

# Geisinger Enterprise Pharmacy

2020–2021 Year in Review

Geisinger

## Mission

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

The Geisinger logo is illuminated in blue on the top corner of a multi-story building at night. The building has many lit windows, and the sky is dark with some clouds. The logo is in a sans-serif font.

## Vision

- To be the premier steward for all medication-related needs across Geisinger.
- To be recognized as a national model for medication management, pharmacy management and leading innovative and evidence-based programs of care delivery, research and education.





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## Message from the vice president of Enterprise Pharmacy and chief pharmacy officer

Enterprise Pharmacy has endured one of its most challenging years. A global pandemic flooding our hospitals, work from home, new medication protocols – and thankfully, a vaccine providing hope that life as we once knew it will soon return. As chief pharmacy officer, I am proud of how our team has been able to adapt to the daily changing landscape of healthcare and work cohesively to continue to provide the best care to our patients and communities. I welcome you to peruse our 2020–2021 annual report, which highlights some of the incredible work and commitment of the Geisinger Enterprise Pharmacy team.

While navigating the challenges of COVID-19, Enterprise Pharmacy stayed true to our mission and continued to implement new programs which support high-quality, safe, compliant and effective care. Specialty Pharmacy continues rapid growth and is now dual-accredited by URAC and the Accreditation Commission for Health Care (ACHC). The system medication Prior Authorization services have been centralized in pharmacy, and we've continued investing in staffing resources and technology solutions. Staffing was expanded based on the needs of our key pillars, which include acute, ambulatory, retail, mail-order, specialty, infusion, operations, business intelligence and managed care. COVID-19 introduced pharmacist-managed telehealth programs as an option for our patients to keep them safe while continuing to treat their chronic disease.

Our dedication to teaching has allowed us to expand our pharmacy residency offerings from three to eight programs. The “Meds to Beds” discharge medication program has been recognized as a vital tool to promote medication adherence and decrease medication-related readmissions. It's also had a positive impact on patient satisfaction.

In the face of a state and national emergency, Enterprise Pharmacy made swift adjustments to make sure patients received the seamless and high-quality care they deserve. These adjustments often occurred daily, and while attempting to create new ways to provide effective patient care. These efforts directly support our mission and vision for pharmacy services at Geisinger and wouldn't have been possible without the dedication and commitment of our Geisinger Pharmacy leadership team. I'd like to thank each member of our staff for their commitment to the pharmacy profession and the care of Geisinger patients and communities

**Michael A. Evans, RPh, MBA, FASHP**

Chief Pharmacy Officer  
Geisinger



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## Enterprise Pharmacy

Despite the dynamic challenges of the COVID-19 pandemic, the entire Enterprise Pharmacy team adapted while continuing to work collaboratively and carry out the mission of our department. Enterprise Pharmacy staff continues to grow, approaching 1,000 employees over the last year.

As in years past, our pillar system continues to evolve to support the ever-growing needs of Enterprise Pharmacy. In July 2021, we welcomed a new pillar, the Pharmacy Innovation Alliance.

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## In 2020–2021, Enterprise Pharmacy consists of the nine pillars listed below:

**Acute Programs**, overseeing pharmacy clinical operations in Geisinger’s seven different acute care facilities.

**Planning, Strategy and Analysis**, directing Enterprise Pharmacy’s future using clinical and business analytics to develop strategies for expanding pharmacy care services.

**Operations and Compliance**, overseeing medication safety, corporate compliance, accreditations and 340B for Enterprise Pharmacy.

**Ambulatory Programs**, managing the medication therapy and disease management programs. In the last fiscal year, the outpatient distribution systems in retail pharmacy, specialty pharmacy and home infusion were brought under the pillar of Ambulatory Programs.

**Contracting and Procurement**, directing the management of medication resources for the healthcare system.

**Knowledge Management**, coordinating the education and professional development needs of Enterprise Pharmacy, providers and patients.

**Managed Care**, managing the medication and pharmacy-related needs of Geisinger Health Plan.

**Center for Pharmacy Innovation and Outcomes**, innovating and optimizing pharmacy and medication-related services through applying the scientific method.

**Pharmacy Innovation Alliance**, composed of contemporary and progressive health system participants who have the capabilities to innovate in the integrated delivery network pharmacy enterprise value market space.

# Enterprise Pharmacy Pillars



## Acute Programs

- Medication optimization
- Multidisciplinary team rounds
- Emergency bedside response
- Antimicrobial stewardship
- Anticoagulation management
- Pharmacokinetics
- Medication reconciliation
- Specialty services (e.g., Hem/Onc, Peds)
- IV infusion
- OR



## Planning, Strategy & Analysis

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



## Operations & Compliance

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



## Ambulatory Programs

- Specialty care
- Primary care chronic disease management
- Pharmacy call center
- Retail
- Mail-order
- Specialty
- Home infusion
- Pharmaceutical patient assistance
- Geisinger at Home

**Pharmacy Care Coordination & Enterprise EHR**





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## Contracting & Procurement

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- IDN contracting
- IDN Procurement
- IDN formulary



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## Knowledge Management

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



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## Managed Care

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- Drug benefit management
- Design management utilization
- Medication adherence
- Treat-to-target HEDIS metrics



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## Center for Pharmacy Innovation & Outcomes

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- Investigational drug services
- Pharmacy research support
- Pharmacy outcome studies
- Demonstrating effectiveness of pharmacy programs
- Research grants
- Translating research into practice

Not a building; not a pharmacy: A complete system clinical pharmacy resource responsible for Medication Therapy Disease Management systemwide. We are matrixed throughout the system as a distributed pharmacy and pharmacist network and maintain the patient at the center of all we do.













# Acute Programs

The Acute Programs pillar provides services to seven hospitals, two ambulatory surgery centers and 14 ambulatory infusion centers, which manage all hematology/oncology infusion services. Within the Acute Programs pillar resides the hematology/oncology ambulatory medication therapy disease management (MTDM) program, a clinical service to monitor and maintain close follow-up with those receiving oral chemotherapy.

Our nationally recognized, long-standing, progressive pharmacy practice model features clinical pharmacists practicing decentralized care embedded on patient care units with both clinical and operational responsibilities. Our pharmacists practice autonomous medication therapy management under a collaborative practice agreement with our inpatient physician partners — and they work in general practice as well as across myriad specialty areas. Technology, automation and our skilled pharmacy technician staff enable and sustain our current practice model.

# Geisinger Acute Pharmacy

## Pandemic perseverance, expansion, innovation

2020 was a year like no other in acute care as the COVID pandemic hospital volumes increased across our service area, peaking in December 2020. We were met with staffing challenges as all of our hospitals' volumes exceeded capacity, coupled with significant pharmacy technician shortages, increased medication therapy needs and a changing COVID treatment strategy from an inpatient and ambulatory perspective.

### Pandemic perseverance

- Coordinated system standardized team approach
- Clinical treatment guidelines and operational procedure development and implementation
- Centralized drug procurement, informatics and predictive models
- Vaccine strategic partner

### Services expansion = Many pharmacy construction projects

- Hard at work designing and overseeing several inpatient/ambulatory infusion center projects with particular attention to our clean room areas.
  - New facilities
    - Geisinger Medical Center Muncy Healthplex – opening winter 2022
      - 20 inpatient beds, ED, ambulatory hematology/oncology infusion center, ambulatory surgery center, outpatient clinics
        - Inpatient/infusion center pharmacy with non-hazardous and hazardous clean rooms
    - Geisinger CenterPoint Healthplex – opening spring 2022
      - Ambulatory surgery center and outpatient clinics
      - OR pharmacy with non-hazardous and hazardous clean room spaces
    - Geisinger/Acadia Behavioral Health Hospital Moosic – opening fall 2022
      - Inpatient behavioral health facility
      - Inpatient pharmacy but no clean room space
  - Expansion at existing facilities
    - Henry Cancer Center at Geisinger Wyoming Valley – opening spring 2022
      - Inpatient oncology unit, expansion of hematology/oncology ambulatory infusion
        - Inpatient/infusion center pharmacy with non-hazardous and hazardous clean rooms

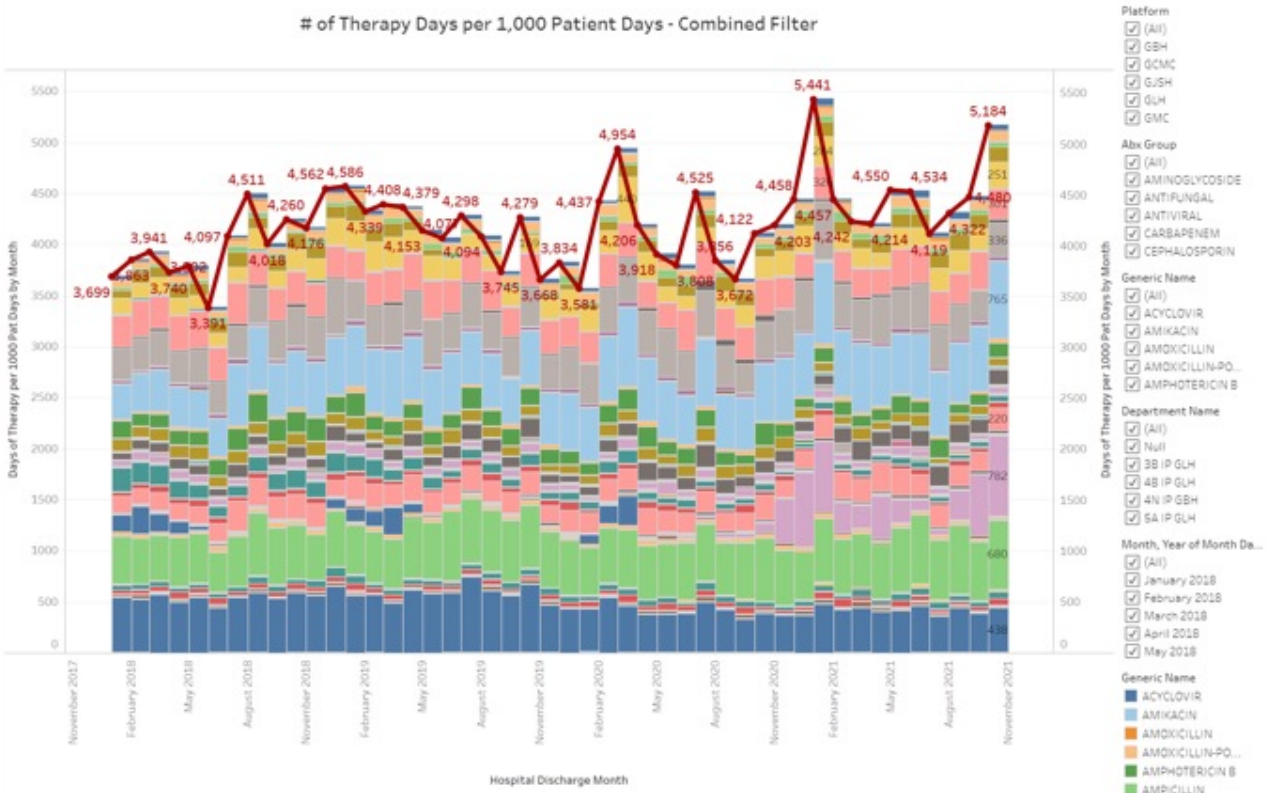
## Innovation = Technology advancements

- Initiation of Epic image capture integration into dispense prep and check
  - Installation of foot-pedal-operated HD cameras and computer workstations
- Epic discharge prescription verification launch
- Antimicrobial stewardship navigator integrated in Epic for documentation of pharmacist ASP clinical activities
- Antimicrobial stewardship dashboard moved into production
  - See screenshots below and on page 12

