report. *Mayo Clin Proc Innov Qual Outcomes.* 2025 Feb 20;9(2):100590. doi: 10.1016/j.mayocpiqo.2025.100590. PMID: 40066150; PMCID: PMC11891685.

5. Kennalley AL, Tian M, Higazy A, Blank S, Stains EL, Piper BJ. Marijuana misconceptions and myths. *Musculosketal Matters.* Fall 2024, 16-17. https://www.mskmatters.org/_files/ugd/065161_c930b25959c148b0916302c63da8c278.pdf.

6. Shetty VA, Gregor CM, Tusing LD, Pradhan AM, Romagnoli KM, Piper BJ, Wright EA. Discussions of Cannabis Over Patient Portal Secure Messaging: Content Analysis. *J Med Internet Res.* 2024 Dec 12;26:e63311. doi: 10.2196/63311. PMID: 39666375; PMCID: PMC11671783.

7. Hirsch AG, Wright EA, Nordberg CM, DeWalle J, Stains EL, Kennalley AL, Zhang J, Tusing LD, Piper BJ. Dispensaries and Medical Marijuana Certifications and Indications: Unveiling the Geographic Connections in Pennsylvania, USA. *Med Cannabis Cannabinoids.* 2024 Feb 20;7(1):34-43. doi: 10.1159/000537841. PMID: 38487377; PMCID: PMC10939510.

8. Mehta SK, Tusing LD, Higazy A, Piper BJ. Medical cannabis certifications for severe chronic and intractable pain: Discerning geographic patterns across Pennsylvania, USA. *MedRxIv,* 2025 Jun 26. doi: https://doi.org/10.1101/2025.06.25.25329221

Unlocking the power of pharmacogenomics: MyCode's role in safer, smarter prescribing

Author: Ryley Uber

The Geisinger MyCode® Community Health Initiative has been underway for nearly 2 decades, positively influencing our understanding of how genomics affect health while enabling pathways for clinical confirmation of genomic results. Yet a key question remains: How can MyCode pharmacogenomic (PGx) data be used to improve medication outcomes — specifically medication effectiveness and safety — for enrolled patients?

Like other medication-based laboratory results, PGx findings — even those within normal ranges — enhance pharmacotherapy outcomes and bolster confidence in prescribing decisions. Additionally, PGx clinical testing only needs to be conducted once, as these results are relevant for a patient's lifetime. This permanence makes PGx data a uniquely valuable resource for long-term medication management. To explore the potential benefits for Geisinger patients, a multidisciplinary team of geneticists and pharmacists examined the population-level implications of how past PGx testing could have benefited patients — and how future testing could continue to do so.

Their initial goal was to estimate how many patients might benefit from testing if conducted today across the entire population. Among more than 170,000 patients with research-only genomic data, an overwhelming 99.8% had at least 1 variant that could influence prescribing decisions, and 91.7% had 3 or more such variants. Additionally, 26.9% of patients had previously received a medication that interacts with their genomic profile (i.e., drug-gene interaction), further demonstrating the value of PGx results at the time of prescribing. These findings underscore the potential for PGx data to proactively guide safer, more effective medication choices.

Ongoing work is focused on retrospectively characterizing responses to these drug-gene interactions, which were unknown at the time of prescribing. Preliminary findings suggest that many adverse medication reactions may be explained by genomics. For instance, patients who are SLCO1B1 Poor Function carriers were more likely to have a documented muscle pain adverse event while taking a statin, compared with those with SLCO1B1 Normal Function. These insights could inform future prescribing practices and reduce the risk of preventable adverse events.

The genomic data used for these analyses cannot be directly returned to patients, as it does not meet the required clinical standards. It must be clinically confirmed using these standards before returning to patients and their clinicians. Therefore, future efforts will aim to clinically confirm these results and prioritize testing for patients with the greatest need — particularly those with high-risk medication profiles or histories of adverse reactions.

These efforts will also ensure that these strategies may be replicated across other health systems, as this will be essential to advancing public health on a national — and potentially international — scale. By building a framework for clinical confirmation and integration of PGx data into routine care, Geisinger is helping to shape the future of precision medicine and medication safety.

99.8%

of patients have 1 or more PGx variants
that can influence prescribing

91.7%

of patients have 3 or more PGx variants
that can influence prescribing

26.9%

of patients have previously received a
medication that interacts with their genome

Geisinger Health Plan

Centralizing oncology drug authorizations: Geisinger's partnership with OncoHealth drives efficiency and savings

Authors: Jessie Bitler and Kimberly Clark

OncoHealth began overseeing Geisinger Health Plan's Medicare Part B oncology drug prior authorizations for non-Geisinger providers on May 23, 2024. This initial implementation represented a strategic advancement in optimizing the approval process for oncology therapies, yielding appropriate, efficient, cost-effective care for Geisinger members. The transition marked a significant step toward streamlining complex authorization workflows in a high-cost, high-impact therapeutic area.

On Oct. 1, 2024, the program expanded to encompass Commercial, Exchange and CHIP lines of business. This broadened scope enhanced operational consistency and administrative efficiency across more lines of business, reducing variability and improving turnaround times for authorization decisions. Then, on Dec. 2, 2024, the Medicaid line of business was transitioned to OncoHealth, completing the transition of prior authorizations for medical oncology drugs. This full integration allowed for a unified approach to oncology drug management across all coverage types.

The integration of OncoHealth continued to evolve in 2025. On Jan. 1, 2025, Geisinger providers were incorporated into the program, allowing all participating providers to benefit from a unified, centralized system for managing oncology drug authorizations. This expansion enabled optimized workflows for the health plan, reduced administrative burden for providers, and created additional opportunities for cost savings.

Further expansion occurred on April 1, 2025, when OncoHealth assumed responsibility for prior authorizations of oncology drugs under the pharmacy benefit. This extension applied to all lines of business and further streamlined care for Geisinger members and patients. By consolidating both medical and pharmacy benefit authorizations under a single vendor, Geisinger improved coordination and reduced delays in therapy initiation.

As of June 2025, delegating oncology drug authorizations to OncoHealth has generated $8,572,962.45 in savings. Geisinger Health Plan's partnership with OncoHealth will continue to result in additional savings over time, while maintaining high standards for clinical appropriateness and patient access. The program's success demonstrates the value of centralized, expert-driven authorization management in complex therapeutic areas.

Looking ahead, Geisinger and OncoHealth plan to explore further enhancements, including predictive analytics, real-time benefit tools and expanded provider education to support optimal prescribing and utilization. These efforts will help oncology patients receive timely, evidence-based therapies while supporting the financial sustainability of care delivery.

Medicare drug price negotiation: Preparing for maximum fair prices and their systemwide impact

Author: Jamie Miller

The passing of the Inflation Reduction Act included a provision allowing the Centers for Medicare & Medicaid Services (CMS) to negotiate maximum fair prices (MFPs) for specific drugs covered under Medicare Part D. The goal is to make medications more affordable for Medicare members and reduce overall costs for the Medicare program. This marks a historic shift in federal drug pricing policy, giving CMS direct authority to negotiate prices for high-cost medications.

The first MFP list of drugs takes effect on Jan. 1, 2026. For that year, the list includes 10 drugs:

- Eliquis
- Enbrel
- Entresto
- Farxiga
- Fiasp
- Imbruvica
- Januvia
- Jardiance
- Stelara
- Xarelto

For 2027, CMS has selected 15 more drugs, which include a mix of Part D and Part B medications. These selections are based on total Medicare spending and lack of generic or biosimilar competition.

CMS has placed specific requirements on health plans regarding MFP drugs. Health plans must include MFP drugs on their formularies. If a generic or biosimilar is available, plans may cover that alternative instead of the original MFP drug. However, plans are still permitted to apply utilization management tools such as prior authorization and step therapy to MFP drugs, provided these tools are clinically justified and compliant with CMS guidance.

Dispensing pharmacies must also meet new requirements to prepare for the implementation of MFP drugs. Pharmacies must enroll in the Medicare Transaction Facilitator (MTF) system to receive manufacturer refund payments for MFP drugs they dispense. The MTF consists of 2 modules: a data module (MTF DM) for submitting claims and a payment module (MTF PM) for receiving refunds. Enrollment is mandatory for any pharmacy participating in Medicare Part D networks, and failure to enroll may result in exclusion from dispensing MFP drugs.

While the MFP program is expected to reduce costs for Medicare beneficiaries, its impact on other lines of business remains uncertain. Some analysts have hypothesized that manufacturers may offset losses from Medicare negotiations by increasing prices for commercial payers or reducing rebates. Others suggest that the program could lead to broader pricing reforms if adopted by other payers or states. As such, the ripple effects of MFP pricing could reshape the pharmaceutical landscape beyond Medicare.

Geisinger Health Plan (GHP) will continue to monitor the implementation and impact of the Medicare MFP program throughout calendar year 2026. This includes tracking changes in drug pricing, formulary dynamics and pharmacy reimbursement across all lines of business. GHP remains committed to ensuring access to affordable medications while adapting to evolving regulatory and market conditions.

Navigating pharmaceutical tariffs: Preparing for price pressures and supply chain disruptions

Author: Jamie Miller

Tariffs on imported pharmaceuticals are likely to lead to increased drug prices and potential shortages, impacting patients, providers and healthcare systems. While tariffs aim to protect domestic industries, public health experts anticipate that the costs of tariffs on imported drugs will likely be passed on to consumers, potentially increasing costs for families, insurance companies and government programs. This shift could have far-reaching implications for affordability, access and equity in healthcare delivery.

The U.S. pharmaceutical supply chain is highly globalized. Branded drugs are primarily imported from high-income countries such as Ireland, Germany and Switzerland, while generic drugs — which account for approximately 90% of all prescriptions filled in the U.S. — are mainly sourced from India and China. Tariffs on these imports could lead to price increases, shortages and quality concerns, especially for generics with thin profit margins. These disruptions may disproportionately affect vulnerable populations who rely on low-cost medications.

Because many medications are imported, we expect tariffs to significantly affect drug pricing. For brand-name drugs, tariffs may raise prices for high-cost specialty medications. Manufacturers might pass these costs to payers, impacting formulary design, rebate structures and overall plan affordability. Medicare Part D premiums could rise, affecting member access and adherence. For generic drugs, tariffs could exacerbate existing shortages. Some manufacturers may exit the U.S. market, forcing reliance on more expensive branded alternatives. Hospitals may face higher acquisition costs for essential generics, straining pharmacy budgets and procurement strategies.

These tariffs could impact both the health plan and the clinical enterprise. The health plan may face increased claims costs and premium pressures, along with challenges in maintaining formularies and preferred drug lists. The health system could experience rising pharmacy procurement costs, greater reliance on 340B pricing and group purchasing organizations (GPOs), and strain on budget forecasting and value-based care models. These financial pressures may require strategic adjustments to maintain quality and access while managing cost containment.

While tariffs may be intended to bolster the U.S. economy and incentivize domestic production, without careful implementation, they risk causing affordability and access issues for patients. Health plan and hospital leaders must stay proactive, informed and engaged to navigate this evolving landscape. This includes monitoring policy developments, assessing supply chain vulnerabilities and preparing contingency plans to protect continuity of care.

Collaboration across pharmacy, finance, supply chain and clinical teams will be essential to mitigate risks and adapt to changing market conditions. As the situation evolves, Geisinger will continue to evaluate the impact of pharmaceutical tariffs and advocate for solutions that protect patient access and system sustainability.

Achieving excellence: The strategic growth of GHP Pharmacy Programs

Authors: Kelly Faust, Kristen Scheib, Tricia Heitzman and David Griffith

The GHP Pharmacy Programs team was established in early 2020 with the strategic goal of developing and implementing initiatives aimed at enhancing pharmacy Star ratings, improving HEDIS pharmacy measure outcomes, and optimizing drug utilization reviews (DUR). Prior to the formation of this dedicated team, these efforts were managed by just 2 pharmacists and 1 technician, who balanced these responsibilities alongside other departmental initiatives in GHP Pharmacy. The creation of a focused team marked a pivotal shift toward more structured, data-driven performance improvement.

Although some improvement was observed in key measures, sustaining continued progress and achieving meaningful cost savings proved challenging. In response, senior leadership approved the establishment of the GHP Pharmacy Programs team. This newly formed team evolved to include 3 specialized sub-teams: GHP Pharmacy Star Adherence, GHP Medication Therapy Management (MTM) and GHP HEDIS/Drug Utilization Review — each focused on driving targeted improvements within their respective areas. This structure enabled deeper expertise, clearer accountability, and more agile response to performance trends.

The GHP Pharmacy Star Adherence team is tasked with improving all 3 Star Adherence measures (cholesterol, diabetes, hypertension), the statin use in persons with diabetes (SUPD) measure, and other quality Star measures through various outreach activities including live calls, IVR calls, MyChart messages and letters. The team was slowly built up starting in 2020 and today consists of 1 pharmacist coordinator, 2 pharmacists, 3 certified technicians and 7 pharmacy service representatives. This growth reflects the increasing complexity and scale of adherence outreach efforts.

The total number of members that met the criteria for at least 1 of the 3 measures rose from approximately 57,000 in 2019 to nearly 70,000 in 2024. During that time, the team was built, RxAnte was implemented to better identify members for outreach and track outreach activity, and initiatives were created to better incorporate collaboration within Clinical Enterprise Pharmacy. In 2024, the team made over 34,000 live calls and reached more than 47% of the members attempted. In direct reflection of these improvements to the process, team composition, increased outreach and collaboration, the adherence and SUPD rates have risen considerably from 2019 to 2024.

From 2015 – 2019 there was a limited outreach plan for the 3 adherence measures.

In 2020, outreach efforts increased.

D08: Medication adherence for diabetes medications									
Measure	Star 2017 MY2015	Star 2018 MY2016	Star 2019 MY2017	Star 2020 MY2018	Star 2021 MY2019	Star 2022 MY2020	Star 2023 MY2021	Star 2024 MY2022	Star 2025 MY2023
H3924-PP0	81	82	83	84	85	87	88	89	88
H3954-HM0	82	82	83	85	86	88	88	89	89

D09: Medication adherence for hypertension (RAS antagonists)									
Measure	Star 2017 MY2015	Star 2018 MY2016	Star 2019 MY2017	Star 2020 MY2018	Star 2021 MY2019	Star 2022 MY2020	Star 2023 MY2021	Star 2024 MY2022	Star 2025 MY2023
H3924-PP0	85	84	85	87	87	90	90	92	92
H3954-HM0	84	84	85	87	87	89	90	91	91

D10: Medication adherence for cholesterol (statins)									
Measure	Star 2017 MY2015	Star 2018 MY2016	Star 2019 MY2017	Star 2020 MY2018	Star 2021 MY2019	Star 2022 MY2020	Star 2023 MY2021	Star 2024 MY2022	Star 2025 MY2023
H3924-PP0	80	80	81	84	86	89	89	91	91
H3954-HM0	80	81	82	84	86	88	89	91	91

Star 2026 (MY 2024) data is yet to be finalized however early indicators as of 8/01/2025 show that both contracts should again see improvement compared to 2023 except for HMO Diabetes which maintained its 2023 rate.

RxAnte was implemented 11/2019 used to identify members for outreach.

From 2021 – 2022 staffing was increased to its current state to increase the number of outreaches made to support continued rate improvement.

The GHP MTM team is tasked with administering the components of the CMS Medication Therapy Management program, including the Comprehensive Medication Review (CMR) and Targeted Medication Review (TMR). Prior to 2022, the MTM program was outsourced to a vendor, OutcomesMTM, with 1 GHP pharmacist assigned to oversee the process, validate measure data and report to CMS.

With the results of the CMR completion rate for the Star measure being less than desirable, senior leadership decided in September 2021 that starting Jan. 1, 2022, the MTM process would be brought in-house. For 2022 and 2023, the completion of CMRs and TMRs was done with in-house staffing, while reporting and documentation remained in the OutcomesMTM platform and the roster of MTM-eligible members was maintained in Excel. In 2024, the process was completely moved into Epic, including all reporting, documentation and housing of the MTM-eligible member list. This transition significantly improved workflow efficiency and eliminated duplicate documentation.

To be successful, the process required collaboration between GHP Pharmacy, CCPS, MTDM, Geisinger 65 Forward and Geisinger Retail Pharmacy. The CMR completion rate exceeded expectations, rising from approximately 66% in 2021 to over 94% in 2023. Completion rates for 2024 are yet to be released; however, early reporting indicates they should be at 94% once again.

The HEDIS/DUR team was officially formed in 2021, with 2 pharmacists fully dedicated to improving HEDIS rates and DUR initiative outcomes. Prior to 2021, pharmacists on the Star Adherence team were also tasked with impacting HEDIS rates and DUR initiatives. In 2022, a technician position was added to increase the team's capacity and impact.

Since its creation, the team has revised or developed over 25 different initiatives that remain active today. These initiatives include retrospective drug utilization reviews aimed at improving patient outcomes; ensuring medication safety; optimizing therapeutic outcomes; identifying fraud, waste and abuse; and improving pharmacy HEDIS rates.

Brought in-house to include GHP, CCPS, 65 Forward and MTDM staffing.

Results Trend

Outcomes

D11: MTM Program Completion Rate for CMR									
Measure	Star 2017 MY2015	Star 2018 MY2016	Star 2019 MY2017	Star 2020 MY2018	Star 2021 MY2019	Star 2022 MY2020	Star 2023 MY2021	Star 2024 MY2022	Star 2025 MY2023
H3924-PP0	49	59	61	64	70	72	67	93	94
H3954-HM0	49	59	61	64	70	72	67	93	94

Ratings Trend

D11: MTM Program Completion Rate for CMR									
Measure	Star 2017 MY2015	Star 2018 MY2016	Star 2019 MY2017	Star 2020 MY2018	Star 2021 MY2019	Star 2022 MY2020	Star 2023 MY2021	Star 2024 MY2022	Star 2025 MY2023
H3924-PP0	3	4	2	2	2	3	3	5	5
H3954-HM0	3	3	2	2	3	3	2	5	5

Outcomes

Star 2026 (MY 2024) data is yet to be finalized. However, early indicators as of Aug. 1, 2025, show that both contracts should be ~94%.

Brought in-house to include GHP, CCPS, 65 Forward and MTDM staffing.

DUR/HEDIS team initiatives

Weekly initiatives

Buprenorphine with Opioids Report
Clinical review of member claims to determine if there is a need for medical director's intervention.

Duplicate Anticoagulant Report
Clinical review of member claims and phone outreaches to members if intervention is needed.

FWA Report
ACE/ARBs, statins, inhalers or 1-day supply claims billed incorrectly are identified and pharmacies are contacted to rebill and process claims correctly.

AMR telephone outreach
Phone outreach to members and providers for non-compliant members and/or members on suboptimal therapy.

PQA INR Report
Phone outreach to providers for members on warfarin therapy and overdue for an INR lab draw.

Monthly DUR initiatives

DPP4/GLP1 Duplicate Therapy Report
Outreach to prescribers of members that are actively filling DPP-4 and GLP-1 medications or 2 GLP-1/2 DPP-4 medications at the same time.

Opioid Overutilization Report
Clinical review of members on high-dose opioids from multiple prescribers to determine clinical appropriateness.

Tobacco Cessation Report
Letters sent to members with resources for members who are on prolonged tobacco cessation therapy to give them extra assistance.

Diabetes/ statin member adherence letters
Member letters sent for diabetes adherence and statin adherence.

STENT Medication Adherence Report
Member adherence letters sent as well as telephone outreach made to non-compliant members for antiplatelet, beta-blocker, statin.

TNF/Oral Oncology Report
Clinical review and telephone outreach made to providers for members overdue for a follow-up appointment with their specialist.

Monthly HEDIS initiatives

HEDIS (AMR, AMM, SAA, SPC, SPD, PBH) Member Adherence Letters
Adherence letters sent to members who are non-compliant for any of the following HEDIS measures: AMR, AMM, SAA, SPC, SPD, PBH.

HEDIS SPC Provider No Statin Letters
Letters sent to providers to recommend statin therapy for members that are non-compliant for the SPC measure.

HEDIS SPD/Star SUPD Provider No Statin Letters
Letters sent to providers to recommend statin therapy for members that are non-compliant for the SPD/SUPD measures.

PQA AMO Report
Telephone outreach to providers for members on long-term opioid therapy that are due for a yearly drug screen.

Quarterly DUR initiatives

Duplicate Specialty Report
Clinical review of member claims to determine if there is a need for intervention.

Duplicate Buprenorphine Report
Clinical review of member claims to determine if there is a need for intervention.

Duplicate Antipsychotic Report
Letters sent to providers for members receiving duplicate antipsychotics.

Concurrent Opioid and Antipsychotic Medication Report
Letters sent to providers for members with concurrent use of opioids and antipsychotics.

Cystic Fibrosis Member and Provider Letters and Geisinger Enterprise nurse collaboration
Adherence letters sent to members and providers for members who are non-compliant for their cystic fibrosis medication(s).

Quarterly HEDIS initiatives

HEDIS UOP – Use of Opioids from Multiple Providers Report
Letters sent to providers who have members filling opioids from multiple prescribers.

HEDIS DAE – Use of High-Risk Medications in Older Adults
Letters sent to providers who have members over the age of 65 that have filled 2 or more high risk medications.

HEDIS AMR-Provider Letters
Letters sent to providers who have members that are non-compliant for the AMR measure.

HEDIS AMR – Geisinger Pulmonologist Report
Report includes AMR rates and fill history for members seeing a Geisinger pulmonologist and shared with Geisinger Pulmonology Department.

Other initiatives

Biannual OPS 18 Medicaid Hepatitis C Report
$1,000 per member that obtains SVR cure rate.

Medicaid Expansion Zone Adherence Program
Weekly telephone outreach to non-adherent to at least 1 maintenance medication and have at least 1 of the following chronic conditions: asthma, CAD, CHF, CKD, COPD, diabetes.

In 2024, these initiatives accounted for close to 2,000 phone calls to members, more than 14,000 letters sent to members, and nearly 13,000 letters sent to providers. In addition, more than 400 claims were corrected through outreach to pharmacies. These efforts resulted in approximately $1.8 million in savings and bonus payments. While the team is small in size, its value and impact are substantial.

Team	Initiative	Type	Amount
HEDIS/DUR	HepC	Bonus payment from DHS	$245,500.00
HEDIS/DUR	AMR	Bonus payment from DHS	$1,185,945.00
HEDIS/DUR	Duplicate therapy	Savings - Annualized*	$299,845.80
HEDIS/DUR	Claim corrections	Savings - Per fill**	$57,595.39
		Total	**$1,797,866.19**

* ***Annualized Savings*** *depicts the calculation of the actual per script savings multiplied by 12 By calculating per script savings, it accounts for 30 vs 90 day supplies.*

** ***Savings per fill*** *is the actual savings that occurred due to the team's work with the pharmacy to have the claim(s) run correctly. Without the intervention, GHP would have paid more for the same fill.*

The creation of the GHP Pharmacy Programs team, along with collaboration across various pillars within Clinical Enterprise Pharmacy, has yielded significant benefits. Many of these initiatives would not have achieved their current level of success without this partnership, underscoring the impactful results that can be attained when GHP Pharmacy and Clinical Enterprise Pharmacy work together effectively. This model serves as a blueprint for scalable, interdisciplinary approaches to improving health plan performance and patient outcomes.

[1] Source: Acumen final data for 2019 vs. 2024.

[2] MTM data from CMS final Star Ratings 2023 (CY 21 data) vs 2025 (CY 25 data).


116

Knowledge management

Establishing a postgraduate training program in specialty medicine and cannabis practice

Author: Daniel Longyhore

Enterprise Pharmacy, in collaboration with Geisinger College of Health Sciences and its Center for Substance Use Research and Education (SURE), has launched a new postgraduate training initiative focused on specialty medicine and cannabis practice and policy. The program is supported through the College's Academic Clinical Research Center. This initiative reflects a structured approach to addressing the evolving role of medical marijuana in clinical care.

The 24-month postgraduate program is designed to advance the understanding and application of evidence-based medical marijuana use in the management of complex conditions recognized by the Commonwealth of Pennsylvania. The program does not prepare pharmacists for dispensary roles. Instead, it equips them to critically evaluate clinical evidence, engage in patient-centered care and contribute to health system-level improvements in documentation, safety and policy development.

The first year of the training emphasizes clinical immersion across a range of specialty practice areas. Postgraduate pharmacists rotate through departments such as gastroenterology, neurology and behavioral health, working alongside pharmacists who manage conditions including seizure disorders, inflammatory bowel disease, multiple sclerosis, anxiety and depression. These rotations are designed to provide a comprehensive understanding of conventional treatment approaches while allowing the trainee to identify opportunities for understanding where patients may be using cannabis-based therapies.

During these clinical experiences, trainees assess current practices and explore ways to improve how patient-reported cannabis use is documented and addressed in care planning. A focus of the program is the integration of medical marijuana data into the electronic health record. Accurate documentation is essential for identifying potential drug interactions and ensuring safe, coordinated care. The trainees are expected to contribute to the development of clinical pathways, decision-support tools, and documentation standards that guide conversations between prescribers and patients regarding cannabis use.

In addition to clinical exposure, fellows engage patients directly to understand their experiences with medical marijuana. These interactions help inform how the substance affects disease progression, symptom management, and overall quality of life. The insights gained during this phase support the training program's broader goal of improving care delivery and enhancing patient safety.

The second year of the program shifts focus to research and policy development. As part of SURE, the trainee will work closely with its director, Vanessa Troiani, as well as staff scientist Antoinette Discrisco. Building on the clinical foundation established in the first year, trainees investigate systemic approaches to cannabis integration, collaborate with other health systems and engage with local and state policymakers. Their work may include developing algorithms for clinical decision-making, proposing documentation standards, and contributing to policy discussions that govern access, use and provider engagement with medical marijuana.