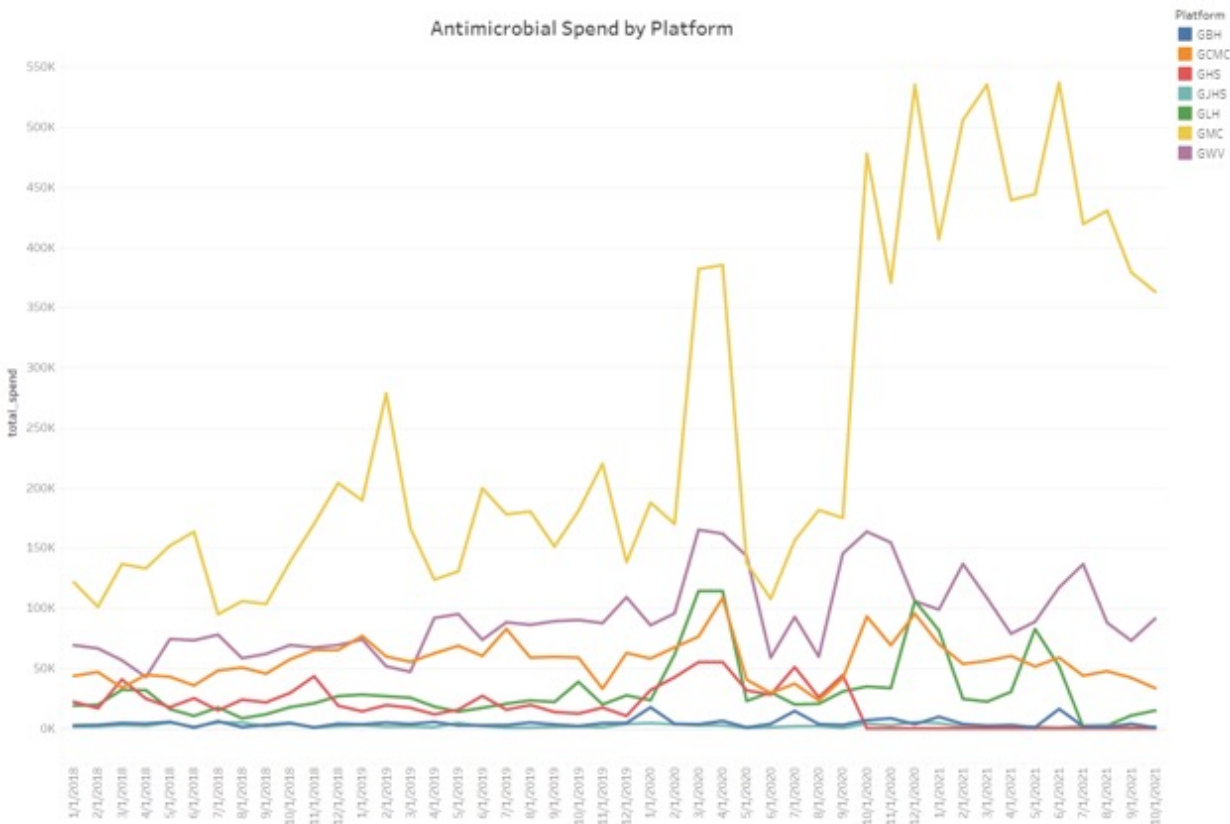




# of Therapy Days per 1,000 Patient Days - Combined Filter



Antimicrobial Spend by Platform



## Geisinger COVID vaccine initiative – Enterprise Pharmacy's role is key to success

- Multidisciplinary team created to plan and rapidly operationalize system vaccine strategy
- Enterprise Pharmacy had a core role in overall vaccine strategy throughout the planning, implementation and ongoing operations with ever-changing direction throughout the pandemic
- System vaccine strategy summary
  - Objectives:
    - Rapidly deploy regional geographic approach for vaccine availability
    - Safely complete many vaccine administrations in short time period
    - Leverage technology for ease of access, medication safety and reporting
    - Ensure equity and access to our patients, communities and employees
    - Restrict the spread of COVID-19 in our communities, decrease disease burden and strain on hospitals and work toward an end to the pandemic
  - First phase: Healthcare workers strategy
    - Employee-focused effort for onset of vaccine availability throughout all hospital campuses to target approved population
    - Total vaccine doses given through first 2 weeks (end of CY2020) = 8,500
  - Second phase: Patient-facing strategy
    - Establish regional hub locations as community vaccine clinics, strategically placed in our geographic service area
      - Two on site at Geisinger Lewistown Hospital and Geisinger Jersey Shore Hospital
        - Inpatient pharmacy clean rooms for dose preparation
      - Two off-site locations, Geisinger CenterPoint in Pittston and Geisinger Hughes Center South in Danville
        - Office buildings converted to patient clinic areas in only one week
          - Pharmacy prep areas established with workstations and laminar flow hoods for vaccine dose preparation
    - Mobile strategy: Take vaccine to patients
      - Geisinger at Home
        - Homebound, high-risk and elderly patient population
      - LIFE Geisinger
        - Day programs for elderly adults located regionally
      - Off-campus vaccine events
  - Total vaccine doses administered through June 2021 = 349,000
  - System pharmacy involvement
    - Managing entire system vaccine inventory
    - Preparation and dispensing all vaccine doses
    - Vaccine clinic planning
      - System vaccine supply procurement and coordination
      - Appointment schedule planning
      - Pharmacy staffing
      - Ancillary supply procurement coordination
    - Pharmacist and pharmacy student vaccinators

## Hematology/Oncology Pharmacy Services

The Hematology/Oncology Pharmacy Team collaborates across numerous Enterprise Pharmacy pillars to promote fluid patient care for a “one Geisinger” approach. This starts with formulary management and coordination with our health plan and proceeds to medication acquisition, clinical evaluation and monitoring, patient education and access, culminating in medication preparation as well as administration. This health system-based Hem/Onc Pharmacy approach ensures each cancer patient has contact with quality pharmacy services throughout their treatment process at Geisinger.

- Hem/Onc Pharmacy Services provides infusion pharmacy support at 11 sites across central and northeastern Pennsylvania. Pharmacists and technicians are deeply embedded in the various clinical and operational aspects of medication management and distribution of more than 90,000 medication dispenses annually
- Supporting externally supplied specialty medications at all locations
- Program development for education of patients, nurse, and physicians
- Compliance with USP<797> and USP<800> requirements
- Monitoring of patients impacted by site of care
- 90,000+ medications dispensed for patient care

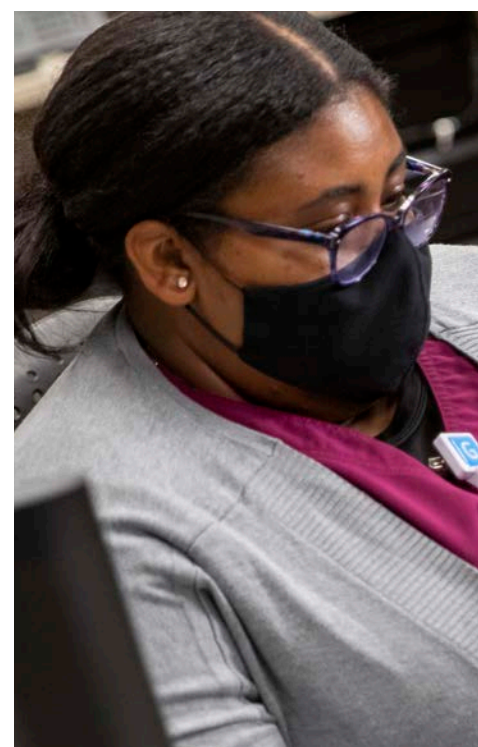
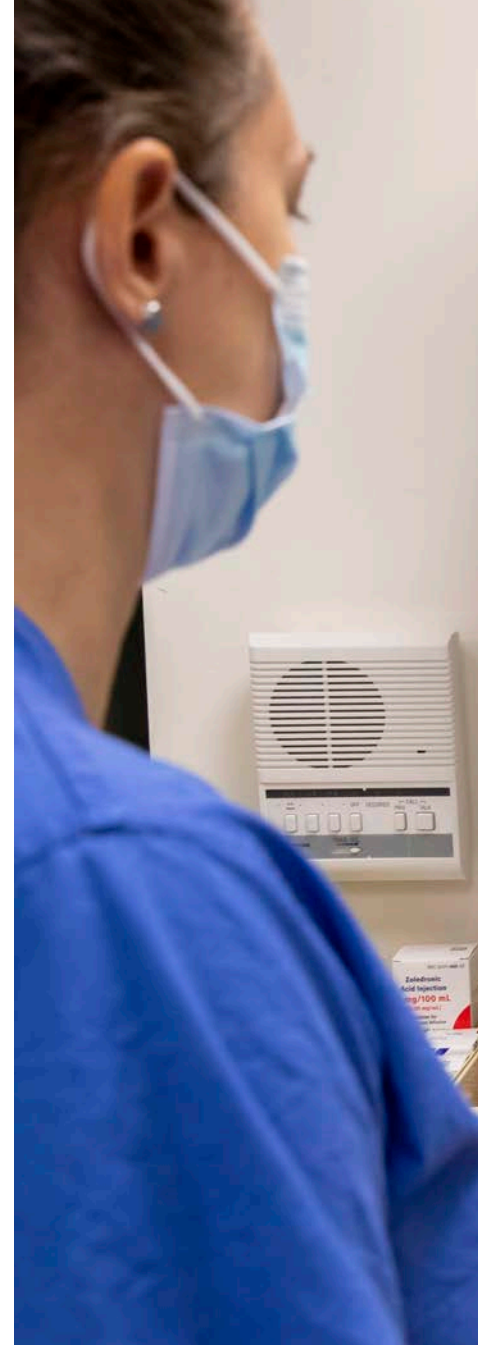
Hem/Onc Pharmacy Services also supports four inpatient sites across the system at Geisinger Lewistown Hospital, Geisinger Medical Center (GMC), Geisinger Community Medical Center and Geisinger Wyoming Valley Medical Center. At the GMC location, our satellite hem/onc pharmacy services support the following inpatient services:

- Inpatient medical oncology rounding consult service
- Inpatient hematology/stem cell transplant rounding service
- Inpatient pediatric hematology/oncology rounding service
- Ambulatory pediatric hematology/oncology ambulatory clinic
  - 1,100 referrals to pharmacists
  - 25,000 patient encounters

Finally, our team supports a robust telepharmacy oral chemotherapy clinic, acting as physician extenders and patient care advocates. With 21st-century medicine, providing safe and efficient patient care relies heavily upon optimizing the electronic medical record. Our responsibilities include:

- Development, review and implementation of medication order builds
- Chemotherapy treatment protocols build
- Clinical decision support pathway incorporation

Hematology/Oncology Pharmacy Services leads the hematology oncology P&T subcommittee to consider the effectiveness, safety, financial and operational implications of incorporating such therapies at our institute.





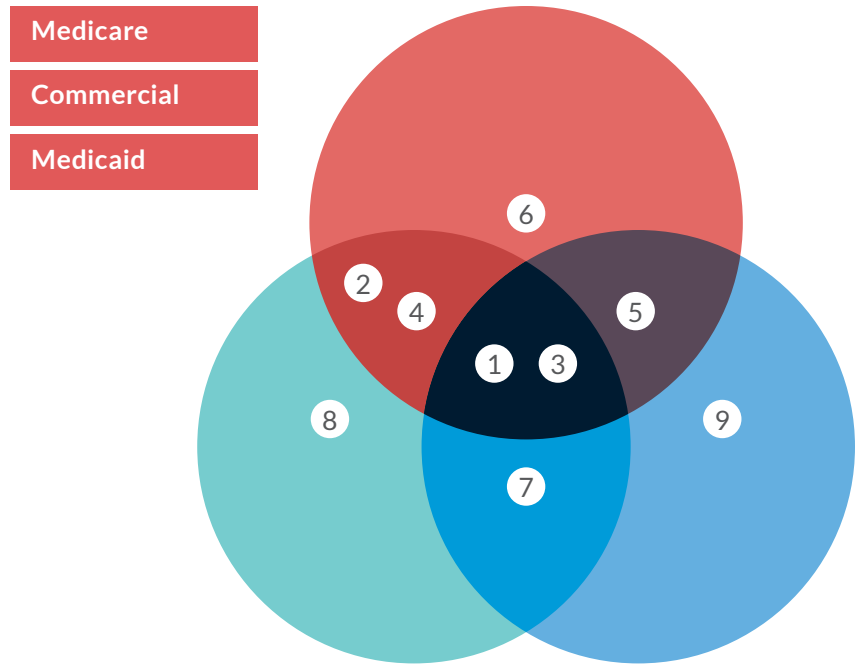


# Planning, Strategy and Analysis

The Planning, Strategy and Analysis pillar fosters clinical and business transformation, digital enablement, and growth and expansion planning. The pillar drives both the financial margin and quality improvement through a portfolio of projects that deliver top- and bottom-line growth across all distribution channels. Due diligence, planning and implementation of medication center digital and predictive technologies drive operational improvements and clinical outcomes to reduce the total cost of care. The pillar is highly involved in the pharmacy expansion strategies to ensure organizational support, effective management and investment return.

# One Geisinger financial analysis

- Mapping the financial mechanics of bringing a low-cost specialty therapy to market and its impact on the health plan, pharmacy and hospital entities/clinic (e.g., high live EQRx commercialization summary)
- Geisinger pharmacy is partnering with biopharmaceutical startup EQRx to bring fast follower high-cost drug therapies to market at lower costs
- Geisinger is uniquely positioned to assess the financial impact of lower cost therapies across the care continuum, from the health plan to specialty pharmacy and the patient
- Initial oral oncolytic analysis indicates, on average, Geisinger would save \$69,000 per patient per year across all patients and members, with the following breakdown:
  - Geisinger Pharmacy: (\$33,000), loss in revenue
  - Geisinger Health Plan: \$102,000, reduced cost of care
  - Economic analysis framework (figure right)



		Prescriber	Pharmacy	Payer	340B
1	A	GCE	GCE Pharm	GHP	
	B	GCE	GCE Pharm (340B)	GHP	340B
2	A	GCE	GCE Pharm	External	
	B	GCE	GCE Pharm (340B)	External	340B
3		GCE	Contract (340B)	GHP	340B
4		GCE	Contract (340B)	External	340B
5		GCE	Non-contract	GHP	
6		GCE	Non-contract	External	
7		External	GCE Pharm	GHP	
8		External	GCE Pharm	External	
9	A	External	External 340B	GHP	340B
	B	External	External Non-340B	GHP	



# Geisinger Transformation Highlights

- \$270 million in margin impact over 4 years across a portfolio of 20+ projects, including:
  - Specialty Carepaths – Across specialty disease areas (multiple sclerosis, IBD/Crohn’s disease, rheumatoid arthritis and diabetes), Geisinger Pharmacy has aligned clinical best practice prescribing with Geisinger Health Plan formulary and pharmacist co-management to drive lower costs of care, clinical quality metrics and prescription capture by Geisinger Pharmacy. Estimated value creation is \$2.7 million annually.
  - Pharmacy Benefits Management (PBM) migration – Geisinger Health Plan migrated PBMs from MedImpact to PerformRx to drive efficiencies and transparency around rebates, network rates and administration fees. The “in-sourcing” of Geisinger Health Plan medication spend volume to Geisinger Pharmacy enables Geisinger to extract additional value from PBMs. **Estimated value creation is \$26.4 million annually.**
  - Strategic wholesaler relationship – Leveraging the purchasing power and unique pharmacy operations of the Pharmacy Innovation Alliance (PIA), as a group the PIA has aggregated over \$1.2 billion in annual medication spend across three partners. **Geisinger estimated value creation is \$18.7 million annually.**
  - Central Medication Hub – Geisinger’s Central Medication Hub has been live for one year and currently covers ~70% of departments requiring prior authorization and patient assistance support across by pharmacy and medical benefit medications. The Central Medication Hub offers an “easy button” to all providers prescribing high-cost medications for Geisinger patients. It integrates prior authorization, patient assistance options, scheduling, patient management and site-of-care optimization to optimize time to therapy, site of therapy and revenue capture. **Geisinger estimated value creation is \$4.6 million annually.**

# Central Med Hub Overview

## Objective

**Consolidate three separate operations** – Specialty Pre-certification Team (formerly known as MyVisit), Patient Reimbursement and Patient Assistance, and Specialty Pharmacy – into a centralized team and process known as the Central Medication Hub, overseen by Enterprise Pharmacy.

## Functions



Carepath conformance and alignment



Managing medication prior authorization



Proactive determination of benefits & patient assistance



Ordering & delivery of medications, including external pharmacy

## Benefits

Standardize processes

Reduce administrative burden on clinic staff

Decrease delays in patient care

Optimize patient affordability

## Geisinger–AmerisourceBergen Home Infusion enablement solution

Geisinger has 30+ years of experience in Home Infusion, serving ~2,000 patients per month. Given our expertise and financial performance, we're partnering with AmerisourceBergen's Provider Solutions to provide both startup and optimization home infusion services for large integrated delivery networks across their customer base.

# Value of Geisinger distribution channels and blending the lines between them

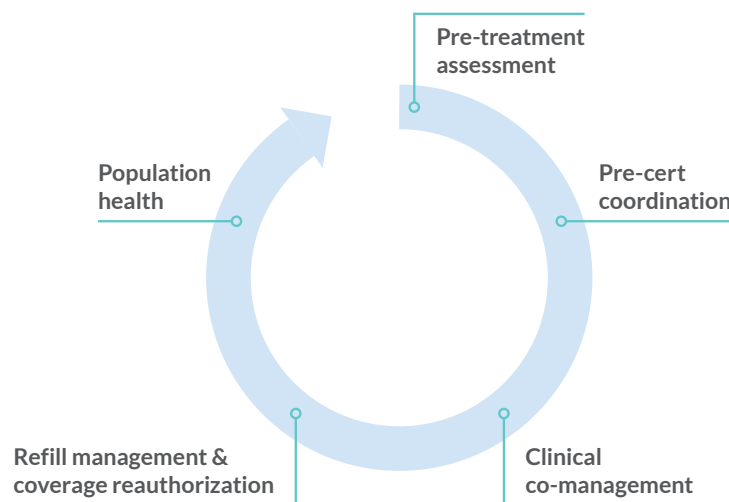
Geisinger’s Medication Therapy Disease Management (MTDM) program serves as the “front door” for Geisinger providers and patients and the nexus between Geisinger Pharmacy’s distribution channels to optimize site of care or delivery channel for patients. This integrative approach has driven Geisinger’s distribution channels to ~\$525 million in CY21 revenue with a 17% growth rate.

## MTDM integration scope

### Medicine Specialty Footprint

- Cardiology
- Dermatology
- Endocrinology
- Gastroenterology
- Hepatology
- Infectious Diseases
- Neurology
- Pulmonology
- Rheumatology
- Transplant

### Integrated pharmacy services



### Value creation

#### Clinical

- Caregap closure (lab monitoring, vaccinations)
- Disease-specific markers (i.e., CDAI, A1c)
- Patient satisfaction

#### Financial

- Rx capture (retail, mail, specialty & home infusion)
- 340b qualification
- ED & hospital utilization

#### Operational

- Access
- Administrative burden (pre-cert & refill management)
- Provider satisfaction

- Retail (Clinic and Hospital) Pharmacy – Growth driven by Meds2Beds and Specialty Pharmacy satellites at hospital retail locations. **CY21 revenues of ~\$100 million with 41% annual growth rate.**
- Mail-Order – Digital pharmacy model enabled by clinic-based mail-order enrollment with 2 to 3 delivery times drive growth across community medicine, 65 Forward and specialty clinic capture. **CY21 revenues of ~\$105 million with 24% growth rate.**

- Specialty – Specialty integration into both embedded specialty MTDM program and the Central Med Hub has optimized site of care, increased patient assistance, reduced clinical administration burden, and driven specialty Rx capture. **CY21 revenues of ~\$274 million with 6% growth rate.**
- Home Infusion – Combining Geisinger Health Plan Site of Care, Third-Party Payer Site of Care strategies, integration of MTDM pharmacists and central med hub into home infusion service offerings have driven significant growth. **CY21 revenues of ~\$40 million with 33% growth rate.**



# Operations and Compliance

The Operations and Compliance pillar spans a wide array of topics and locations within Enterprise Pharmacy. They are responsible for oversight of several systemwide pharmacy initiatives and play an important role in all pharmacy locations to assist sites in regulatory readiness and expansion of accreditation at a number of locations. The pillar maintains and oversees pharmacy operations, corporate compliance, medication safety and controlled substance diversion prevention.

# Pharmacy Compliance

- 23 active compliance audits
  - 340B program:
    - The 340B Program provides an opportunity for eligible Geisinger entities to purchase medications at or below a calculated ceiling price based on usage of those medications by qualified outpatients prescribed by eligible providers.
    - Four major areas of concern are:
      - Only eligible patients are receiving 340B medications
      - Geisinger eligible entities are not receiving duplicate discounts when Pennsylvania Department of Public Assistance is also receiving a manufacturer rebate
      - Outpatient Areas for Disproportionate Share Hospitals utilizing the 340B medication ceiling price and subject to the GPO Prohibition are not ordering medications on Geisinger's Group Purchasing Contracts
      - 340B purchased medications are not being diverted to ineligible patients
  - Maximization of reimbursement – Dispense as written (DAW) code
    - The purpose of this activity is to ensure that actionable items discovered through auditing of DAW code submissions are addressed to ensure maximum reimbursement is obtained
    - This audit is completed internally for prescriptions processed weekly. 100% of prescriptions processed are reviewed to determine the following: Proper DAW code was selected for brand dispensed prescriptions
  - Procurement – Monitors the financial impact of medication shortages/backorders as well as utilization of 503B vendors
    - Each quarter, the number of vendors and drugs purchased through a 503B vendor or due to backorders are reviewed and a report is generated to identify the scope of medications purchased and potential impact on the system both from a patient care and financial aspect
      - 503B impact – CY20 ~\$3 million
      - Backorder impact – CY20 ~\$7.9 million
  - Opioid prescribing in primary care
    - Monitors physician prescribing compliance for opioids
      - The number of patients that are prescribed greater than 50 morphine equivalents per day (MED).
      - The number of providers that exceed 5% of their total panel patient that are prescribed opioids in their respective region.
      - E-prescribing – % compliance of total providers
      - Highlights impact of Medication Disease State Management pharmacists on prescribing patterns.



## Automation

- Implemented automated dispensing cabinet (ADC) scan on restock technology at all Geisinger locations to improve safety when restocking. This included over 400 cabinets.
- Implemented standardized approach to the management of emergency medications in all the ADCs.
- Implemented Multi-Specialty Clinic medication management program through a new medication management model using ADCs.
- Implemented new access control procedures to streamline new access requests.
- Installed XT controlled substance managers at five hospitals.
- During the pandemic, implemented an ADC medication management program utilizing ADCs at several external pandemic treatment tents across the health system.
- Implemented an ADC medication management program in a cardiac specialty area through the integration of Epic and Omnicell to ensure patients' medications are managed appropriately as well as billed correctly.









# Controlled Substance Management/Diversion Prevention

- Approximately 80 Drug Diversion Investigation Team activations across the system for 2020.
- Implementation of notification program to monitor dispenses from an automated dispensing cabinet without timely documentation of administration.
- New software being implemented to provide diversion analytics to reduce and/or eliminate drug diversion, automation of manual processes.
- Supports best practice for patient safety, pain management and needless risk of transmission of infections.
- Collaborates with other service lines regarding controlled substances on audits, investigations and education.
- Monitoring of physicians regarding controlled substance prescriptions for reprints/duplicates.
- Medication takeback program at all Geisinger Pharmacy locations as well as community partners to provide method for patients to dispose of unwanted/unnecessary controlled substances and other medications.

## 340B Program

- Savings generated FY20 – ~\$180 million
- Growth of over 10% from previous year
- Program breakdown by the numbers:
  - 5 covered entities
    - Geisinger Medical Center (GMC)
    - Geisinger Wyoming Valley Medical Center (GWV)
    - Geisinger Community Medical Center (GCMC)
    - Geisinger Lewistown Hospital (GLH)
  - Geisinger Jersey Shore Hospital (GJSH)
    - 169 covered entity associated clinic sites
      - GMC – 103
      - GWV – 54
      - GCMC – 12
    - 116 contract pharmacies
      - GMC – 38
      - GWV – 38
      - GCMC – 34
      - GLH – 6
- Program helps to support providing care and education for underserved patient populations. Other initiatives supported through this program include community-based clinical services, comprehensive women's and children's services, Free2BMom program, Fresh Food Farmacy and Geisinger 65 Forward health centers, specializing in providing care and activities for the 65 and older population.

# Ambulatory Programs

The Ambulatory Programs pillar underwent great change, bringing several programs together to form Geisinger Pharmacy LLC. Included in this new entity are Geisinger Mail-Order Pharmacy, Geisinger Specialty Pharmacy, Geisinger Home Infusion Services, 10 regional Geisinger Retail Pharmacy locations and the Central Medication Hub. Not included in the transition, but still closely aligned, are the Geisinger entity-owned pharmacies at GMC, GWV and GCMC; Telepharmacy; and Medication Therapy Disease Management (MTDM) Programs. This move would be the proverbial jumping-off point for a strategic and innovative growth plan aggressively carrying Geisinger Pharmacy into the future, while setting pace for others to follow.



## **Geisinger Ambulatory Pharmacy: Setting the stage for aggressive growth in 2021–2022**

Enterprise Pharmacy's Ambulatory Programs underwent great change, bringing several programs together to form Geisinger Pharmacy LLC. Included in this new entity are Geisinger Mail-Order Pharmacy, Geisinger Specialty Pharmacy, Geisinger Home Infusion Services, 10 regional Geisinger Retail Pharmacy locations and the Central Medication Hub. Not included in the transition, but still closely aligned, are the Geisinger entity-owned pharmacies at GMC, GWV and GCMC; Telepharmacy; and Medication Therapy Disease Management (MTDM) Programs. This move would be the proverbial jumping-off point for a strategic and innovative growth plan aggressively carrying Geisinger Pharmacy into the future, while setting pace for others to follow. Several of the initiatives are listed below:

### **Northeast Pharmacy Hub**

- Geisinger Pharmacy has plans to open a new pharmacy operations center in Northeast PA in early 2022. This site will become the new home and base of operations for the Geisinger Specialty Pharmacy, the Central Medication Hub, Telepharmacy, and a new satellite of Geisinger Home Infusion Services. It will also house administrative and hotel office space, a conference room and Geisinger Home Infusion Services' first on-site infusion suite, with the ability to serve upwards of eight patients a day.

### **Epic Willow Ambulatory**

- Starting in fall 2022, all Geisinger Retail Pharmacy locations, Geisinger Mail-Order Pharmacy and Geisinger Specialty Pharmacy will transition to the Epic Willow Ambulatory software platform. This move will bring these pharmacy pillars in line with the Epic operating system used throughout the Geisinger Clinical Enterprise, and in doing so, will realize several clinical, operational and financial benefits.

### **Retail Pharmacy**

- 2021 saw new Retail Pharmacy locations open (or get ready to open) at Geisinger Community Medical Center, Lock Haven, Mifflintown and the Muncy healthplex.
- In 2022–23, plans are underway to open sites at Geisinger's Henry Cancer Center, Geisinger Wyoming Valley Medical Office Building, Reedsville and Buckhorn.
- All told, Geisinger Pharmacy will almost double its retail pharmacy site offerings over the course of the next two to three years.