Graduates of the program will be prepared for diverse career paths, including ambulatory care pharmacy, academic roles and research-focused positions. Their training supports the integration of conventional pharmacotherapy with cannabis-based approaches, contributing to a more comprehensive model of care. The training program also positions graduates to serve as subject matter experts in specialty clinics where medical marijuana is approved for use.

This postgraduate program represents a formal effort to address a growing area of clinical practice. By establishing a structured training pathway, Enterprise Pharmacy, SURE and Geisinger College of Health Sciences aim to improve patient safety, enhance clinical decision-making and support the responsible use of medical marijuana in health systems.

2025 Pharmacy Residency & fellow graduates

Geisinger Clinics

Shannon Brown
PG1 Central

Yongqi (Tina) Cao
PGY1 West

Ciera Helsel
PGY1 West

Lindsey Kisielewski
PGY1 Northeast

Abgail Perriello
PGY1 Central

Anye Stevenson
PGY1 Northeast

Geisinger Community Medical Center

Emilie Detweiler
PGY1

Miranda (Woosman) Steigler
PGY1

Geisinger Lewistown Hospital

Uwalia Omorogbe
PGY1

Geisinger Medical Center

Sydney Dykhuizen
PGY1

Autumn Fogle
PGY2 Critical Care

Evan Liddington
PGY1

Jonathan (Ryan) Lozano
PGY2 Oncology

Katarina Nadjkovic
PGY2 Critical Care

Dominick Patafio
PGY2 Oncology

Rosine Richa
PGY1

Tiffany Tang
PGY1

Geisinger Wyoming Valley Medical Center

Scott Mitsko
PGY2 Emergency Medicine

Molly Rinkevich
PGY2 Emergency Medicine

Sangnya Upadhyaya
PGY1

Center for Pharmacy Innovation and Outcomes

Duncan Dobbins
Research Fellow

Katarina Nadjkovic

Autumn Fogle

Uwaila Omorogbe

Shannon Brown

Molly Rinkevich

Sangnya Upadhyaya

Ryan Lozano

Tiffany Tang

Abigail Perriello

Anye Stevenson

Tina Cao

Sydney Dykhuizen

Lindsey Kisielewski

Cierra Helsel

Scott Mitsko

Dominic Patafio

Evan Liddington

Emilie Detweiler

Miranda Woosman

Duncan Dobbins

Pharmacy technician certification pathway established through Stepful partnership

Author: Daniel Longyhore

In July 2024, Enterprise Pharmacy initiated a strategic partnership with Stepful Inc. to support pharmacy technicians employed at Geisinger in meeting certification requirements through structured training and examination preparation. This collaboration provides a formal pathway for technicians to pursue certification through either the Pharmacy Technician Certification Board or the National Healthcareer Association, aligning with internal policy and expanding professional opportunities in the pharmacy workforce.

Under current policy, pharmacy technicians hired into the pharmacy technician I role are required to obtain certification within 24 months to remain eligible for continued employment in a technician capacity. Certification enables advancement to pharmacy technician II and III roles, which offer expanded responsibilities and increased compensation. These roles allow technicians to participate in sterile compounding, lead independent projects and work in specialized areas such as pediatrics, hematology and oncology. Certification also serves as a prerequisite for leadership positions, including pharmacy technician supervisor and lead technician roles.

The Stepful program consists of a 15-week classroom curriculum paired with 130 hours of on-site experience. The classroom component is delivered live online twice weekly, with recorded sessions available to accommodate varying schedules. The on-site experience is integrated into the technician's current role, allowing them to complete the program without leaving their primary position. Supervisors evaluate technician performance during this phase, checking alignment with program standards while maintaining continuity in daily operations.

Tuition for the program is fully covered by Enterprise Pharmacy. In return, technicians commit to remaining in their role at Geisinger for 24 months following program completion. This work commitment functions as a tuition repayment mechanism. Technicians who fulfill the full term incur no financial obligation. Those who exit the program early or leave the organization before completing the 24-month period are responsible for repaying the remaining tuition balance.

To date, approximately 50 pharmacy technicians have enrolled in the Stepful program. Of those, 38 have completed the training, and 36 successfully passed their certification exam on the first attempt. This is a 95% first-time pass rate, well above the national average for first-time test takers. These outcomes reflect the effectiveness of the program in preparing technicians for certification and supporting their professional development.

While Stepful provides a structured and Geisinger-supported pathway, it is not the only option available to technicians. Technicians may choose to pursue certification through other means, including self-study or enrollment in alternative programs. However, the Stepful partnership offers a consistent, accessible, employer-endorsed route that aligns with organizational standards and operational needs.

Pharmacy technicians play a critical role in the delivery of pharmacy services. Their contributions enable pharmacists and other team members to operate at the top of their license, ensuring safe, efficient, patient-centered care. Recognizing the value of technician expertise, Enterprise Pharmacy continues to invest in initiatives that support technician growth, certification and career advancement.

The partnership with Stepful represents a meaningful step in strengthening the pharmacy technician workforce. By providing structured training, financial support and a clear path to certification, Enterprise Pharmacy reinforces its commitment to workforce development and operational excellence. Future efforts will focus on expanding technician roles and identifying new opportunities to support the profession in the health system.

Operations & compliance


BAKER SterilGARD

From purchase to patient: Geisinger's AI-powered approach to drug diversion prevention

Author: Barbara Zirnhelt

Drug diversion continues to pose a significant and persistent challenge for healthcare systems across the country. Even with strict adherence to professional standards and regulatory requirements, many organizations still lack a fully integrated, systemwide approach to effectively reduce the risks associated with controlled substances. At Geisinger, we have adopted a proactive and forward-thinking strategy — one that leverages advanced technology to improve oversight, enhance accountability and ultimately safeguard patient well-being.

Geisinger's Enterprise Pharmacy has long been a leader in the use of electronic tracking systems for controlled substances. Our most recent innovation builds on this foundation by incorporating machine learning and AI-powered clinical surveillance software. This cutting-edge tool is specifically designed to identify behavioral patterns that may signal potential drug diversion, offering a more nuanced and data-driven approach to monitoring.

The software aggregates and analyzes data from a variety of sources, including pharmacy purchasing and receiving records captured through electronic vault systems and wholesalers, as well as expired medication returns processed through reverse distributors. It also integrates automated dispensing cabinet transactions, which are reconciled with electronic health record documentation to detect discrepancies such as missed doses or unaccounted-for waste.

Beyond basic reconciliation, the system is capable of identifying more subtle and complex behaviors that may indicate diversion risk. These include:

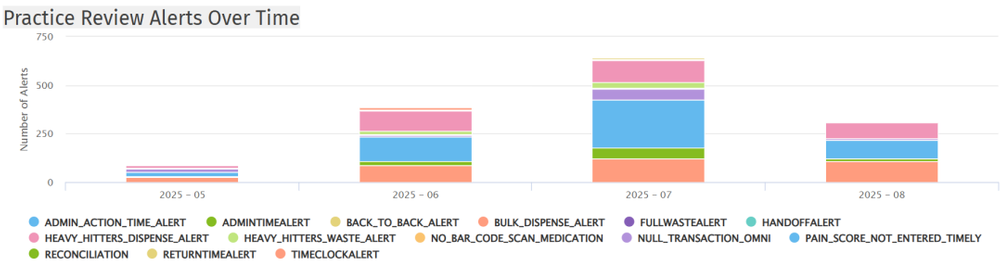
- Whole-dose wasting
- Repeated dispensing of the same medication in quick succession
- Null transactions
- Delayed medication administrations
- Inconsistencies in time clock entries
- Unusually high usage patterns
- Skipped barcode scans
- Absence of documented pain assessments

Each of these indicators contributes to a comprehensive risk profile, enabling early detection of potentially concerning activity.

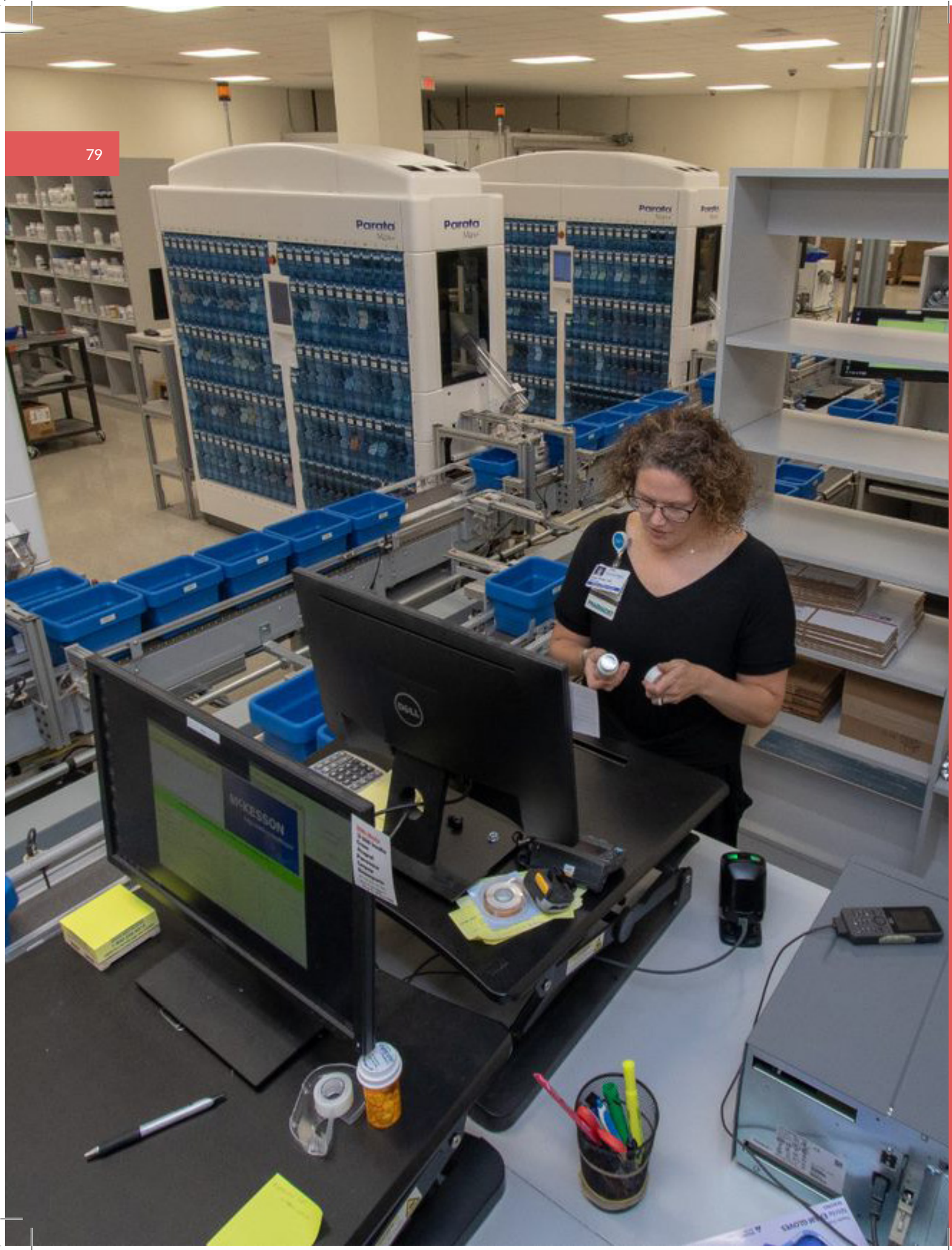
One of the software's most powerful features is its customizable Practice Review Dashboard. This tool allows for the creation of unit-specific scorecards and can even drill down to individual employee metrics. By aligning the software's parameters with our internal controlled substance policies, we have not only strengthened regulatory compliance, but also advanced our quality improvement efforts.

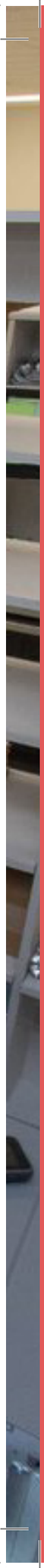
The following Unit Scorecard demonstrates how performance metrics are tracked and visualized across departments, offering actionable insights that support continuous improvement and accountability.

Example of a unit score card



This technology has enabled Geisinger to expand education and awareness efforts across clinical and operational disciplines. It reinforces a culture rooted in safety, vigilance and shared responsibility. Our approach goes beyond meeting compliance standards — it reflects our deep commitment to protecting patients, supporting our providers and preserving the integrity of our healthcare system.