### **Mail-Order Pharmacy**

- Geisinger Mail-Order Pharmacy plans to open a centralized adherence packaging solution by the end of 2021 (or early 2022). It will be housed in the current pharmacy footprint and will not only serve our LIFE Geisinger and 65 Forward populations, but will also be offered systemwide to interested patients.
- Along the same timeline, Geisinger Pharmacy is planning to operationalize a Retail/Mail Order OTC (over-the-counter) medication home delivery/distribution process for our Geisinger Health Plan members.
- In addition, over the next two to three years, Mail-Order will be undergoing a large-scale production line expansion that will more than double its current capacity and establish the foundation for a larger growth strategy moving forward.

### **Home Infusion Services**

- In current state, Geisinger Home Infusion Services (GHIS) provides care to patients in 46 counties across the state out of a single site – Danville, Pa., in our Central Region. However, by mid-2022, GHIS will have accredited satellites in both the Northeast and Western regions. This will not only expand the operating reach to additional outlying areas but will also allow for more efficient and timely service in these regions.
- In addition, GHIS will open its first Home Infusion Suite within the NE Pharmacy Hub in early 2022.

### **Geisinger Specialty Pharmacy (GSP)/Central Medication Hub (CMH)**

- As noted above, Geisinger Specialty Pharmacy and the CMH will find new homes in 2022 at the NE Pharmacy Hub. This move will provide both programs room to expand services and leave additional space for growth as the business model continues to evolve and new external partnerships are formed.
- To help fuel future growth and take advantage of the service offerings and patient financial assistance provided at the Specialty Pharmacy, GSP has plans to roll out a systemwide Fertility Medication Program and an expanded Enhanced Diabetes Medication Distribution Program.
- The CMH currently manages ~70% of the system's medication prior authorizations with expansion plans to manage close to 100% by the end of 2022.

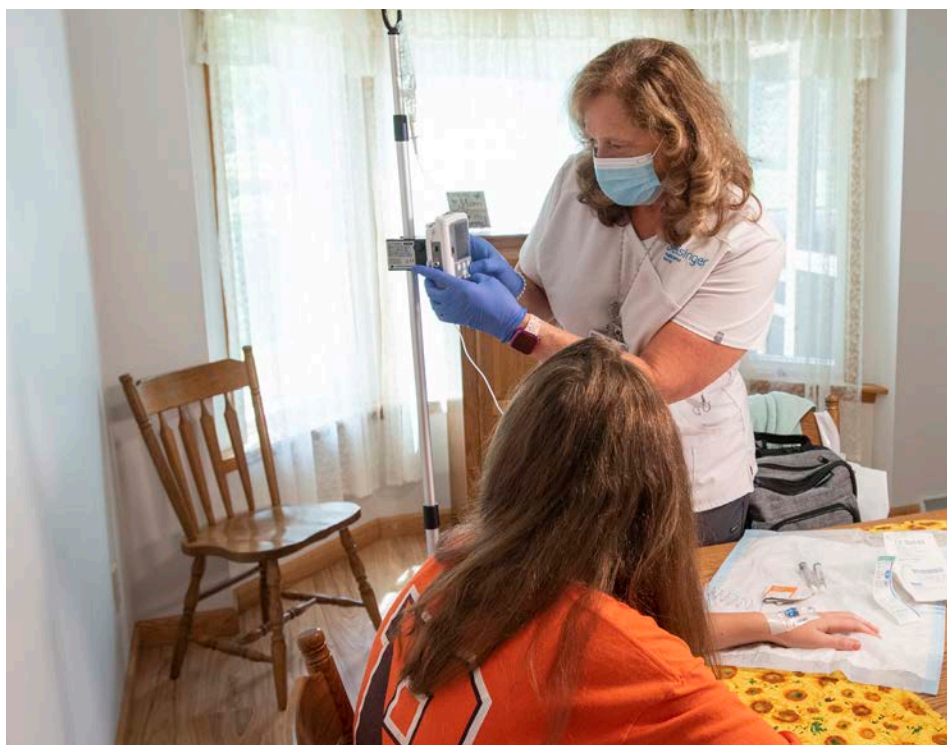
### **Medication Therapy Disease Management/Telepharmacy**

- Geisinger's MTDM Program, already one of the largest ambulatory clinical pharmacy programs in the nation, will continue to grow in the coming years, adding clinical pharmacists to new 65 Forward sites and embedding a behavioral health pharmacist within primary care. They will continue to expand further into the Specialty Pharmacy space, most notably Dermatology, Pulmonology, Transplant and Endocrinology.
- Additionally, Geisinger's MTDM leadership is in the process of developing a plan for a modified MTDM practice model that can be offered externally to non-Geisinger providers, other health systems and interested payors.
- In late 2021, GHP, MTDM and Telepharmacy will collaborate on an internal MTM Part D program. It will initially be housed out of Telepharmacy, with planned expansion in the coming years to both our MTDM and retail pharmacy sites.
- In May of 2020, Telepharmacy began to expand its medication management program to include select Specialty platforms, Gastroenterology, Neurology and Rheumatology. Currently, the MTDM/Telepharmacy team manages >6,400 medication renewal requests per month in addition to >78,000 CMSL requests monthly (see table). Scaling the Specialty management program will occur by the end of CY 2022 by adding pulmonology, endocrinology and dermatology.
- 2021 will also see Telepharmacy expanding its clinical services programs. UTI management and Transition of Care programs will be expanded to additional campuses across the system. Efforts to reduce UTI-related ED utilization with our current pilot program at GWV and GSWB will be offered to GMC and GLH in Q3 of this year (see visual). Additionally, our TOC pilot with GWV and GMC will be expanding to GLH by the end of 2021. This collaboration with our acute pharmacy team provides a "bridge in care" for patients as they transition from hospital to home, providing valuable medication education, medication reconciliation and therapy optimization services.

As you can see, the Geisinger Ambulatory Pharmacy Program is undergoing an exciting transformation — we're creating the Geisinger Ambulatory Pharmacy Program of tomorrow.















# Geisinger Mail-Order Pharmacy

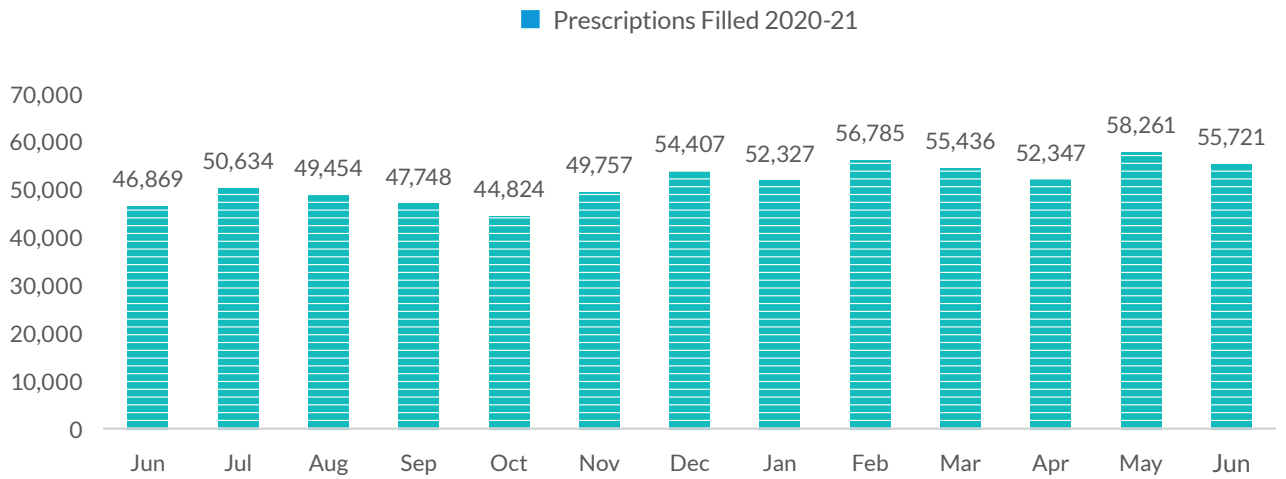
Utilization of Geisinger Mail-Order pharmacy has been a key driver in bringing care and service to the consumer during a year when the convenience of being provided care at home – and leveraging technology to do so – provided the most value to the patient. Persistent surges in prescription growth rate throughout 2020–2021 inspired our commitment to develop solutions that would meet the demands of the patient and work to provide innovative ways to expand upon access to prescription services and ease of use through our web portal.

- Our Mail-Order is currently composed of 42 employees. Our team of eight pharmacists and 34 technicians cover call center and prescription fulfillment operations. They have filled over 620,000 orders from July 2020 to June 2021, with a peak volume of 58,261 in May 2021. Our production line expanded operations to provide additional line coverage three days a week starting in May 2021, and ship 14,000 orders to patients weekly on average.
- Adding a retail pharmacy on the GCMC campus and at the Lock Haven clinic in 2021 has expanded our geographical footprint to reach new customers and speak to the benefits of using mail-order for future fills.
- Embedding mail-order enrollment satellites at select regional retail and 65 Forward locations has also expanded our ability to reach new patients and simplify the enrollment experience for those patients when they're on site, bypassing the need to use the call center to start using mail-order services.
- Cross-training a large volume of Telepharmacy, MTDM and retail pharmacy staff in mail-order operations allowed for the development of a highly qualified remote support team, as well as an on-site production line team that could quickly be called into action at any time.
- 2020–2021 was not without its challenges for our team to navigate and avoid significant impact to patient care:
  - Wholesaler change (October 2020)
  - U.S. Postal Service conversion to UPS as primary courier (December 2020)
  - Geisinger Health Plan PBM Change (January 2021)
- The future of Geisinger Mail-Order pharmacy includes:
  - Continued production line expansion, both with respect to staffing and automation, allowing for two full-time shifts, five days a week, and the potential in the coming year to more than double current capacity
  - Additional growth of our retail network and enrollment satellites to assist in onsite Mail-Order registration
  - Continued partnership with the Telepharmacy call center and MTDM teams for routine and as-needed remote support
  - Adherence packaging options for patients
  - Med refill synchronization with auto-refill enrollment
  - Enhanced web portal patient experience, including online enrollment
  - Pursuit of URAC accreditation in 2022
  - Pursuit of additional payor contracts and external customers

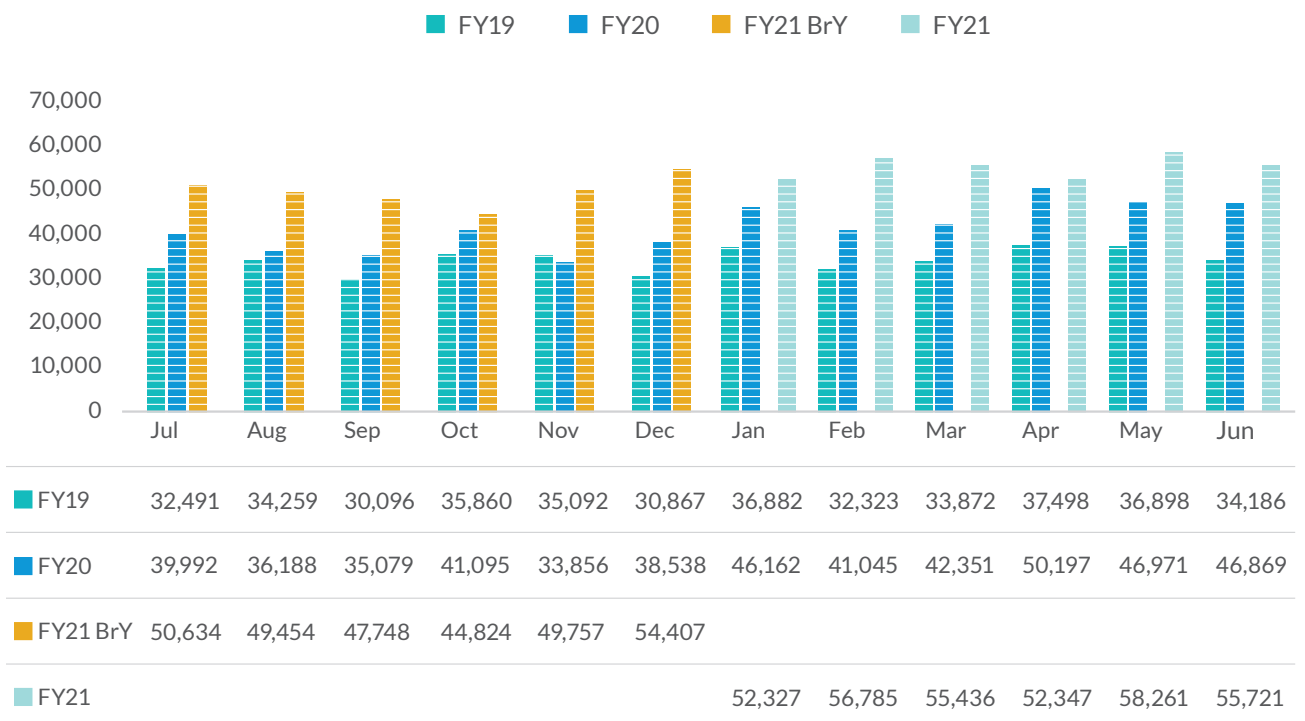


# Continued evolution of Geisinger Mail-Order Pharmacy by the numbers

## Prescriptions filled FY20-FY21



## Prescriptions filled FYOY



# Rheumatology collaboration: Defining high-value pharmacy integration in specialty care

The Medication Therapy Disease Management (MTDM) program has been historically defined by a large footprint across the Geisinger primary care landscape. However, recent strategic integration of MTDM into medicine specialties across the clinical enterprise has positioned the program for a new era of value creation, and the collaboration achieved with rheumatology over the past two years serves as a clear blueprint for future success.