Parata
Parata
DELL
MCKESSON



Strategy & innovation

Geisinger Pharmacy value creation in a pluralistic healthcare environment

Authors: Jonathan Brady, Allison Cebulko and Seth Gazes

Each year, Enterprise Pharmacy develops a strategic project portfolio aimed at improving organizational financial performance as part of the Geisinger Transformation (GT) program. The pharmacy team operates under a dual mandate:

1. To mitigate overall drug trend while maintaining the quality of care
2. To drive bottom-line financial performance for the organization

In 2025, the Pharmacy GT portfolio focused on biosimilar conversion, glucagon-like peptide-1 (GLP-1) utilization management and oncology drug spend. Through July 2025, pharmacy contributed $39.8 million in savings for Geisinger Health Plan (GHP), with total annual savings projected to exceed $50 million. This strong financial performance was driven by several key initiatives:

Humira and Stelara biosimilars: Conversion efforts reached 77% and 86%, respectively, through a combination of GHP formulary changes, direct outreach to patients and prescribers, and therapeutic interchange within Geisinger's distribution channels. These efforts were supported by coordinated communication strategies and clinical alignment across pharmacy and provider teams.

White-bagging: Oncology drug spend at external health systems was transitioned from the medical benefit to the pharmacy benefit and dispensed via Geisinger Specialty Pharmacy. For health systems opting out of the white-bagging program, medical benefit rates were restructured to align costs and maintain financial sustainability. This approach allowed for greater control over drug sourcing and improved transparency in pricing.

GLP-1 utilization management: Clinical best practice criteria were developed for the initiation and maintenance of GLP-1 therapy in the Clinical Enterprise. These criteria were designed to ensure appropriate use of therapy based on evidence and patient need. Pharmacy-led coordination of patient financial assistance programs helped offset GHP spend for eligible patients, improving access while managing cost exposure.

OncoHealth: Evidence-based prior authorization protocols, real-time clinical decision support and peer-to-peer oncologist engagement were implemented for guideline-concordant cancer therapies. These efforts helped reduce unnecessary costs across both medical and pharmacy benefits while maintaining clinical integrity and patient-centered care.

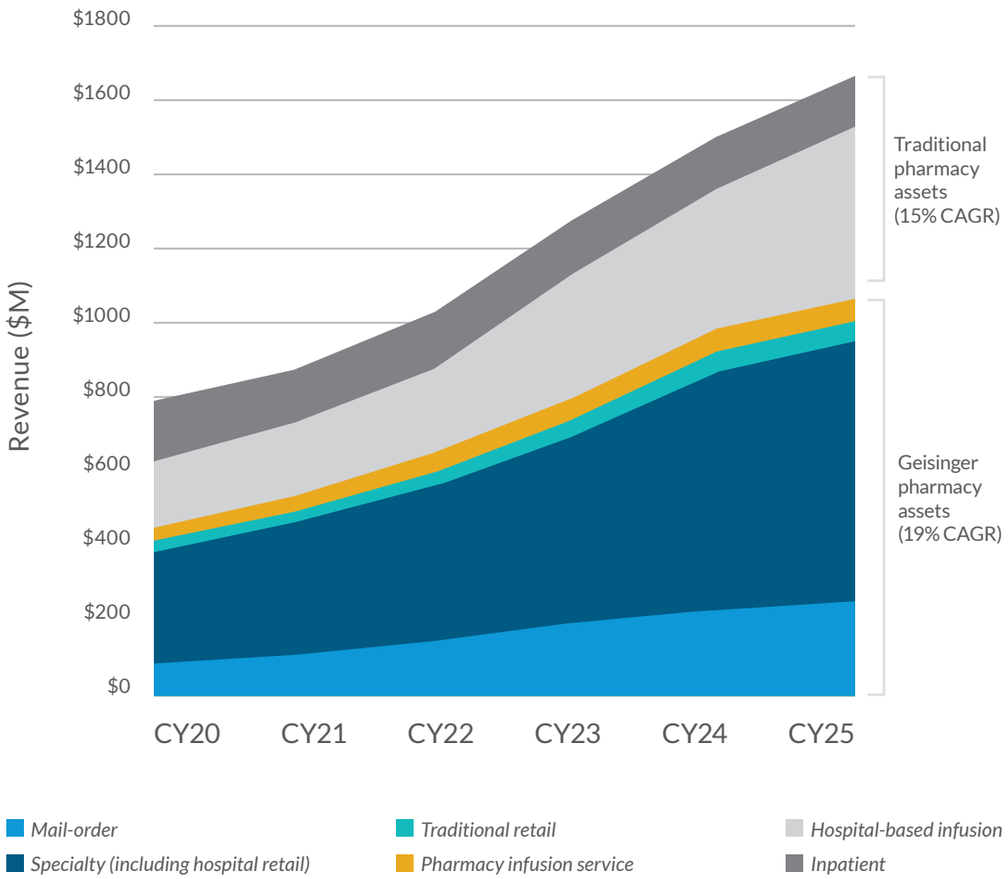
Formulary changes: A comprehensive benefit redesign was executed, including conversion from high-cost to low-cost generic medications, repositioning of tiering for high-cost drugs and alignment of benefit design with market competitors. These changes were informed by utilization data and market analysis with the goals of competitiveness and affordability.

While the Pharmacy GT portfolio delivered substantial savings for GHP, approximately 50% of the value was offset by a reduction in operating margin in the Clinical Enterprise. This impact was most notably attributed to biosimilar conversion, which shifted revenue away from traditional channels. Despite this financial offset, Pharmacy distribution channels continued to demonstrate strong growth and resilience.

Through July 2025, Enterprise Pharmacy revenue exceeded $634 million, driven by 14% growth in specialty pharmacy and 11% growth in mail-order services. Continued financial expansion across the enterprise has been supported by improved prescription capture, expanded access to payors and limited distribution drugs, and enhanced integration with Medication Therapy Disease Management and Central Medication Hub programs. These operational enhancements have strengthened the pharmacy's ability to deliver value across both clinical and financial domains.

Enterprise Pharmacy's GT portfolio reflects a balanced approach to cost containment and clinical value, positioning the department as a key contributor to systemwide transformation and sustainable financial performance. The portfolio continues to evolve in response to emerging trends, regulatory changes and patient needs, reinforcing Geisinger's commitment to innovation and excellence in pharmacy practice.

Estimated total operating revenue: $1,665 M



GHP savings

2025 YTD thru July **All $ millions**

Project	Actual	Target	Variance
Humira biosimilar	$13.10	$9.60	$3.50
White-bagging	$5.70	$5.30	$0.40
Obesity CarePath	$4.00	$3.60	$0.40
OncoHealth	$6.30	$3.50	$2.80
Stelara biosimilar	$4.90	$3.30	$1.60
GHP formulary changes	$1.90	$1.70	$0.20
Diabetes CarePath	$1.20	$0.40	$0.80
Other initiatives	$2.70	$1.90	$0.80
Pharmacy portfolio	**$39.80**	**$29.30**	**$10.50**


Hold on
Geisinger
Loratadine
Oral Solution
Allergy

Board certified pharmacists

Board certification through the Board of Pharmacy Specialties (BPS) reflects a pharmacist's advanced knowledge and commitment to professional development in a specialized area of practice. Certification is earned through a rigorous examination process and maintained through ongoing education and credential renewal.

The pharmacists listed below have achieved and continue to hold BPS certification. Their expertise supports the delivery of high-quality, specialized pharmacy services across our health system and contributes to the advancement of patient care.

Board Certified Ambulatory Care Pharmacist (BCACP)

Brian Bedwick
Kimberly Carozzoni
Sarah Dombrowski
Catherine Haupt
Jennifer Heikkinen
Michael Kachmarsky
Michael Kessock
Kayla Kline
Christopher Lafratte
Rachel Lazevnick
Daniel Longyhore
Elena Marines
Scott Opalka
Lauren Pheasant
Amanda Popko
Ivan Puskovic
Colleen Strouse
Julia Swigart
James Taleroski
Alison Walck
Theron Ward
Ariana Wendoloski
Kris Wetzel
Krista Wetzel

Board Certified Critical Care Pharmacist (BCCCP)

Anthony Alu
Anna Baughman
Amy Brokenshire
Amy Brokenshire
Liam Callejas
Allison Cebulko
Darlene Chaykosky
Angela Slampak-Cindric
Samuel Eckel
Kristen Franklin
Jamie Kerestes
Kayla Kotch
Kimberley Limouze
Lindsey Schneider
David Seitzinger
Laurie Sherrick
Alena Thannikal

Board Certified Emergency Medicine Pharmacist (BCEMP)

Ryan Burkhardt
Deanna Fox
Jamie Kerestes
Lindsay Martin
Drew Schmucker

Board Certified Geriatrics Pharmacist (BCGP)

Kerrie Beggs

Board Certified Infectious Disease Pharmacist (BCIDP)

Caroline Dillon
Bradley Lauver
Ricky Rampulla

Board Certified Nutrition Support Pharmacist (BCNSP)

Steve Adams

Board Certified Oncology Pharmacist (BCOP)

Benjamin Andrick
Tristan Maiers
Jacqueline Starr
Kayla Hart
Anna McDermott

Board Certified Psychiatry Pharmacist (BCPP)

Corey Haupt

Board Certified Pediatric Pharmacy Specialist (BCPPS)

Susan Butler
Joan Keehan
Brian Snook
Shannon Draus
Michelle Ligotski
Sarah Hale
Brianna Schafer

Board Certified Pharmacotherapy Specialist (BCPS)

Frances Aune
Kelly Bolesta
Amanda Boyer
Amy Brokenshire
Michelle Budzyn
Ryan Burkhardt
Darlene Chaykosky
Cara Ciamacco
Stephanie Cybulski
Keturah DelGrosso
Caroline Dillon
Bradley Dudeck
Sydney Estock
Alyssa Falkowski
Sara Gaines
Dante Grassi
Kelly Guza
Sara Heard
Rachel Hopper
Katelin Ivey
Sarah Jallen
Arthur Jankowski
Danielle Karaffa
Joan Keehan
Andrea Keith
Elane Kleyn
Eric Kowalek
Danielle Kuhn
Staley Lawes
Frederick Leri
Vanessa Markle
Andrea Mayer
Erin McMahan
Eryn Milius
Jordan Moore
Melissa Olsommer
Nicholas Preston
Ricky Rampulla
Brandon Rinehimer
Katilyn Russell
Melissa Sartori
Krushna Seltzer
Amanda Sharry-Rogers
Sarah Siemion
Angela Slampak-Cindric
Sarah Tanner
Troy Tanner
Rachel Taylor
Sally Tice
Heidi Yanoski

Certified Specialty Pharmacist (CSP)

Allyson Hess

Awards and recognitions

Duncan Dobbins, PharmD, MHI

Chair, National Resident/Fellow Advisory Committee,
American College of Clinical Pharmacy (ACCP)

Jamie Kerestes, PharmD, BCCCP, BCEMP

Young Alumni Award 2024, St. Joseph's University, Philadelphia College of Pharmacy

Sarah K. Dombrowski, PharmD, BCACP

Best Poster, Health Care Systems Research Network (HCSRN) for poster:
Hooker SA, Neugebauer RS, Schmittdiel JA, An J, Cassidy-Bushrow AE, Dombrowski SK, Oshiro CES, Bergenstal R, Gilliam LK, Nolan M, Thomas T, Rossom RC, Kaur J, O'Connor PJ. Comparative Effectiveness of Four Glucose-lowering Pharmacotherapy Classes on Incident Depression in Adults with Type 2 Diabetes.

Anthony W. Olson, PhD, PharmD, FAPhA

Fellow, American Pharmacists Association (FAPhA)

On the Rise Award, University of Minnesota Alumni Association

Best Poster, Pharmacy: A Journal of Pharmacy Education and Practice for poster:
Stratton TP, Olson AW. Personalizing personalized medicine: The confluence of pharmacogenomics, a person's medication experience, and ethics.

Angela Slampak-Cindric, PharmD, BCPS, BCCCP, FCCM

Excellence in Education Award-Mid Career, Academy of Educators

Bryan Snook, PharmD, BCPPS and Stephen Adams, MS, RPh, BCNSP

Poster of Distinction, ASPEN Drug Nutrient Interaction Section, for poster:
Nadeem D, Snook BE, Adams SC. Hypophosphatemia Induced by Intravenous Iron Therapy: A Case Report

Sally A. Tice, RPh, PharmD, MHA, BCPS

Treasurer, 2024–2025, ACCP Periop PRN

Programs

Geisinger's Ambulatory Clinical Pharmacy Medication Therapy Disease Management Program (MTDM)

Innovative and Collaborative Practice Award, Pennsylvania Society of Health-System Pharmacists

Publications, presentations and posters

Peer-reviewed articles

1. Alexander GD, Cavanah LR, Goldhirsh JL, Huey LY, **Piper BJ**. Recreational Cannabis Legalization: No Contribution to Rising Prescription Stimulants in the USA. *Pharmacopsychiatry*. 2024 Sep;57(5):249-254. doi: 10.1055/a-2334-6253. Epub 2024 Jul 31. PMID: 39084319.a

2. Arscott KE, Eget DM, Marcos MC, **Piper BJ**. Substance use disorder risk assessment: positive emotional experiences with first time use and substance use disorder risk. *Front Psychiatry*. 2024 Sep 20;15:1368598. doi: 10.3389/fpsyt.2024.1368598. PMID: 39371912; PMCID: PMC11451412.