MTDM pharmacists were embedded in the two largest rheumatology practices, Geisinger Medical Center and Baltimore Drive Wilkes-Barre, in the fall of 2019. In addition to the traditional clinical scope of ambulatory pharmacy practice, a strategic effort has been made to blur the lines between the rheumatology MTDM pharmacists and other key platforms in Enterprise Pharmacy, such as the Central Medication Hub (CMH), Geisinger Specialty Pharmacy (GSP), Geisinger Home Infusion Services (GHIS), and Telepharmacy.

Seamless integration of clinical and distribution pharmacy processes throughout the medication life cycle has been impactful across clinical, operational and financial domains, with key value levers highlighted below:

## Value-concordance assessment

- Treatment initiation requests funnel from rheumatology providers to embedded MTDM pharmacists, creating an “easy button” for prescribing. Clinical assessment ensures cost-effective prescribing, site of care coordination to GHIS when appropriate, and pre-treatment care gap closure in preparation for submission to CMH for insurance authorization.

## Pre-cert coordination

- MTDM submits request for pre-certification to CMH on behalf of prescribing provider and serves as the point of contact for CMH if clarification or therapeutic interchange is required during the insurance authorization process. CMH integration with GSP and MTDM provides copay transparency and facilitates financial assistance to optimize affordability for high-dollar medications.

## Clinical co-management

- Upon insurance approval, MTDM completes medication education visits facilitating Rx capture followed by longitudinal clinical co-management, which drives quality and safety and creates provider access. MTDM clinical documentation fulfills ACHC and URAC assessment requirements, creating GSP resource efficiencies.

## Refill management & insurance re-authorization

- MTDM and Telepharmacy collaboratively manage all rheumatology refills to facilitate clinical monitoring, create provider access and ensure 340B alignment; insurance re-authorizations are processed proactively via CMH, GSP and GHIS to eliminate delays in patient care, while reducing administrative burden for the prescribing clinic.

## Population monitoring

- Enhanced data analytics facilitate monitoring of value-concordant prescribing, medication adherence, care gap closure and patients lost to follow-up. Integrated processes across MTDM and GSP ensure timely interventions to prevent complications from non-adherence in patients on high-dollar therapy.





### **Program impact to date**

- \$778,000 recaptured non-Medicaid 340B qualification (CY20)
- \$366,000 recaptured Medicaid 340B qualification (CY20)
- 13% increase in Rx first fills at GSP compared to 8% increase across all system prescribers (Q4 CY20 vs. Q4 CY19)
- 125 high-risk biologic patients identified as lost to follow-up and re-engaged (CY20)
- 13,966 refills managed by MTDM and Telepharmacy (CY20)
- 2,039 clinical visits completed (CY20)
- 1,234 pre-cert coordinated in collaboration with CMH (August–December '20)



Geisinger  
65 Forward







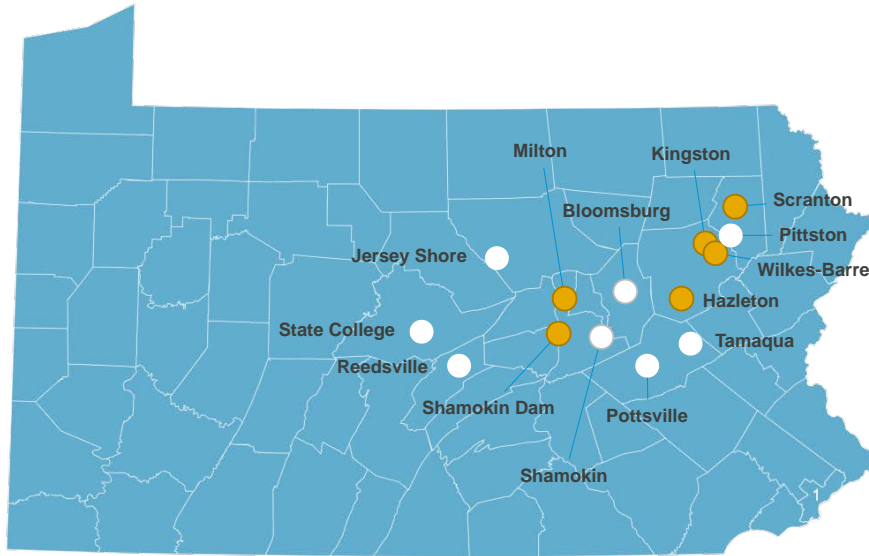
## Medication Therapy Disease Management at 65 Forward – Transforming primary care

Geisinger's 65 Forward health centers have been popping up throughout the Geisinger footprint since 2019 and this is not going to slow down anytime soon, with several new sites planned to open within the next two years (see visual). This program offers a unique and innovative primary care approach for Geisinger Gold members age 65 and older, who require more support for complex medical conditions, chronic disease, social isolation and disability. Patients receive more personalized care from 60-minute provider appointments and healthcare services such as imaging, lab, wellness coordinators and mental health services all under one roof, meaning less travel for the patient. Social and educational activities such as chair yoga, ceramics and group games are offered, along with state-of-the-art fitness equipment and exercise classes that promote socialization, improving mental health. The implementation of this model has led to improved disease management outcomes, reduced hospital admissions and significant cost reductions. The smaller provider panels of only 450 patients enable same-day visits and lead to higher patient and provider experience satisfaction along with increased quality of care.

- Presently, MTDM pharmacists are embedded at five sites: Kingston, Scranton, Shamokin Dam, Hazleton and Wilkes-Barre.
- By the end of 2021 there will be four new 65 Forward sites supported by MTDM: Milton, Shamokin, State College and Buckhorn/Bloomsburg.
- The MTDM clinical pharmacists at these locations are responsible for supporting the 65 Forward providers and patients in a slightly higher-touch model of care than our traditional MTDM practices
- The 65 Forward clinical pharmacists are responsible for providing the following:
  - Medication and chronic disease management for patients with anticoagulation disorder, diabetes, hypertension, hypercholesterolemia, COPD/asthma, heart failure and smoking cessation.
  - Vaccine administration
  - Care gap closures such as labs, preventive testing and evidence-based medication treatment
  - Medication reconciliation and comprehensive medication review (CMR) for all new patients and all hospital discharge patients
  - Mail-order enrollment for this patient population, which is exclusively GHP-insured
    - PIN pads have been installed at the 65 Forward sites to enable site of care mail-order enrollment for patients
  - Drug information specialist for patients and providers



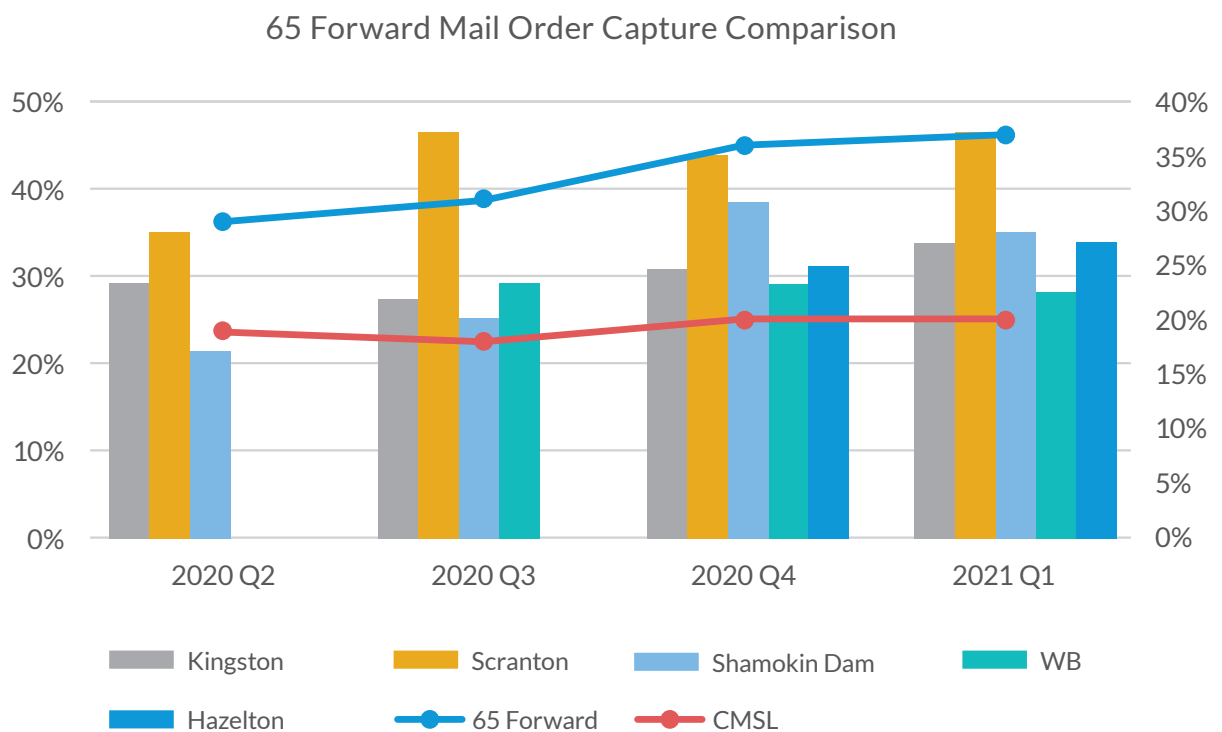
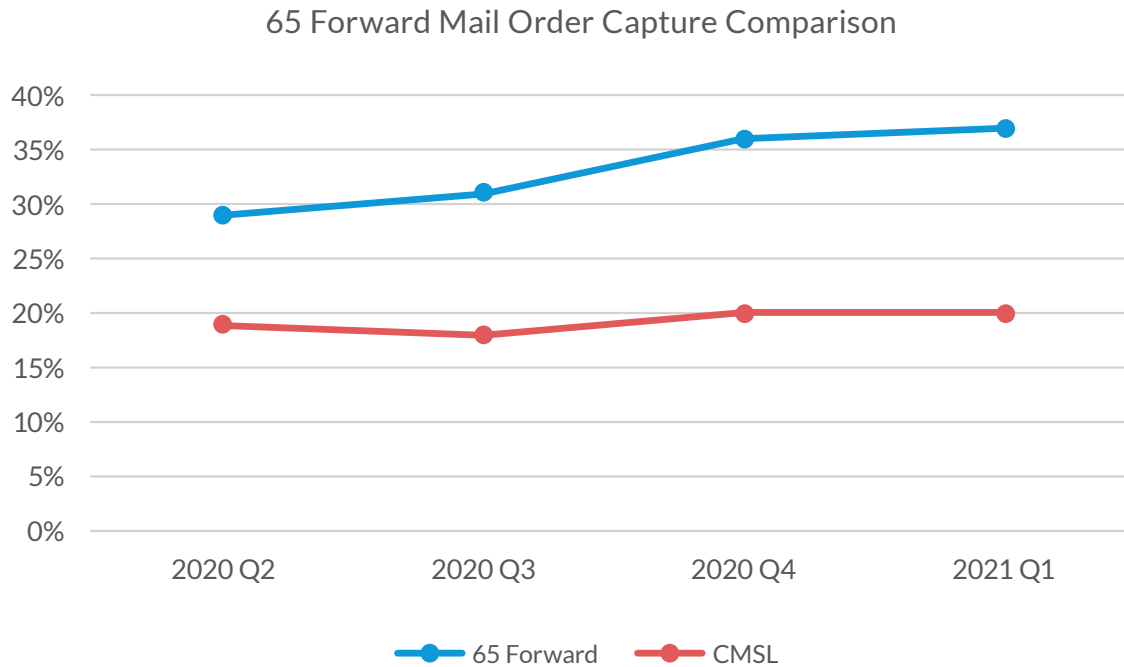
# Geisinger 65 Forward current and future sites



● Current    ○ Future

1. Kingston – October 2019
2. Scranton – November 2019
3. Shamokin Dam – October 2020
4. Wilkes-Barre – October 2020
5. Hazleton – November 2020
6. Milton – May 2021
7. Shamokin – August 2021
8. State College – September 2021
9. Bloomsburg – January 2022
10. Reedsville – CY 2022
11. Pottsville – CY 2022
12. Tamaqua – CY 2022
13. Pittston – CY 2023
14. Jersey Shore – CY 2024

# Pharmacy mail-order capture is nearly double the rate in 65 Forward centers compared to traditional primary care





# 65 Forward outperforming quality measure benchmarks

Quality & disease management		
Measures	65 Forward	Benchmark
A1C >9 (poor control)	7.4% +	14%
Blood pressure control (<140/90)	77.4% +	76%
Breast cancer screening	80.3% +	80%
Colorectal cancer screening	78.6%	80%
Diabetic retinopathy	87.8% +	81%
Diabetic nephropathy	96.8%	97%

+ Equal to or better than benchmark

*Metrics reflect cumulative 2020 performance as of Jan 3, 2021  
 Benchmark is NCQA 75th percentile national benchmark*

## 65 Forward value optimization – Vaccination care gap closure via MTDM vaccination programs









# Contracting and Procurement

The Contracting & Procurement pillar includes formulary, pharmacy procurement/inventory management and pharmaceutical contracting.