3. Baker AM, Goehringer J, Woltz M, **Romagnoli KM**, Campbell-Salome G, Sturm AC, Buchanan AH, Williams MS, Kulchak Rahm A. Development and Pilot Testing of Evidence-Based Interventions to Improve Adherence after Receiving a Genetic Result. *Public Health Genomics*. 2024;27(1):197-209. doi: 10.1159/000541745. Epub 2024 Oct 17. PMID: 39501610.

4. Beiler D, **Chopra A**, **Gregor C**, **Tusing LD**, **Pradhan AM**, **Romagnoli KM**, Kraus CK, **Piper BJ**, **Wright EA**, Troiani V. Medical Marijuana Documentation Practices in Patient Electronic Health Records: A Retrospective Observational Study Using Smart Data Elements and Chart Review. *JMIR Form Res*. 2024 Dec 23;8:e65957. doi: 10.2196/65957. PMID: 39715532; PMCID: PMC11684775.

5. Burwell JM, **Howay JR**, Wasko L, Doucoure S, **Kerestes JL**, Schirmer CM, Ermak D, Noto A, Hendrix P. Tenecteplase is here: navigating the shift of a stroke thrombolytic in the United States prior to FDA approval: a mini-review on rationale, barriers, and pathways. *Front Neurol*. 2025 Apr 2;16:1563423. doi: 10.3389/fneur.2025.1563423. PMID: 40242615; PMCID: PMC12000023.

6. Cavanah LR, Goldhirsh JL, Huey LY, **Piper BJ**. National patterns of paroxetine use among US Medicare patients from 2015-2020. *Front Psychiatry*. 2024 Jul 10;15:1399493. doi: 10.3389/fpsyt.2024.1399493. PMID: 39050917; PMCID: PMC11266311.

7. Cavanah LR, Ray PK, Goldhirsh JL, Huey LY, **Piper BJ**. Patterns in (es)citalopram prescriptions to Medicaid and Medicare patients in the United States: the potential effects of evergreening. *Front Psychiatry*. 2025 Mar 5;16:1450111. doi: 10.3389/fpsyt.2025.1450111. PMID: 40109440; PMCID: PMC11919847.

8. Chen B, Iqbal U, Desai SK, Gries J, Verheyen E, Xie M, El Halabi M, **Gaines S**, Weisberg I. The role of treatment of hepatitis C with direct-acting antiviral agents on glycaemic control in diabetic patients: An updated systematic review and meta-analysis. *J Viral Hepat*. 2024 Oct;31(10):633-642. doi: 10.1111/jvh.13984. Epub 2024 Jul 24. PMID: 39046172.

9. Costello LA, Rowe LC, Forbes SC, **Piper BJ**. Disparities in Opioid Distribution in Puerto Rico and the Continental United States (2018-2023). *P R Health Sci J*. 2025 Jun;44(2):84-88. PMID: 40532054.

10. **DelGrosso K**, Wood K. Establishing an intravenous sotalol loading program. *Heart Rhythm O2*. 2025 February;6(2):233-236. doi: 10.1016/j.hroo.2024.11.011.

11. Gabriel JL, Schlieder V, Goehringer JM, Leitzel T, Sugrue EA, Zultevicz S, Davis TW, Campbell-Salome G, **Romagnoli K**. Clinician perspectives on designing and implementing a hereditary cancer transition clinic. *Hered Cancer Clin Pract*. 2025 Jan 11;23(1):2. doi: 10.1186/s13053-024-00304-5. PMID: 39799350; PMCID: PMC11725202.

12. Goehringer J, Kosmin A, Laible N, **Romagnoli K**. Assessing the Utility of a Patient-Facing Diagnostic Tool Among Individuals With Hypermobile Ehlers-Danlos Syndrome: Focus Group Study. *JMIR Form Res*. 2024 Sep 26;8:e49720. doi: 10.2196/49720. PMID: 39325533; PMCID: PMC11467606.

13. Henrikson NB, Jonas MC, Blasi PR, Buchanan AH, Suwannarat P, Leppig K, Scrol A, Leitzel T, Deneal AN, Canedo D, Ramaprasan A, Basra SS, Brown J, Odums M, Hu Y, **Romagnoli KM**, Khieu E, Balton E, Patel S, Kunnmann M, Hassen D, Hao J, Lewis M, Schwiter R, Goehringer J, Ramey HM, Gustafson S, Hsieh K, Ladd I, Rahm AK. Implementation of a Traceback Testing Program for Ovarian Cancer: Findings from the FACTS Study. *Cancers (Basel)*. 2025 Mar 29;17(7):1154. doi: 10.3390/cancers17071154. PMID: 40227675; PMCID: PMC11988076.

14. Hooker SA, Starkey CM, Bart G, Rossom RC, **Olson AW**. Predicting buprenorphine adherence among patients with opioid use disorder in primary care settings. *BMC Prim Care*. 2024 Oct 11;25(1):361. doi: 10.1186/s12875-024-02609-9. PMID: 39394565; PMCID: PMC11468455.

15. **Ivey K**, **Maiers T**, **Maley J**. Incidence of Febrile Neutropenia in Patients With Grade 3 or 4 Neutropenia Who Are Receiving Palbociclib. *J Hematol Oncol Pharm*. 2024;14(5):172-178.

16. Kennalley AL, Tian M, Higazy A, Blank S, Stains EL, **Piper BJ**. Marijuana misconceptions and myths. *Musculosketal Matters*. Fall 2024, 16-17. https://www.mskmatters.org/_files/ugd/065161_c930b25959c148b0916302c63da8c278.pdf

17. Low CY, McCall KL, **Piper BJ**. Declines in Tapentadol Use in the US but Pronounced Regional Variation. *Pharmacy (Basel)*. 2025 May 14;13(3):67. doi: 10.3390/pharmacy13030067. PMID: 40407505; PMCID: PMC12101176.

18. Lussier ME, Desai RJ, **Wright EA**, Gionfriddo MR. Impact of cost on prescribing diabetes medications for older adults with type 2 diabetes in the outpatient setting. *Res Social Adm Pharm*. 2024 Aug;20(8):755-759. doi: 10.1016/j.sapharm.2024.04.013. Epub 2024 Apr 26. PMID: 38697890.

19. Lussier ME, Hamm ME, Kenkre BN, **Wright EA**, Gordon AJ, Wasan AD, Gellad WF, Althouse AD, Cochran G, Fischer GS, Salay M, **Kern MS**, Kraemer KL. Clinician perceptions of electronic health record and email nudge interventions to prevent unsafe opioid prescribing: A qualitative study. *J Opioid Manag*. 2025 Mar-Apr;21(2):121-130. doi: 10.5055/jom.0913. PMID: 40326724.

20. Makhoul JT, Nasr AG, Qazi ZG, **Piper BJ**, Ahmed AN, Javeed A. Neurobiology and Impact of Chronic Traumatic Encephalopathy in Athletes: A Focused Review. *Cureus*. 2025 Jun 19;17(6):e86367. doi: 10.7759/cureus.86367. PMID: 40688873; PMCID: PMC12276027.

21. McCall KL, Mastro Dwyer KA, Casey RT, Samana TN, Sulicz EK, Tso SY, Yalanzhi ER, **Piper BJ**. Safety analysis of compounded GLP-1 receptor agonists: a pharmacovigilance study using the FDA adverse event reporting system. *Expert Opin Drug Saf*. 2025 Apr 29:1-8. doi: 10.1080/14740338.2025.2499670. Epub ahead of print. PMID: 40285721.

22. **Olson AW**, **Bucaloiu A**, Allen CI, **Tusing LD**, Henzler-Buckingham HA, **Gregor CM**, Freitag L, Hooker SA, Rossom R, Solberg L, **Wright E**, Haller IV, **Romagnoli KM**. 'Do they care?': A qualitative examination of patient perspectives on primary care clinician communication related to opioids in the USA. *BMJ Open*. 2025 Jan 7;15(1):e090462. doi:10.1136/bmjopen-2024-090462. PMID: 39773800; PMCID: PMC11749487.

23. **Olson AW**, Miller MJ, Pawloski PA, Waring SC, Kuntz JL, Li X, Wong J, **Wright EA**. Collaborative pharmacy research across integrated health systems: A purpose and promise for opportunities to study the complete medication-use process. *Am J Health Syst Pharm*. 2025 Jan 6;82(2):120-126. doi: 10.1093/ajhp/zxae266. PMID: 39324578; PMCID: PMC11701109.

24. Patel SS, Blum AL, Morgan RT, **Piper BJ**, Rodriguez AJ, VanVarick RE. Analysis of Neurosyphilis Imaging Methods and Treatment: A Focused Review. *Cureus*. 2024 Nov 4;16(11):e72976. doi: 10.7759/cureus.72976. PMID: 39640117; PMCID: PMC11617497.

25. **Phang KG**, Wahlquist AE, Hayes G, Corrigan C, Basco WT Jr, Bundy DG. Opioid Dosing Deviation and Dose Banding Development in Young Hospitalized Children. *Hosp Pediatr*. 2024 Sep 1;14(9):758-765. doi: 10.1542/hpeds.2023-007619. PMID: 39193635.

26. **Pradhan AM**, Lussier M, Nguyen M, Voyce S, **Wright EA**. Qualitative evaluation to understand barriers and facilitators to prescribing angiotensin receptor-neprilysin inhibitors (ARNi) and sodium-glucose cotransporter inhibitors (SGLT2i) in patients with heart failure with reduced ejection fraction (HFrEF). *J Am Pharm Assoc (2003)*. 2024 Nov-Dec;64(6):102224. doi: 10.1016/j.japh.2024.102224. Epub 2024 Aug 28. PMID: 39209218.

27. **Pradhan A**, **Wright EA**, **Hayduk VA**, **Berhane J**, Sponenberg M, **Webster L**, **Anderson H**, **Park S**, **Graham J**, **Friedenberg S**. Impact of an Electronic Health Record–Based Interruptive Alert Among Patients With Headaches Seen in Primary Care: Cluster Randomized Controlled Trial. *JMIR Med Inform*. 2024 Aug 29;12:e58456. doi: 10.2196/58456. PMID: 39207446; PMCID: PMC11376138.

28. Schommer JC, Tieger PD, **Olson AW**, Lee S, Wilson G. Accuracy and applicability of a tool designed to address pharmacy personnel stress. *J Am Pharm Assoc (2003)*. 2025 Jan-Feb;65(1):102296. doi: 10.1016/j.japh.2024.102296. Epub 2024 Nov 14. PMID: 39547651.

29. **Shetty VA**, **Gregor CM**, **Tusing LD**, **Pradhan AM**, **Romagnoli KM**, **Piper BJ**, **Wright EA**. Discussions of Cannabis Over Patient Portal Secure Messaging: Content Analysis. *J Med Internet Res.* 2024 Dec 12;26:e63311. doi: 10.2196/63311. PMID: 39666375; PMCID: PMC11671783.

30. Shuey TC, Schubert TJ, **Romagnoli K**, Cawley D, Jones LK, Gidding SS, Williams MS. Translating Evidence-Based Guidelines Into Clinical Decision Support Tools to Improve Identification and Management of Familial Hypercholesterolemia. *AMIA Annu Symp Proc.* 2025 May 22;2024:1030-1039. PMID: 40417495; PMCID: PMC12099389.

31. Stains EL, Kennalley AL, Tian M, Boehnke KF, Kraus CK, **Piper BJ**. Medical Cannabis in the United States: Comparing 2017 and 2024 State Qualifying Conditions to the 2017 National Academies of Sciences Report. *Mayo Clin Proc Innov Qual Outcomes.* 2025 Feb 20;9(2):100590. doi: 10.1016/j.mayocpiqo.2025.100590. PMID: 40066150; PMCID: PMC11891685.

Non-peer reviewed articles

1. **Dombrowski SK**, **DelGrosso K**. Chapter 71 "Smoking Cessation." McGraw-Hill's NAPLEX Review Guide. 5th edition. McGraw-Hill Education. 2025.

Published abstracts

1. An J, Ni L, Portugal C, Neugebauer R, Schmittdiel J, Karter A, Martin J, Nolan M, Simonson G, Oshiro C, Cassidy-Bushrow A, **Dombrowski SK**, Nance N, Kauer J, O'Connor P. Blood Pressure Outcomes After Sodium-Glucose Cotransporter 2 Inhibitors vs. Other Diabetes Medication Use in Adults With Type 2 Diabetes. Abstracts From the 2025 Health Care Systems Research Network (HCSRN) Annual Conference, St. Louis, Missouri. *J Patient Cent Res Rev.* 2025 Jul 15;12(3):148-203. doi: 10.17294/2330-0698.2220. PMID: 40697635; PMCID: PMC12279304.

2. DiCriscio A, Beiler D, Gianello M, Plazas C, Latorre P, Kim S, **Pradhan A**, **Shetty V**, **Piper B**, **Romagnoli K**, **Wright E**, Troiani V. Notes From Pediatric Medical Records Contain Marijuana Exposure and Use Details: A Systematic Chart Review. Abstracts From the 2025 Health Care Systems Research Network (HCSRN) Annual Conference, St. Louis, Missouri. *J Patient Cent Res Rev.* 2025 Jul 15;12(3):148-203. doi: 10.17294/2330-0698.2220. PMID: 40697635; PMCID: PMC12279304.

3. **Dobbins D**, **Learn L**, **Aftewicz H**, **Wright E**. Centralized Clinical Pharmacy Services to Improve Prior Authorization Management in Community Practice Clinics. Abstracts From the 2025 Health Care Systems Research Network (HCSRN) Annual Conference, St. Louis, Missouri. *J Patient Cent Res Rev.* 2025 Jul 15;12(3):148-203. doi: 10.17294/2330-0698.2220. PMID: 40697635; PMCID: PMC12279304.

4. **Dombrowski SK**, An J, Lewis M, **Hayduk V**, Neugebauer R, O'Connor P, Schmittdiel J, Hooker S, Karter A, Oshiro C, Cassidy-Bushrow A, Nolan M, Gilliam L, **Graham J**, **Wright E**. Trends in Annual Medication Possession in Older Adults with Type 2 Diabetes. Abstracts From the 2025 Health Care Systems Research Network (HCSRN) Annual Conference, St. Louis, Missouri. *J Patient Cent Res Rev.* 2025 Jul 15;12(3):148-203. doi: 10.17294/2330-0698.2220. PMID: 40697635; PMCID: PMC12279304.

5. Greene S, **Wright E**, Ross T, Sanchez K, Pronk N, Waring S. What Can We Learn From Early Adopters of the Learning Health System Model to Transform Care and Improve Outcomes at a National Scale? Abstracts From the 2025 Health Care Systems Research Network (HCSRN) Annual Conference, St. Louis, Missouri. *J Patient Cent Res Rev.* 2025 Jul 15;12(3):148-203. doi: 10.17294/2330-0698.2220. PMID: 40697635; PMCID: PMC12279304.

6. Hooker SA, Neugebauer RS, Schmittdiel JA, An J, Cassidy-Bushrow AE, **Dombrowski SK**, Oshiro CES, Bergenstal R, Gilliam LK, Nolan M, Thomas T, Rossom RC, Kaur J, O'Connor PJ. Comparative Effectiveness of Four Glucose-Lowering Pharmacotherapy Classes on Incident Depression in Adults With Type 2 Diabetes. Abstracts From the 2025 Health Care Systems Research Network (HCSRN) Annual Conference, St. Louis, Missouri. *J Patient Cent Res Rev.* 2025 Jul 15;12(3):148-203. doi: 10.17294/2330-0698.2220. PMID: 40697635; PMCID: PMC12279304.

7. Miller M, **Olson AW**, Pawloski P, Lewis M, Staab, Weeks J. Harmonizing Medication Data for Collaborative Research. Abstracts From the 2025 Health Care Systems Research Network (HCSRN) Annual Conference, St. Louis, Missouri. *J Patient Cent Res Rev.* 2025 Jul 15;12(3):148-203. doi: 10.17294/2330-0698.2220. PMID: 40697635; PMCID: PMC12279304.

8. **Pradhan A**, **Whary P**, Segireddy R, Latorre P, Chua A, **Zook A**, Friedenberg S, **Wright E**. Assessing the Impact of a Pharmacist-led Headache Management Program within Primary Care at an Integrated Health System. Abstracts From the 2025 Health Care Systems Research Network (HCSRN) Annual Conference, St. Louis, Missouri. *J Patient Cent Res Rev.* 2025 Jul 15;12(3):148-203. doi: 10.17294/2330-0698.2220. PMID: 40697635; PMCID: PMC12279304.

9. **Shetty V**, **Gregor C**, **Tusing L**, Chin D, **Wright E**. Characterizing Empathic Communication in Patient Portal Messages: An Exploratory Study. Abstracts From the 2025 Health Care Systems Research Network (HCSRN) Annual Conference, St. Louis, Missouri. *J Patient Cent Res Rev.* 2025 Jul 15;12(3):148-203. doi: 10.17294/2330-0698.2220. PMID: 40697635; PMCID: PMC12279304.

10. **Varela Gonzalez N**, **Longyhore D**, **Tonitis S**, **Markle V**. Characteristics Associated with Success and Limited Use of Medication Bedside Delivery Services Across a Health System. Abstracts From the 2025 Health Care Systems Research Network (HCSRN) Annual Conference, St. Louis, Missouri. *J Patient Cent Res Rev.* 2025 Jul 15;12(3):148-203. doi: 10.17294/2330-0698.2220. PMID: 40697635; PMCID: PMC12279304.

Invited presentations

1. **Dobbins DX**. Engage in research and Scholarship. School of Pharmacy Massachusetts College of Pharmacy and Health Sciences (MCPSH), Boston, MA, January 2025.

2. **Dobbins DX**. Keynote Speaker. Industry Pharmacists Organization (IPhO) 2025 Northeast Regional Meeting, Albany, NY, March 2025.

3. **Dobbins DX**. Keynote Speaker- Failing Forward: Research, Resilience and Redefining Purpose. Susquehanna Valley Undergraduate Research Symposium (SVURS), Danville, PA, July 2025.

4. **Dobbins DX**, **Wright E**, Bachhuber M, **Piper B**. Payments from Pharmaceutical Companies to Medicaid Preferred Drug List Boards. American College of Clinical Pharmacy (ACCP) Annual Conference, Phoenix, AZ, October 2024.

5. **Dobbins DX**, Bachhuber MA, **Piper BJ**, **Wright EA**. Dollars, Drugs and Decision Makers: Pharmaceutical Company Payments to Preferred Drug List Selection Committees. American College of Clinical Pharmacy (ACCP) Health Outcomes PRN Webinar, Virtual, June 2024.

6. **Dobbins DX**, **Learn L**, **Aftewicz H**, **Wright E**. Centralized Clinical Pharmacy Services to Improve Prior Authorization Management in Community Practice Clinics. Health Care Systems Research Network (HCSRN) Annual Conference, St. Louis, MO, April 2025.

7. **Dombrowski SK**, An J, Lewis M, **Hayduk V**, Neugebauer R, O'Connor P, Schmittdiel J, Hooker S, Karter A, Oshiro C, Cassidy-Bushrow A, Nolan M, Gilliam L, **Graham J**, **Wright E**. Trends in Annual Medication Possession in Older Adults with Type 2 Diabetes. Health Care Research Network (HCSRN) Annual Conference, St. Louis, MO, April 2025.

8. **Dombrowski SK**, Knorr M, **Mascaritola K**. Innovative Approaches for Medication Safety and Adherence in Patients 65 and Older. Pennsylvania Pharmacists Association (PPA) Webinar, Virtual, August 2024.

9. **Dudeck B**. Counterfeit or Not....Geisinger 15th Annual Current Concepts in Medication Safety Conference, Wilkes-Barre, PA, March 2025.

10. **Flango A**. Reducing Controlled Substance Prescribing in Primary Care. Geisinger 15th Annual Current Concepts in Medication Safety Conference, Wilkes-Barre, PA, March 2025.

11. **Fox D**, **Lehman A**, **Slampak-Cindric A**. Push Dose Pressors: To Push or Not to Push? Critical Care Medicine Symposium, Danville, PA, April 2025.

12. Jha U, **Slampak-Cindric A**, Islam M. Unmasking a Rarity: Steroid-Induced Anaphylaxis. Society of Critical Care Medicine (SCCM) Annual Congress Meeting, Orlando, FL, February 2025.

13. **Karaffa D**. Role of the Medication Therapy Disease Management Cardiology Pharmacist. Collaborative Approaches to Achieving LDL-C goals. Philadelphia LDL-C Action Roundtable, Bala Cynwyd, PA, January 2025.

14. **Kerestes J.** Behind the Silence: Confronting Awareness During Paralysis in Emergency Care. Society for Academic Emergency Medicine (SAEM) Webinar, Virtual, June 2025.

15. Koshi G, **Slampak-Cindric A**, Stamm J. Double Jeopardy: Cerebral Edema in Pregnant Patient with Acetaminophen Overdose. Society of Critical Care Medicine (SCCM) Annual Congress Meeting, Orlando, FL, February 2025.

16. **Lehman A**, **Nadjkovic K**, **Slampak-Cindric A**. The Friends Thou Has, and Their Adoption Tried: Septic Shock Sidekicks of Methylene Blue, B12, and AngII. Critical Care Medicine Symposium, Danville, PA, April 2025.

17. **Liddington E**, **Zuk J**. Real world data on tumor lysis syndrome with venetoclax. Eastern States Residency Conference, Hershey, PA, May 2025.

18. **Lopez A**, **Ligotski M**. Leveraging Collaborative Practice Agreements as One Health System. National Home Infusion Association (NHIA) Annual Meeting, Washington, DC, March 2025.

19. **Lopez A**, **Ligotski M.** To Build or Not to Build: and Other Questions About Expansion. National Home Infusion Association (NHIA) Annual Meeting, Washington, DC, March 2025.

20. Miller M, **Olson AW**, Pawloski P, Lewis M, Staab, Weeks J. Harmonizing Medication Data for Collaborative Research. Health Care Systems Research Network (HCSRN) Annual Conference, St. Louis, MO, April 2025.

21. **Olson AW.** Practice-based pharmacy research networks across integrated health systems. University of Minnesota, College of Pharmacy, Social and Administrative Pharmacy Seminar, Virtual, April 2025.

22. **Olson AW**. From Graduate to Professional – Postdoctoral Insights, Career Growth, and Funding Opportunities. American Pharmacists Association (APhA) Annual Meeting & Exposition, Academy of Pharmaceutical Research and Science Post-Graduate Forum, Nashville TN, March 2025.

23. **Olson AW**, Miller M, Pawloski P, **Wright E**. Health Care Systems Research Network Pharmacy Scientific Interest Group Meeting Update. Health Care Systems Research Network (HCSRN) Annual Conference, St. Louis, MO, April 2025.

24. Rodriguez L, Finertie H, Neugebauer R, Gosiker BS, Thomas T, Karter AJ, Gilliam LK, Oshiro CE, An JX, Simonson GD, Cassidy-Bushrow AE, **Dombrowski S**, Nolan NB, O'Connor PJ, Schmittdiel J. Racial and ethnic differences in pharmacy dispensing of sodium-glucose cotransporter 2 inhibitors and glucagon-like peptide 1 receptor agonists in patients with type 2 diabetes. European Association for the Study of Diabetes Annual Meeting, Madrid, Spain, September 2024.

25. **Romagnoli KM**. Human-centered design in clinical informatics: implementing and improving informatics interventions with design thinking. Colloquium, Department of Biomedical Informatics, School of Medicine, University of Pittsburgh, Pittsburgh, PA, February 2025.

26. **Romagnoli KM**. Human-centered design in clinical informatics: implementing and improving informatics interventions with design thinking. Health Care System Research Network (HCSRN) Monthly Scientific Data Resources Forum, Virtual, February 2025.

27. **Shetty V**, **Gregor C**, **Tusing L**, Chin D, **Wright E**. Characterizing Empathic Communication in Patient Portal Messages: An Exploratory Study. Health Care Systems Research Network (HCSRN) Annual Conference, St. Louis, MO, April 2025.

28. **Slampak-Cindric A**. Critical Care and Emergency Medicine Pharmacy Practice: A Curriculum for Student Pharmacists. Society of Critical Care Medicine (SCCM) Annual Congress Meeting, Orlando, FL, February 2025.

29. **Slampak-Cindric A**, Allen M, Gaffney S. Optimizing Emergency Interventions: Paralytics, Push-Dose Pressors & Special K. American Society of Health-System Pharmacists (ASHP) Midyear Clinical Meeting, New Orleans, LA, December 2024.

30. **Slampak-Cindric A**, Cheng-Lai A. Diverse Approaches, Shared Success: Maximizing Preceptor Archetypes. American Society of Health-System Pharmacists (ASHP) Midyear Clinical Meeting, New Orleans, LA, December 2024.

31. **Slampak-Cindric A, Hale SF**. Interview Insights: Jazzing Up Your Success in the Big Easy. American Society of Health-System Pharmacists (ASHP) Midyear Clinical Meeting, New Orleans, LA, December 2024.

32. **Slampak-Cindric A**, Stamm J. Inhaled Epoprostenol for Patients with Acute Respiratory Failure. Society of Critical Care Medicine (SCCM) Annual Congress Meeting, Orlando, FL, February 2025.