## **Formulary**

The role of the Formulary team is to work with our clinician partners to evaluate pharmaceutical products using an evidence-based approach to identify which products provide the best outcomes to our patients. Once identified, the team works with pharmaceutical vendors to negotiate the best possible price for these products.

## **Pharmacy Procurement/Inventory Management**

The Procurement team works hand in hand with the formulary team and communicates daily with the acute care hospitals and ambulatory clinics to be sure pharmaceutical products are readily available for patients.

## **Pharmaceutical Contracting**

The Contracting team evaluates potential contract opportunities with vendors that result in partnerships with pharmaceutical companies. The team consists of members from across the Pharmacy enterprise, inclusive of Geisinger and Geisinger Health Plan. These partnerships lead to cost savings opportunities.



## Central Inventory Update

- Centralizing pharmacy inventory for the six acute care hospitals and the ambulatory clinics allows for full visibility across the enterprise while reducing costs, ensuring medication availability and streamlining resource allocation and workflow.
- Several benefits to having a centralized inventory:
  - Decrease the number of wholesaler emergency orders to address acute needs at one or more of the institutions
  - Reduce emergency delivery fees, which have had a financial impact on the organization of \$300 per month or \$3,600 annually
  - Eliminate the manual process for review of FDA-recalled medications and allow for more streamlined operational plan for retrieval of recalled medications
  - Decrease the amount of expired inventory at each location
  - Maintain ideal PAR levels at acute care sites while optimizing the distribution process
  - Become a single ordering platform for the Pharmacy Procurement Team
  - Provide one tool to place orders, split for 340B and template maintenance
  - Eliminate manual reporting and pulling of data for direct purchases
  - Incorporate wholesaler and direct purchases
  - Create an interface for the retail pharmacies, needed to adequately document, monitor and track purchases and inventory combining centralized and direct delivery
  - Create a standard electronic purchase order process for the retail pharmacies, thereby improving the A/P process
  - Facilitate regulatory requirements for DSCSA



## Oncology biosimilar conversions for bevacizumab, rituximab and trastuzumab

- Historically, generic medications have been a significant source of cost savings for both health systems and patients alike.
- Recently, a number of biosimilar medications (the equivalent of a generic for a biologic medication) were approved by the FDA and presented opportunity for significant cost savings while maintaining the same clinical efficacy.
- In October 2020, the Geisinger System Formulary transitioned to three such biosimilars: Zirabev® (bevacizumab-bvzr), Ruxience® (rituximab-pvvr) and Ontruzant® (trastuzumab-dttb).
- Since then, transitioning to these biosimilar medications has resulted in the following savings for the Geisinger Clinical Enterprise:
  - Zirabev (bevacizumab-bvzr): \$1.2 million
  - Ruxience (rituximab-pvvr): \$943,000
  - Ontruzant (trastuzumab-dttb): \$990,000
- The conversion process included excellent teamwork across multiple areas within Pharmacy, including the Formulary/Procurement team, the Hem/Onc Pharmacy Team and the Central Med Hub Team, and resulted in implementation of a process that we can mirror moving forward for future biosimilar adoptions.

## Adoption of various 503B compounded products to help reduce high batching workload and mitigate waste

- Over the past 12 months, a number of outsourced, ready-to-use products have been added to system formulary.
  - These ready-to-use products are not commercially available, but can be obtained from our 503B Outsourcing Pharmacy Partners.
- A sampling of the outsourced products brought onto system formulary over the past year include:
  - Epinephrine 5 mg/250 mL NSS Premix Bag
  - Phenylephrine 40 mg/250 mL NSS Premix Bag
  - Fentanyl 2,000 mcg/100 mL NSS Premix Bag
  - Ketamine 1,000 mg/100 mL NSS Premix Bag
  - Methacholine Ready to Use Kit
  - Hydromorphone 50 mg/50 mL CADD Cassette
- Adoption of these products offers several advantages:
  - It frees up valuable time for our IV Area teams, allowing them to focus on more complicated sterile compounding needs that cannot be outsourced.
  - Since the 503B premade products have significantly better beyond use dating compared to internally compounded products, it significantly reduces waste due to product expiration.
  - It mitigates the impact of medication shortages, since most 503Bs produce their ready-to-use products from active pharmaceutical ingredients as opposed to using commercially available product.



Sodium

Pantry





# Knowledge Management

The Knowledge Management pillar of Enterprise Pharmacy supports the education of pharmacy students, residents, technicians and pharmacists at Geisinger. The pillar collaborates with other departments and professions across the system to bring patient and provider education resources to Geisinger's providers, patients and members through both the health system and the school of medicine. One of the key features of Enterprise Pharmacy is its collaborative practice agreements between pharmacists and physicians, allowing pharmacists expansive opportunities to provide direct patient care in collaboration with their prescribing partners. The Knowledge Management pillar is in place to help ensure each pharmacist and pharmacy technician is prepared to engage in patient care and pharmacy practice at the peak of their license.





## **Student Programming – Geisinger Pharmacy Scholars Program**

- Partnership with Wilkes University to create a pipeline of pharmacy graduates for pharmacy's continued expansion of clinical services to Geisinger patients and members.
- Enrollment into the Geisinger Pharmacy Scholars Program is limited to five students per year, entering Wilkes as a first-year student with an early commitment opportunity to the School of Pharmacy.
- Geisinger Pharmacy Scholars students will receive:
  - Geisinger pharmacist mentorship
  - Access to student technician positions for employment throughout the system
  - Guaranteed access to experiential rotations within Geisinger Pharmacy
  - Employment loan opportunities made available in their fifth year of school
- The Geisinger Pharmacy Scholars Program will begin enrolling its first cohort of students in fall 2022.

## **Student Programming – Pharmacy Student Experiential Education**

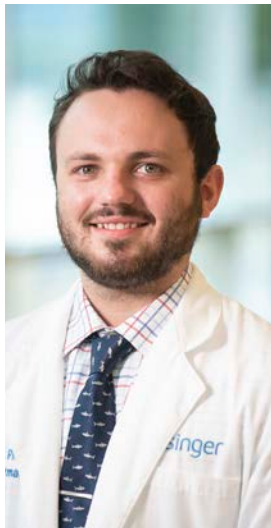
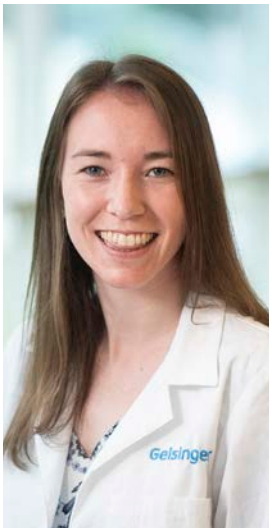
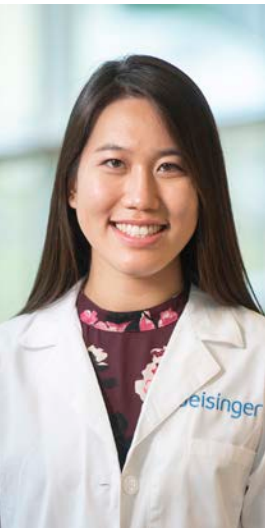
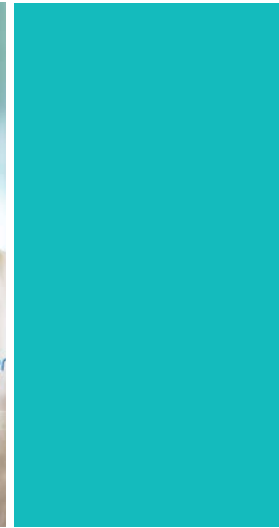
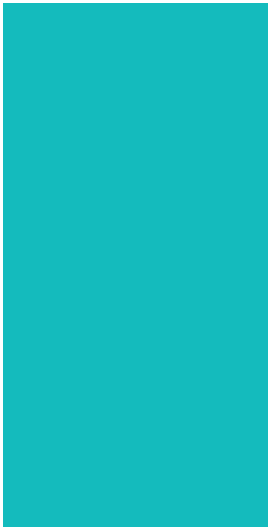
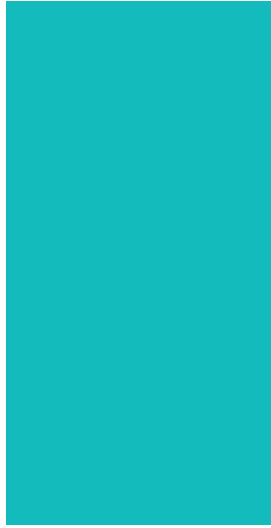
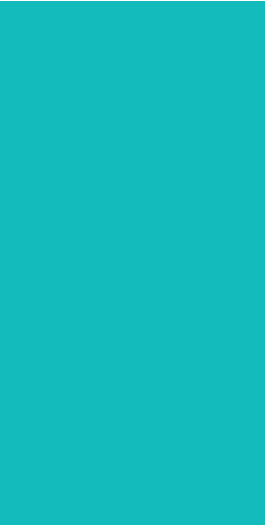
- 203 student rotations, 147 unique students, 8 schools of pharmacy
- Rotation student volumes:
  - 93 rotations in acute care facilities
  - 30 rotations with MTDM
  - 72 rotations with Telepharmacy
  - 1 rotation in research and innovation
  - 7 rotations with Geisinger Retail & Specialty Pharmacies
- Estimate 40 hours per week, 5 weeks per rotation, 27,400 hours of APPE student education
- Estimate 3 hours per week, 5 weeks per rotation 990 hours of IPPE student education
- 28,390 hours of experiential learning completed across Geisinger

## **Graduate Pharmacy Education – Pharmacy Residencies**

- Resident volumes across the system increased to:
  - 19 residency positions
  - 8 residency programs
- Addition of two-year residency for health system pharmacy administration and leadership to start with 2021 residency year.
- Twelve residents will remain with Geisinger to practice pharmacy in Community Medicine MTDM, specialty practice MTDM, acute care clinical pharmacy across multiple patient care areas.
- Five American Society of Health System Pharmacy visits to complete the initial accreditation evaluation of new pharmacy residency programs across the system. All residency programs received positive accreditation results and await their final letters from the ASHP Commission of Credentialing:
  - Geisinger Community Medical Center (RPD: Danielle Karaffa); February 2021
  - Geisinger Clinics Northeast Region (RPD: Michael Kachmarsky); February 2021
  - Geisinger Lewistown Hospital (RPD: Cory Ulisse); April 2021
  - Geisinger Clinics Western Region (RPD: Sarah Dombrowski); May 2021
  - Geisinger Medical Center PGY2 Critical Care (RPD: Angela Slampak-Cindric); July 2021

## **Pharmacy Residency Preceptor of the Year Awards**

- Geisinger Medical Center PGY1 residency: Ivan Puskovic, PharmD, BCACP
- Geisinger Medical Center PGY2 Oncology residency: Stephen Farley, PharmD, BCOP
- Geisinger Medical Center PGY2 Critical Care residency: Laurie Sherrick, PharmD, BCCCP
- Geisinger Clinics West PGY1 residency: Keturah Weaver, PharmD, BCPS
- Geisinger Clinics Northeast PGY1 residency: Brooke Depietro, PharmD
- Geisinger Community Medical Center PGY1 residency: Lindsey Schneider, PharmD, BCCCP
- Geisinger Wyoming Valley Medical Center PGY1 residency: Kristen Lopatofsky, PharmD, BCCCP





# Pharmacy Residency Class of 2021

## Geisinger Clinics

### Kara Cooper

Post-Residency Plans: Geisinger Oral  
Chemotherapy Clinics, Wilkes-Barre

### Elena Denger

Post-Residency Plans: Geisinger Medication  
Therapy & Disease Management Clinic, Lewistown

### Rachel Lazevnick

Post-Residency Plans: Geisinger 65 Forward,  
Wilkes-Barre/Hazleton

### Laruen Pheasant

Post-Residency Plans: Geisinger Dermatology  
Specialty Clinics, Danville

## Geisinger Community Medical Center

### Stephanie Cybulski

Post-Residency Plans: Clinical Pharmacist, Geisinger  
Community Medical Center

### Lindsay Okubo

Post-Residency Plans: PGY2 Infectious Disease,  
Buffalo General Medical Center, Buffalo

## Geisinger Lewistown Hospital

### Miranda Graham

Post-Residency Plans: Clinical Pharmacist, Geisinger  
Lewistown Hospital

### Elyssa Johannesen

Post-Residency Plans: Clinical Pharmacist,  
North Carolina

## Geisinger Medical Center

### Hannah Chun

Post-Residency Plans: PGY2 Internal Medicine,  
UPMC Mercy/Duquesne University, Pittsburgh