33. **Starr, J**, **Upadhyaya S**. Navigating Oral Chemotherapy: Schedules, Safety & Staying on Track. Geisinger 15th Annual Current Concepts in Medication Safety Conference, Wilkes-Barre, PA, March 2025.

34. **Thannikal A**. Pills, Posts and Perfect Prescriptions: Your Social Media Rx. Eastern States Residency Conference, Hershey, PA, May 2025.

35. Vaughn I, Hanson L, Stults C, Steiner J, **Olson AW**. Health Care Systems Research Network Scientific and Interest Work Group Update. Health Care Systems Research Network (HCSRN) Annual Conference, St. Louis, MO, April 2025.

36. **Zook A**. Exploring financially supported Roles for Pharmacists through model programs - Geisinger. National Academies of Sciences, Engineering, and Medicine's (NASEM) Innovation in Pharmacy Training and Practice to Advance Patient Care: A Workshop, Washington, DC, May 2025.

37. **Zook A**, Moore M, Miller T. Sails and Seas and CPAs Oh My!. Pennsylvania Society of Health-System Pharmacists (PSHP) 2025 Annual Assembly, Philadelphia, PA, April 2025.

38. **Zuk J**. Roles of Pharmacy Technicians in Ambulatory Oncology Clinics. Hematology Oncology Pharmacist Association (HOPA) Annual Meeting, Portland, OR, April 2025.

Internal seminars

1. **Cebulko A**, **Midence L**, McCall K. Special Topics in Glucagon-Like Peptide-1 Agonists. Pharmacy Grand Rounds, Virtual, May 2025.

2. **Dobbins D**. Payments From Pharmaceutical Companies to Medicaid Preferred Drug List Boards. Pharmacy Grand Rounds, Virtual, November 2024.

3. **Flango A**, **Simpkins B**. Medication History and Reconciliation: A Geisinger Transformation Story. Pharmacy Grand Rounds, Virtual, January 2025.

4. Lyons T, **Romagnoli K**. Bias in AI Datasets. Geisinger Our Mission to Teach, Virtual, March 2025.

5. **Miller A**, **Wysocki E**. Respiratory Syncytial Virus (RSV) in the Young and Old. Pharmacy Grand Rounds, Virtual, October 2024.

6. **Patafio D**. Clotting Factor Replacement in Hemophilia and von Willebrand Disease. Pharmacy Grand Rounds, Virtual, March 2025.

7. **Piper B**. Pros and Cons of PubPeer for Pharmacists. Pharmacy Grand Rounds, Virtual, September 2024.

8. **Pradhan A**, **Romagnoli K**. From Data to Discovery: Mapping Cannabis Use in the EHR. Pharmacy Grand Rounds, Virtual, September 2025.

9. **Wright E**. Embracing the Third Pillar of Pharmacy Education. Pharmacy Grand Rounds, Virtual, October 2024.

Poster presentations

1. Abdo S, Higazy A, **Tusing LD**, **Piper BJ**. Medical Marijuana Certifications in Pennsylvania: A Multi-Year Analysis of Qualifying Conditions and Certification Patterns. University of Scranton Neuroscience Meeting, Scranton, PA, April 2025.

2. Allison A, **Romagnoli KM**, Lyons TL. Journal selection analysis: One institution's publication trends. Medical Library Association (MLA) Annual Meeting, Pittsburgh, PA, April 2025.

3. An J, Ni L, Portugal C, Neugebauer R, Schmittdiel J, Karter A, Martin J, Nolan M, Simonson G, Oshiro C, Cassidy-Bushrow A, **Dombrowski SK**, Nance N, Kauer J, O'Connor P. Blood Pressure Outcomes After Sodium-Glucose Cotransporter 2 Inhibitors vs. Other Diabetes Medication Use in Adults With Type 2 Diabetes. Health Care Systems Research Network (HCSRN) Annual Conference, St. Louis, MO, April 2025.

4. Beiler D, **Chopra A**, **Gregor CM**, **Tusing LD**, **Pradhan AM**, **Romagnoli KM**, Kraus CK, **Piper BJ**, **Wright EA**, Troiani V. Medical Marijuana Documentation Using Smart Data Elements: Retrospective Observational Review of Medical Records. Geisinger Research Symposium, Danville, PA, April 2025.

5. **Brown S**, **DelGrosso K, Sauers N**, **Haupt C**, **Heikkinen J**. Evaluation of Sodium-Glucose Cotransporter-2 Inhibitor (SGLT2i) Utilization and Prescribing in Patients with Concomitant Type 2 Diabetes Mellitus and Heart Failure. American Society of Health-System Pharmacists (ASHP) Midyear Clinical Meeting, New Orleans, LA, December 2024.

6. **Cao YT**, **Hughes (Kropa) N**, **Baumgartner C**, **Dombrowski S**. Switching Patterns of Biologics or Small Molecule Agents for Psoriasis in Outpatient Dermatology Clinics. American Society of Health System Pharmacists (ASHP) Annual Midyear Conference, New Orleans, LA, December 2024.

7. Carneal D, Droege M, Parrish RH, Wolfe R, **Tice SA**, Maamari J, Patel G. ACCP Perioperative Care Practice Research Network: 10 Year Anniversary. American College of Clinical Pharmacy (ACCP) Annual Meeting, Phoenix, AZ, October 2024.

8. **DelGrosso K**, **Ifeji C**, **Heikkinen J**, **Karaffa D**. Impact of Ambulatory Clinical Pharmacy Services on Lipid Management in Patients with Atherosclerotic Cardiovascular Disease in an Outpatient Cardiology Clinic. American Society of Health-System Pharmacists (ASHP) Midyear Clinical Meeting, New Orleans, LA, December 2024

9. DiCriscio A, Beiler D, Gianello M, Plazas C, Latorre P, Kim S, **Pradhan A**, **Shetty V**, **Piper B**, **Romagnoli K**, **Wright E**, Troiani V. Notes from Pediatric Medical Records contain marijuana exposure and use details: A systematic chart review. Health Care Systems Research Network (HCSRN) Annual Conference, St. Louis, MO, April 2025.

10. **Dobbins D**, **Learn L**, **Aftewicz H**, **Sones K**, **Wright EA**. Challenges and Lessons Learned by Applying CFIR In a Naïve Setting: Experience Centralizing Prior Authorizations. Geisinger Research Symposium, Danville, PA, April 2025.

11. Dykhuizen S, **Draus S**, **Slampak-Cindric A**. Evaluation of N-Acetylcysteine Prescribing for Suspected Acetaminophen Overdose in Pediatric Patients. American Society of Health-System Pharmacists (ASHP) Midyear Clinical Meeting, New Orleans, LA, December 2024.

12. **Golden AG**, **Piper BJ**. Dynamic Changes in Methadone Distribution for Opioid Use Disorder Treatment from 2019-2023. Susquehanna Valley Undergraduate Research Symposium (SVURS), Danville, PA, July 2024.

13. Gonter A, **Slampak-Cindric A**, Simmons D. Who Took the Cookie From the Cookie Jar: Extreme Hyperglycemia and Insulin Resistance Heralding Acute Decompensation in a Critically Ill Septic Diabetic Patient. American Thoracic Society (ATS) International Conference, San Francisco, CA, May 2025.

14. **Gregor CM**, Tian M, **Tusing LD**, **Wright EA**, **Piper BJ**, **Romagnoli KM**. State Policies and Provider Perspectives of Prescription Drug Monitoring Programs and Medical Cannabis. Pennsylvania Pain and Addiction Summit, Wilkes-Barre, PA, April 2025.

15. **Gregor CM**, Tian M, **Tusing LD**, **Wright EA**, **Piper BJ**, **Romagnoli KM**. State Policies and Provider Perspectives of Prescription Drug Monitoring Programs and Marijuana. Geisinger Research Symposium, Danville, PA, April 2025.

16. **Helsel C**, **Longyhore D**, **Dillon C**, **Dombrowski S**. Evaluation of Statin Prescribing Among Geisinger Patients Diagnosed with HIV. American Society of Health System Pharmacists (ASHP) Annual Midyear Conference, New Orleans, LA, December 2024.

17. Hooker SA, Neugebauer RS, Schmittdiel JA, An J, Cassidy-Bushrow AE, **Dombrowski SK**, Oshiro CES, Bergenstal R, Gilliam LK, Nolan M, Thomas T, Rossom RC, Kaur J, O'Connor PJ. Comparative Effectiveness of Four Glucose-lowering Pharmacotherapy Classes on Incident Depression in Adults with Type 2 Diabetes. Health Care Systems Research Network (HCSRN) Annual Conference, St. Louis, MO, April 2025.

18. **Ireland V**, Rascona D, **Ireland D**, **Peck A**, **Remensnyder B**. Shifting the Culture of Medication Safety at a Small Community Hospital. Geisinger 15th Annual Current Concepts in Medication Safety Conference, Wilkes-Barre, PA, March 2025.

19. Klaczko CG, Walters N, Brangan A, **Romagnoli K**, Goehringer J, Van Enkevort E, Campbell-Salome G, Jones L, Savatt J. Pediatric screening for type 1 diabetes: report on pre-implementation outcomes. 17th Annual Conference on the Science of Dissemination and Implementation, Arlington, VA, December 2024.

20. **Liddington E**, **Slampak-Cindric A**. Evaluation of N-acetylcysteine and fomepizole for acetaminophen overdose in adult patients. American Society of Health-System Pharmacists (ASHP) Midyear Clinical Meeting and Exhibition, New Orleans, LA, December 2024.

21. Miller MJ, **Olson AW**, Pawloski P, Lewis M, Staab J, Weeks. Harmonizing Medication Data for Collaborative Research. Health Care Systems Research Network (HCSRN) Annual Conference, St. Louis, MO, April 2025.

22. Nadeem D, **Snook BE, Adams SC**. Hypophosphatemia Induced by Intravenous Iron Therapy: A Case Report. American Society For Parenteral And Enteral Nutrition (ASPEN) Conference, Columbus, OH, March 2025.

23. Nance N, Gilsanz P, Karter AJ, Finertie H, Schmittdiel JA, An J, Adams AS, Oshiro C, Cassidy-Bushrow AE, **Dombrowski SK**, Yassin M, Lin S, Izadian K, O'Connor P, Neugebauer R. GLP-1RA comparative effectiveness against dementia onset relative to other antidiabetic medications in a large, multi-site cohort of patients with type 2 diabetes. International Society of Pharmacoepidemiology (ISPE) Annual Meeting, Berlin, Germany, August 2024.

24. Nordberg CM, Johannes BL, Lester KH, Chang AR, Morland TB, **Romagnoli KM**, Hirsch AG. Health-related social needs are associated with uncontrolled blood pressure in CommunityCare patients with hypertension. Geisinger Research Symposium, Danville, PA, April 2025.

25. Oley E, Psarakis M, Richards N, **Hale SF, Slampak-Cindric A**. Methylene Blue Use in Critically Ill Adult Patients. American Society of Health-System Pharmacists (ASHP) Midyear Clinical Meeting, New Orleans, LA, December 2024.

26. **Pradhan A**, **Whary P**, Segireddy R, Latorre P, Chua A, **Zook A**, Friedenberg S, **Wright E**. Assessing the Impact of a Pharmacist-led Headache Management Program within Primary Care at an Integrated Health System. Health Care Systems Research Network (HCSRN) Annual Conference, St. Louis, MO, April 2025.

27. Rodriguez L, Finertie H, Neugebauer R, Gosiker BS, Thomas T, Karter AJ, Gilliam LK, Oshiro CE, An JX, Simonson GD, Cassidy-Bushrow AE, **Dombrowski S**, Nolan NB, O'Connor PJ, Schmittdiel J. Racial and ethnic differences in pharmacy dispensing of sodium-glucose cotransporter 2 inhibitors and glucagon-like peptide 1 receptor agonists in patients with type 2 diabetes. European Association for the Study of Diabetes Annual Meeting, Madrid, Spain, September 2024.

28. **Romagnoli KM**, Morales A, Salvati ZM, Jones L, Williams MS, Harberger S, Kobylinski M, Rolston D, Nelson M, Gidding S. Assessing intervention implementation and sustainability for familial hypercholesterolemia screening using the Clinical Sustainability Assessment Tool (CSAT) subdomains. Geisinger Research Symposium, Danville, PA, April 2025.

29. Segireddy R, Giroski J, Kornilow J, **Piper BJ**. Financial Conflicts of Interest Among Ophthalmology Journal Authors. Geisinger Research Symposium, Danville, PA, April 2025.

30. **Shetty V**, **Gregor C**, **Tusing L**, Chin D, **Wright E**. Characterizing Empathic Communication in Patient Portal Messages: An Exploratory Study. Geisinger Research Symposium, Danville, PA, April 2025.

31. Stains EL, Kennalley A, Tian M, **Piper BJ**. Evidence-Based Medicine Up in Smoke: Uncovering the Blazing Disparities in Medical Cannabis Qualifying Conditions. Pennsylvania Pain and Addiction Summit, Wilkes-Barre, PA, April 2025.