### Alison Hamner

Post-Residency Plans: Clinical Pharmacist, Tulane  
Medical Center, New Orleans

### Kayla Hart

Post-Residency Plans: Oncology Clinical Pharmacist,  
Geisinger Medical Center

### Melanie Hawn

Post-Residency Plans: Geisinger Pulmonology  
Specialty Clinic, Danville

### Tram Le

Post-Residency Plans: Clinical Pharmacist,  
Geisinger Medical Center

### Brandon Soltesz

Post-Residency Plans: Oncology Clinical Pharmacist,  
Cleveland Clinic: Taussig Cancer Center, Cleveland

### Zachary Myers

Post-Residency Plans: Critical Care Clinical  
Pharmacist, Geisinger Medical Center

## Geisinger Wyoming Valley Medical Center

### David Moll

Post-Residency Plans: Clinical Pharmacist, Geisinger  
Wyoming Valley Medical Center

### Nicholas Preston

Post-Residency Plans: Clinical Pharmacist, Geisinger  
Medical Center

### Preston (Ben) Setzer

Post-Residency Plans: Clinical Pharmacist,  
Sovah Health, Danville (Virginia)

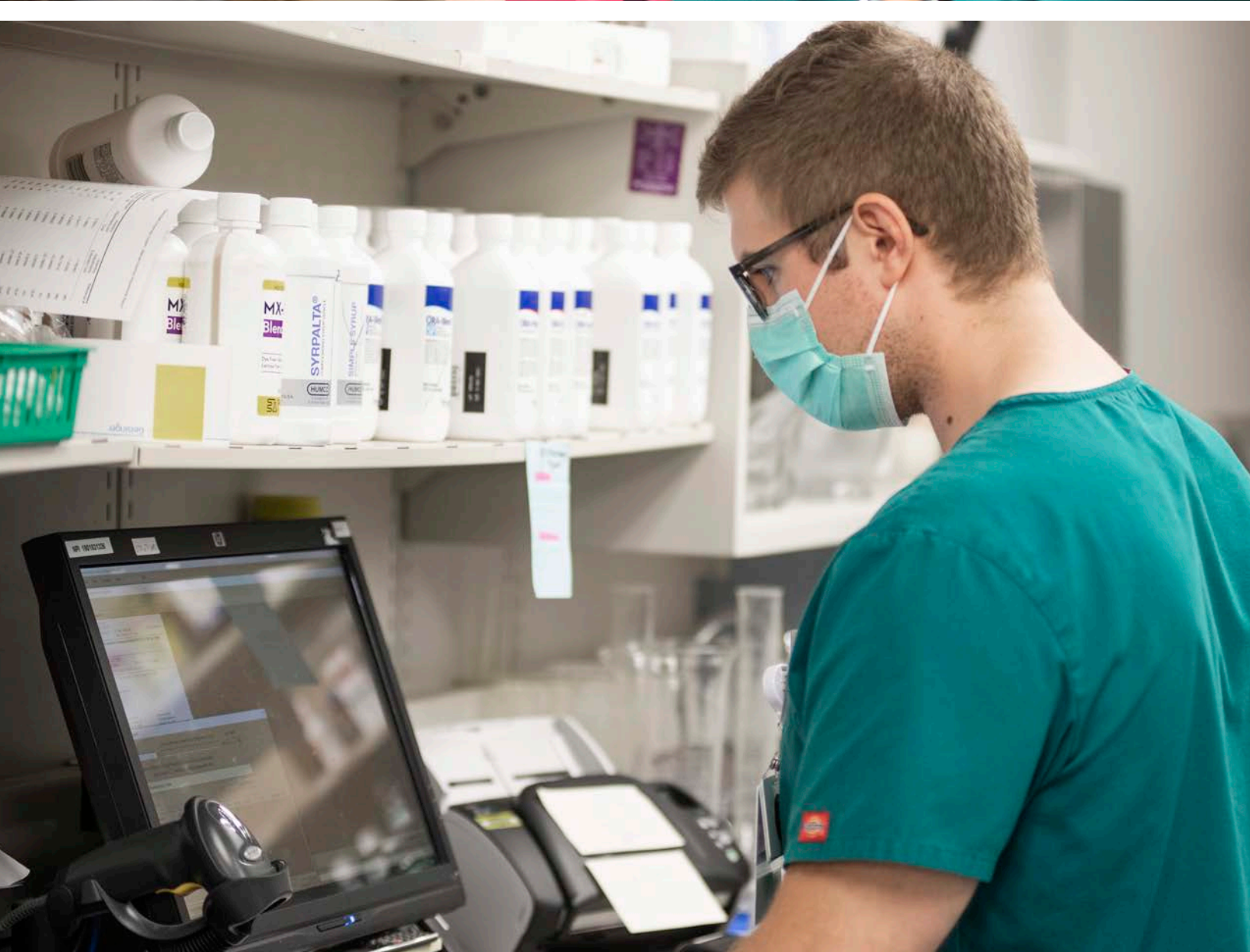
## Pharmacy technician ladder

- The pharmacy technician ladder was revised to a competency/responsibility-based framework.
- Emphasis was placed on recognizing those who achieved pharmacy technician certification through the Pharmacy Technician Certification Board or National Healthcareer Association.
- The change also helped better identify those who should be in a higher position based on their daily responsibilities.
- The technician ladder restructure was the first step in a multi-phase approach to justify a revision of pharmacy technician compensation in the system.
- Following the restructure, pharmacy technician positions underwent a three-phase evaluation for compensation and compression.
  - Phase 1: Technician ladder restructure: Pharmacy technicians were evaluated for assignment to a new profile based on their practice area responsibilities and certification.
  - Phase 2: Premium assignment for pharmacy technicians taking on additional responsibilities such as working across multiple ambulatory care platforms and working in and maintaining skills in areas such as chemotherapy prep and pediatric medication prep.
  - Phase 3: Compression analysis to identify where pharmacy technician wages were not equal to that of the market value based on years of experience and years certified as a pharmacy technician.

## Pharmacy clinical & leadership events

- October 2020: Pharmacy Leadership Retreat
  - Pharmacy coordinators, managers, assistant directors and directors from across the system converged in a virtual environment to discuss different system initiatives and meet with system leaders such as Geisinger President and CEO Jaewon Ryu, MD, JD, and John Bulger, DO, MBA, chief medical officer for Geisinger Health Plan.
- March 2021: Clinical Pharmacy Retreat
  - Using a virtual space, clinical pharmacists from across the Geisinger service area engaged in continuing professional development on topics of best possible medication histories, patient access to electronic health records and several “pearls” sessions on gout, oral chemotherapy and thrombolytic therapies.
- March 2021: Pharmacy Leadership Retreat
  - Still in a virtual space, pharmacy leaders from across the system discussed updates from the system from Dr. Ryu and Ed Hartle, MD, executive vice president and chief medical officer for Geisinger. The management team reviewed the 2020 Employee Engagement Survey results to inform and create a multi-tiered effort to address the engagement needs of Enterprise Pharmacy employees.
- April 2021: Fresh Pharm: A Medication Update
  - The Fresh Pharm program is an annual one-day event where pharmacists and pharmacy residents in Geisinger provide interdisciplinary continuing education to Geisinger staff. Topics at the 2021 program included:
    - New drug updates
    - COVID-19 pharmacotherapy
    - Vaccine updates
    - Pain, addition and opioid management
    - Thrombolytics
    - Diabetes standards of care
    - Resuscitation updates
    - Infectious diseases pearls





# Managed Care

Under a separate entity from Geisinger's clinical enterprise, key functions of the Geisinger Health Plan Pharmacy Services Department include operational oversight of claims processing and setup of prescription drug benefits, formulary development, a Pharmacy and Therapeutics Committee consisting of internal and external members, prior authorization, and reporting. The department consists of over 60 employees and includes pharmacists, nurses, pharmacy technicians, data analysts, benefit analysts, operations coordinators, prior authorization representatives and others. GHP offers nearly every type of medical and prescription drug insurance, including commercial risk, ACA Marketplace, self-insured, self-insured prescription-only, Medicare Advantage Part D, Pennsylvania Medicaid and Pennsylvania CHIP. GHP has prescription benefit clients in Pennsylvania, New Jersey and Maine.



## Pharmacy Benefits Manager transition

- Started with PerformRx as our PBM effective Jan. 1, 2021, and achieved the goal of minimal member impact
- On track to achieve the 2021 savings target of \$20 million
- Successfully navigated a CMS Medicare program audit in June with a few minor findings that are being addressed
- Continuing to work on several challenges and open items from the implementation

## Rx Savings Solutions

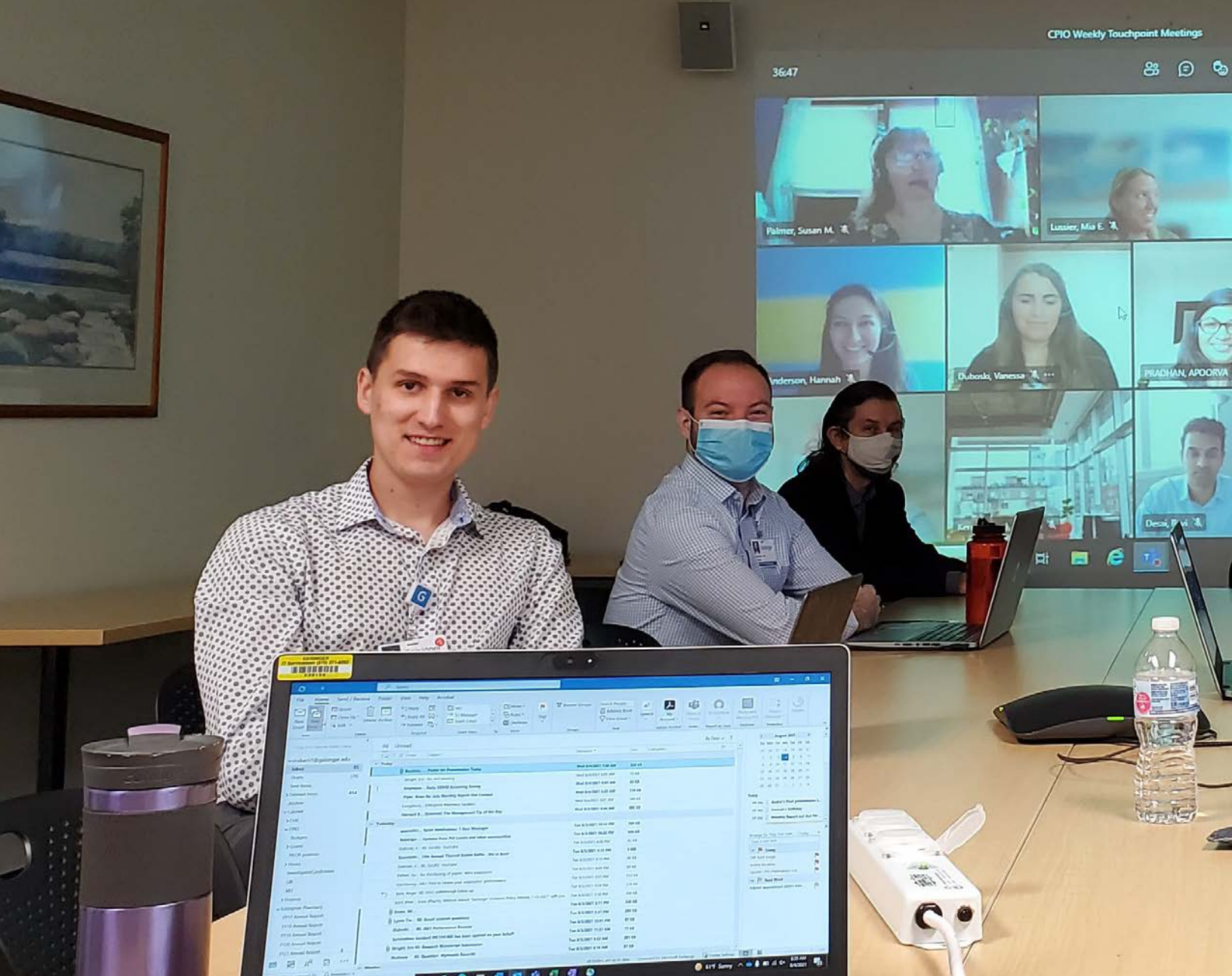
- Rx Savings Solutions is a vendor that helps identify savings for Geisinger members on their medications.
- Savings range from switching to Mail-Order to moving to another medication.
- Available at no extra cost to all fully insured Commercial, Medicare and most self-insured GHP members that have Rx included in their plan.
- Over 1,200 members enrolled since July 2020.
- Over \$600,000 in total savings
  - ~\$135,000 in member savings
  - ~\$485,000 in plan savings

## Site of Care expansion

- On Oct. 1, 2019, GHP implemented a Site of Care program.
- The Site of Care program transitions members on certain infusion medications from a hospital-based infusion site to home-based infusions.
  - Home infusions eliminate the time, cost and stress associated with travel and allow the patient to pick an infusion time that is convenient for them.
- Patients new to treatment have their first two infusions performed at a hospital-based infusion center before moving to home infusions.
- In 2021, we are expanding the program. We started on July 15 with Phase 6, which includes enzymes (Aldurazyme, Cerezyme, Fabrazyme, Lumizyme, Naglazyme)
  - Phase 7 (effective Aug. 15) – Includes miscellaneous drugs (Cimzia, Ilaris, Ilumya, Stelara, and Vypeti)
  - Phase 8 (effective Oct. 15) – Includes alpha-1 protease inhibitors (Aralast, Glassia, Prolostin-C, Zemaira)
  - Phase 9 (effective Dec. 15) – Includes muscle disorders (Vyondys 53, Amondys 45, Viltepso, Exondys 51, Radicava)
  - Phase 10 (effective March 15, 2022) – Includes miscellaneous neuro indications (Soliris, Ultomiris, Uplizna, Onpattro)
- Since Oct. 1, 2019, the Site of Care program has saved \$6.6 million.