32. Stains E, Kennalley A, Tian M, **Piper BJ**. Puff-puff passing on evidence-based guidance of medical marijuana policies in the US. Geisinger Research Symposium, Danville, PA, April 2025.

33. Tang T, **Augustine H**, **Howay J**, **Tice S**. Appropriate use of liposomal bupivacaine (Exparel) in Transverse Abdominis Plane Blocks (TAP) in a Multi-Campus Health System. American Society of Health System Pharmacists (ASHP) Midyear Clinical Meeting, New Orleans, LA, December 2024.

34. **Uber R**, **Hayduk VA**, **Ward T**, **Flango A**. Development of pharmacogenomics training resources for embedded primary care pharmacists. Geisinger Research Symposium, Danville, PA, April 2025.

35. Upadhyaya S, **Byk D**, **Rinkevich M**, **Mitsko S**, **Bolesta K**, **Budzyn M**. Evaluate Practice Post-Implementation of Duplicate PRN Constipation Orders. Geisinger 15th Annual Current Concepts in Medication Safety Conference, Wilkes-Barre, PA, March 2025.

36. Upadhyaya S, **Ivey K**, **Novak M**. Appropriate Use of Calcitonin within Geisinger. American Society of Health System Pharmacists (ASHP) Midyear Clinical Meeting, New Orleans, LA, December 2024.

37. Upadhyaya S, **Preston K**, **Siemion S**, **Sekelsky J**. Evaluation of Thromboembolism Risk and Thromboprophylaxis Use in Multiple Myeloma Patients on Immunomodulatory Drug Therapy. Hematology Oncology Pharmacist Association (HOPA) Conference, Portland, OR, April 2025.

About Geisinger

Geisinger is among the nation's leading providers of value-based care, serving 1.2 million people in urban and rural communities across central and northeastern Pennsylvania. Founded in 1915 by philanthropist Abigail Geisinger, the nonprofit system generates more than $8 billion in annual revenues across 163 care sites — including 10 hospital campuses — and Geisinger Health Plan, with more than half a million members in commercial and government plans. Geisinger College of Health Sciences educates more than 5,000 medical professionals annually and is conducting more than 1,400 clinical research studies. With more than 27,000 employees, including 1,800 employed physicians and 5,200 registered nurses, Geisinger is among Pennsylvania's largest employers, having an estimated economic impact of $16.8 billion on the state's economy. In 2024, Geisinger joined Risant Health, a nonprofit charitable organization created to expand and accelerate value-based care across the country. Learn more at geisinger.org or follow on Facebook, Instagram and LinkedIn.


Pharmacy
Geisinger
PHARMACY
8:30 AM - 6:00 PM
Monday-Friday
Face mask required everywhere

The system is composed of the following entities:

Geisinger Clinic is widely regarded as a national model of healthcare delivery centered around a cutting-edge multispecialty group practice of more than 1,700 primary and specialty physicians who practice at Geisinger hospitals and non-Geisinger hospitals throughout the region.

Geisinger Medical Center (GMC) – GMC is the largest tertiary/quaternary care teaching hospital in central and northeastern Pennsylvania. As Geisinger's flagship hospital, Geisinger Medical Center provides leading-edge medicine and treats the most critically ill patients. It is licensed for 526 beds, including 91 pediatric beds in its Geisinger Janet Weis Children's Hospital. GMC maintains the region's only Level I regional resource trauma center with additional qualifications in pediatrics. It offers a comprehensive array of highly specialized medical and surgical services, including neurosciences, cardiovascular services, transplantation, women's health, pediatrics, orthopaedics and oncology. The Hospital for Advanced Medicine serves as an integrated center within GMC for the most critically ill patients. This “hospital within a hospital” houses 9 stories of patient-focused space, including acuity adaptable beds that can convert from intensive care to recovery as the patient progresses. As part of a modernization and expansion project, an 11-story tower is under construction on the Geisinger Medical Center campus, and scheduled to open to patients in 2029.

Geisinger Shamokin Area Community Hospital (GSACH) — Coal Township, Pa. This hospital merged into Geisinger Medical Center in 2012. A campus of Geisinger Medical Center, GSACH has a total of 48 beds, including 30 med/surg beds, 10 Post-Surgical Unit beds, 7 Special Care Unit beds and one bed in the Biocontainment Unit. GSACH also has cardiac and pulmonary rehabilitation departments, and the Ressler Center offers specialty outpatient clinic appointments on campus.

Geisinger Wyoming Valley Medical Center (GWV) — Wilkes-Barre, Pa. Located in Plains Township, GWV is an acute tertiary care center that brings advanced clinical services to northeastern Pennsylvania. Licensed for 356 beds (288 at GWV and 68 at Geisinger South Wilkes-Barre), GWV’s state-of-the-art Critical Care Building houses the only Level I trauma center in Luzerne County. The GWV campus includes the Frank M. and Dorothea Henry Cancer Center, the Richard and Marion Pearsall Heart Hospital (a Joint Commission-certified Comprehensive Heart Attack Center), the Tambur Neonatal Intensive Care Unit, the Geisinger Janet Weis Children’s Unit, the Medical Office Building housing several outpatient specialties, a transplant program and more. GWV’s Women’s Health Program and various specialty clinics are offered at facilities in close proximity to the main campus.

Geisinger South Wilkes-Barre (GSWB) — Wilkes-Barre, Pa. GSWB is GWV's community hospital campus. It offers an array of same-day health services, including adult and pediatric urgent care centers, inpatient and outpatient rehabilitation, same-day surgery, pain and sleep centers and an Emergency Department (ED). GSWB made significant upgrades in 2025, increasing inpatient capacity by 20 beds, nearly doubling ED capability by growing from 10 to 19 treatment areas, and adding new diagnostic imaging units.

Geisinger Community Medical Center (GCMC) — Scranton, Pa. GCMC is a leading provider of quality healthcare services in northeastern Pennsylvania. Home to Scranton's only Level II trauma center, GCMC is a Joint Commission-certified Comprehensive Heart Attack Center and Primary Stroke Center. The medical center houses an 8-bed Childbirth Center with a hybrid OB/GYN-midwife model. Renovations are underway to expand postpartum capability by 19 beds, emergency medicine capability by 24 treatment areas, and endoscopic procedure capability. Plans are in place to grow emergency medical services and diagnostic imaging capacity in 2026. GCMC is licensed for 296 beds and features a broad range of other specialized surgical and radiologic services.

Geisinger Bloomsburg Hospital (GBH) — Bloomsburg, Pa. GBH is licensed for 60 beds and is an acute-care hospital offering patients a variety of primary and specialty care services, a broad spectrum of surgical services, including in-and-out surgery, obstetrics/maternity, behavioral health and a progressive emergency medicine and hospitalist program.

Geisinger Lewistown Hospital (GLH) — Lewistown, Pa. GLH is licensed for 133 beds and serves the residents of rural Centre, Mifflin, Juniata, Perry, Snyder and Huntingdon counties. It is an open-staff, acute-care community hospital that offers emergency, surgery, imaging, endoscopy, orthopaedics, women's health/obstetrics and cardiology services, among others.

Geisinger Jersey Shore Hospital (GJSH) — Jersey Shore, Pa. Licensed for 25 beds, GJSH joined Geisinger in 2017, though it opened as a private hospital in the early 1900s. It serves the residents of Clinton and western Lycoming counties, and is designated as Geisinger's only critical access hospital by the Commonwealth of Pennsylvania and the Medicare Program. GJSH is accredited by The Joint Commission, and offers inpatient, acute, emergency, outpatient and sub-acute care.

Geisinger Medical Center Muncy (GMCM) — Muncy, Pa. This full-service hospital opened in 2022 to expand access to care for those who need it most in Clinton, Lycoming, Sullivan and Tioga counties. It is licensed for 20 inpatient beds and 10 ED beds. For routine care, the facility includes a multispecialty clinic with adult and pediatric primary care, orthopaedics, cardiology, ophthalmology and women's health services. Specialty outreach services, imaging, lab, medical oncology services, chemotherapy preparation and general surgery are also offered.

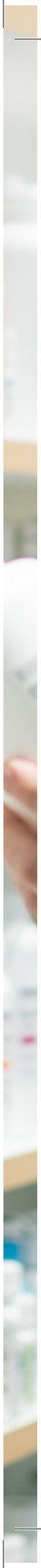
Geisinger St. Luke's Hospital (GSL) — Orwigsburg, Pa. GSL is a joint venture hospital between Geisinger and St. Luke's University Health Network serving Schuylkill County, Pennsylvania. Licensed for 80 beds, GSL is an accredited Primary Stroke Center and also provides specialized emergency medical services. It offers low-dose CT scanners and 3D mammography, as well as surgical, radiology and multiple specialty services.

Geisinger Health Plan (GHP) is the not-for-profit health insurance component of Geisinger. GHP provides high-quality, affordable healthcare benefits for businesses of all sizes, individuals, families, Medicare beneficiaries and Medicaid recipients. GHP serves more than half a million members in 44 counties throughout central, south-central and northeastern Pennsylvania. The provider network includes nearly 30,000 participating providers and 100+ participating hospitals. Additionally, GHP has partnered with Centers for Medicare & Medicaid Services (CMS) to provide Medicare benefits to 90,000 beneficiaries in the state. GHP also provides coverage to over 200,000 Medicaid recipients in the Commonwealth. In 2024, Geisinger joined Risant Health, a nonprofit charitable organization created to expand and accelerate value-based care across the country.

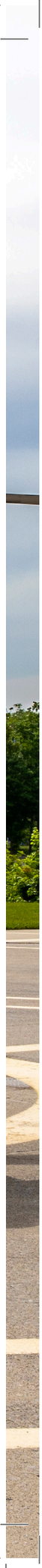
Geisinger College of Health Sciences (GCHS) — Established as the umbrella entity uniting Geisinger's schools of medicine, nursing and graduate education, the College of Health Sciences leverages the system's unique approach to value- and team-based care for all learners. The medical school has campuses in Atlantic City, Danville, Lewiston, Scranton, Wilkes-Barre and Sayre. The School of Nursing is based in Lewistown, and the School of Graduate Education is both virtual and in-person on the Scranton campus. Both the medical and graduate schools are accredited by the Middle States Commission on Higher Education, while the Liaison Committee on Medical Education also accredits the medical school. Graduate medical education is accredited by the Accreditation Council for Graduate Medical Education. The School of Nursing holds accreditation from the Accreditation Commission for Education in Nursing. Research at Geisinger also falls under the GCHS umbrella.

Research at Geisinger has been a key element of Geisinger's mission since the beginning. The current phase of research began in 2009, when we began a comprehensive Research Strategic Planning process which confirmed and elevated the role of research in Geisinger's mission. It emphasized research that improves health and healthcare — not only for our own patients, but also for patients nationally and globally through scholarly publications and presentations. Our board and leadership challenged us to conduct research that can be uniquely done at Geisinger, leveraging our high-quality patient care; our fully integrated healthcare system; our large, stable patient population; our advanced electronic health record; and our clinical data warehouse. Research is key to the development and implementation of the next generation of best practices with the goal of disease prevention as well as improved outcomes across a broad spectrum of clinical areas.

Dedicated research facilities include the Sigfried and Janet Weis Center for Research and the Henry Hood Center for Health Research in Danville, Pa.; the Susquehanna Valley Imaging Center in Lewisburg, Pa.; and the Geisinger Precision Health Center in Forty Fort, Pa.




N480LF
Life Flight
Geisinger



Geisinger Community Health Services is a not-for-profit organization that annually provides healthcare services to nearly 40,000 patients in the communities in which they live and work. Community Health is committed to advocacy, excellence and innovation in the provision of services that complement and expand the continuum of care provided by the health system. Its programs include:

- ConvenientCare, which provides walk-in urgent healthcare services in the evening and on weekends when physician offices are closed
- Health Care Quality Unit nurses who educate community members and caregivers of intellectually disabled individuals
- LIFE Geisinger, which provides a comprehensive program of health and social services to the frail elderly

International Shared Services Inc. is a wholly owned, for-profit subsidiary of Geisinger Health. It provides comprehensive clinical engineering and computer technical services to providers within and outside Geisinger.

Geisinger Marworth Treatment Center, located in Waverly, Pa., is recognized as a national leader in the treatment of alcohol and chemical dependency. Geisinger Marworth has over 90 beds and offers personalized residential and outpatient programs as well as specialized programs for healthcare and uniformed professionals.

Geisinger Life Flight® is a component of the system's response to critical care transport needs, with 9 air ambulances and two ground ambulances operating 24 hours a day, 7 days a week from the following locations:

- Penn Valley Airport, Selinsgrove
- University Park Airport, State College
- Good Will Fire Department, Minersville
- Wilkes-Barre/Scranton International Airport, Avoca
- Williamsport Regional Airport, Montoursville
- Jake Arner Memorial Airport, Lehighton

In 2024, Life Flight transported 4,350 patients.