## Hematology/Oncology “fast pass” process

- GHP, together with the Hematology/Oncology and Central Med Hub teams, put together a “fast pass” process whereby providers don’t have to obtain prior authorization for chemo medications that are ordered as part of the Epic Beacon Protocols.
- The process went live April 26.
- This enables the nurse specialist to schedule chemotherapeutic infusions as quickly as possible without having to wait for a prior authorization.
- The goal was to speed up the process and timeline by which patients can start therapy.



# Center for Pharmacy Innovation and Outcomes





The CPIO is a dedicated pharmacy research unit embedded within Enterprise Pharmacy and fully supported by Geisinger Research. This unit's mission is to care for our patients and optimize medication use through careful design and evaluation of pharmacy services and medication use within our system. We are composed of a dedicated team of full-time and clinician faculty (assistant, associate and full professors), program manager, project manager, research coordinator and assistants, postdoctoral fellow and investigational drug pharmacist.

Leveraging Geisinger's rich culture of innovation, fully integrated and archived electronic health record, large genomic database, long-term patient cohorts, integrated system-level pharmacy services and embedded pharmacy researchers, we can study real-world problems and develop and test innovative solutions. Our vision is to be a world leader in pharmacy research through the evaluation, implementation and dissemination of safe, responsible, sustainable and patient-centric use of medications. Our goal is to rigorously test innovations in the real world to improve the medication use system. Our focused efforts include integrating investigational drug services, acting as a principal research resource to pharmacists and residents, developing and conducting real-world medication-focused outcomes studies, demonstrating effectiveness of pharmacy programs, developing and testing innovative solutions to medication-related problems, and assisting the clinical enterprise in translating research learnings into practice.

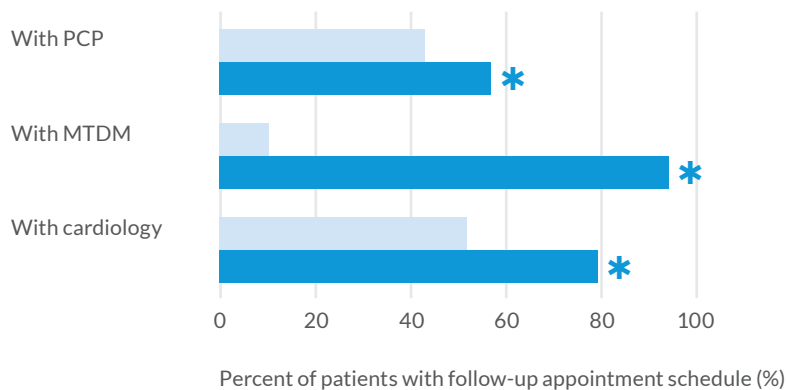
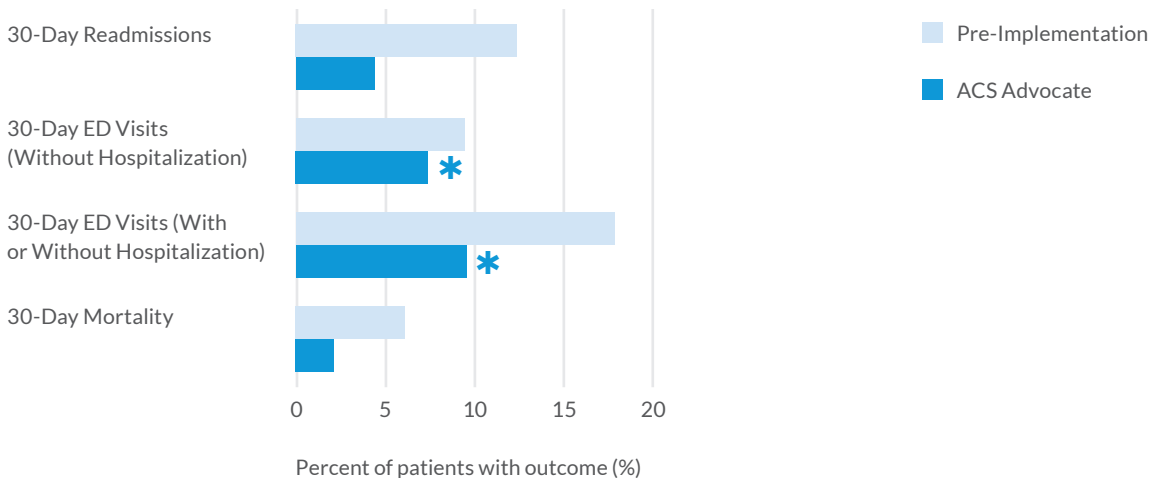
# Completed research and findings

## Acute Coronary Syndrome (ACS) Advocate

Principal investigator(s): Steve Voyce, MD, Jove Graham, PhD

Funding provided by: AstraZeneca

- Prospective study of ACS patients after discharge from hospital (GMC), compared with historical cohort
- ACS Advocate program added in-hospital education and outpatient Medication Therapy Disease Management (MTDM) pharmacist follow-up to improve transitions of care and optimal medication therapy
- ACS Advocate program significantly increased the number of one-month follow-up visits with cardiology, primary care and MTDM pharmacy
- Rates of 30-day hospital readmission and Emergency Department visits were significantly reduced
- ACS Advocate patients were also significantly more likely to be discharged from the hospital with prescriptions for certain recommended medications (P2Y12 inhibitors, high-dose statins)



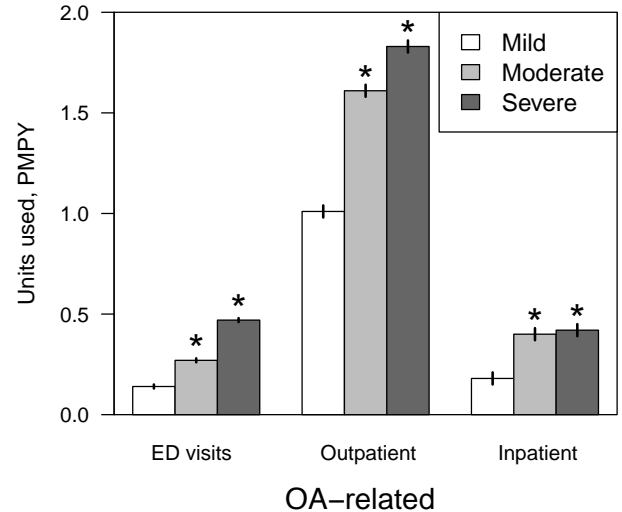
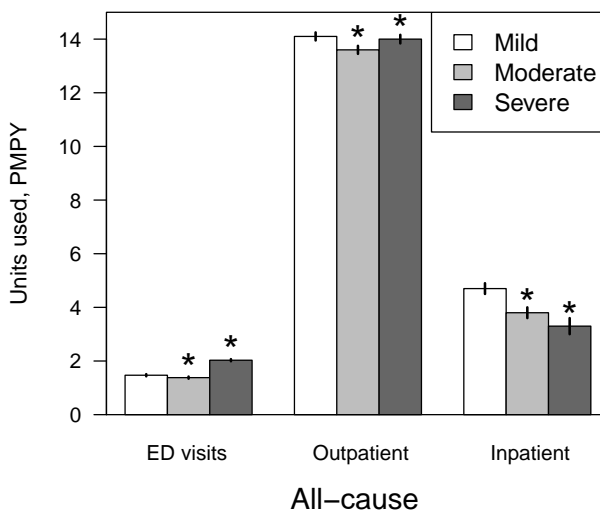
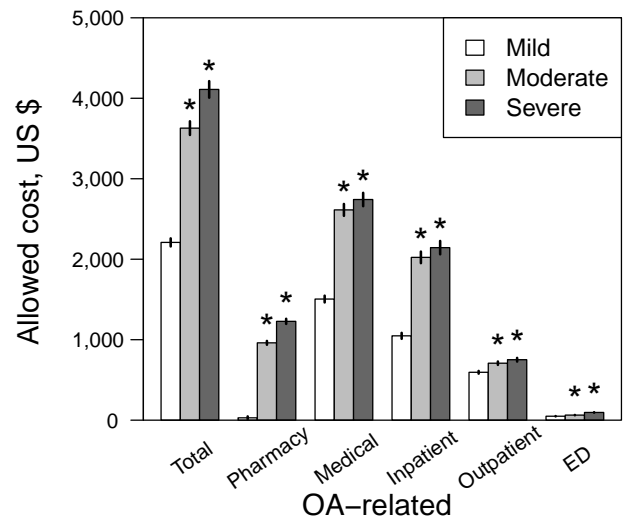
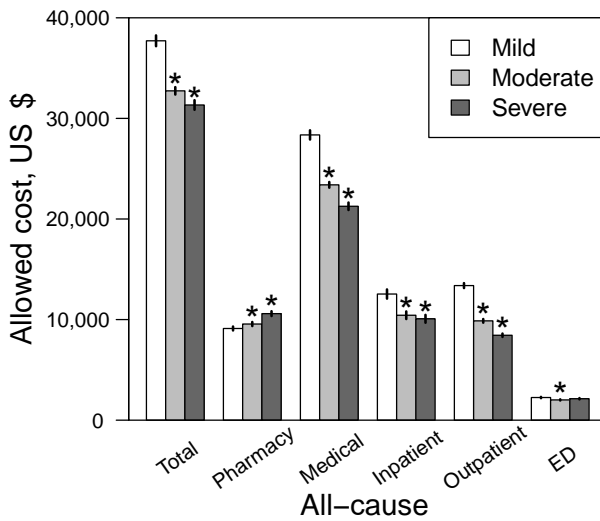


## Clinical and Economic Impact of Osteoarthritis

Principal investigator(s): Jove Graham, PhD

Funding provided by: Pfizer

- Retrospective study of osteoarthritis (OA) patients in the Geisinger system, 2001–2018
- 290,897 Geisinger patients reviewed
- Prevalence of OA has increased steadily over time, with higher percentages of younger patients (18–45) affected and higher average BMI over time.
- OA patients were divided into groups based on pain scores and intensity of treatment, and both of these were strongly associated with OA-related utilization and costs. All-cause utilization and costs were related to pain and treatment intensity in some instances, but not consistently across the board.



## Improving Medication reconciliation Processes through Observation and Evaluation: IMPROVE

Principal investigator(s): Michael Gionfriddo, PharmD, PhD

Funding provided by: Geisinger Health Plan Quality Fund

- Mixed-methods study combining insights from observations, interviews and surveys of both Geisinger clinical staff and patients to better understand the process of collecting a medication history and reconciling medications
  - 170 direct observations of patient encounters across 15 primary care clinics
  - Semi-structured interviews and surveys conducted with Geisinger clinical staff and patients on their experiences and perspectives on medication reconciliation and medication history
    - 48 interviews and 616 surveys (23% response rate) completed with Geisinger clinical staff
    - 10 interviews and 577 surveys (11% response rate) completed with patients
  - 53% average adherence to best practices for conducting a medication history
  - 96% of patients and staff felt having an accurate medication list was important
  - 44% of staff felt time influenced their ability to complete a medication history
  - 89% of staff felt that patient lack of knowledge was a barrier to medication reconciliation
  - 38% of staff felt there was a standardized process for conducting medication reconciliation
- Working with Ambulatory Care, developed, implemented and evaluated an educational program for medication reconciliation in Geisinger's ambulatory care clinics
  - 55 direct observations of patient encounters across 3 primary care clinics
  - 15 interviews completed with Geisinger clinical staff
  - 296 pre-surveys and 178 post-surveys completed by Geisinger clinical staff
  - 59% of staff completed the entire education and 81% of staff completed a portion of the education

## The Impact of a Hematopoietic Cellular Therapy Pharmacist on Clinical and Humanistic Outcomes: A RE-AIM Framework Analysis

Principal investigator(s): Benjamin Andrick, PharmD, BCOP

Funding provided by: Geisinger Health Plan Quality Fund

- Designed and implemented a hematopoietic stem cell transplant pharmacy medication therapy management program
- Program was successfully implemented and sustained beyond the initial 2-year pilot
- Utilization of an implementation framework to evaluate the program implementation



## HCT MTDM RE-AIM Evaluation

### Reach

Number of institutionally performed allogeneic stem cell transplant patients followed by HCT MTDM, n	36
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### Effectiveness:

Pharmacist direct interventions for allogeneic patients	
# of medication managed, n	527
# of medication related problems identified, n	3828
# of pharmacist interventions made by the pharmacist, n	2748
Documented time spent on patient care, hr	268 – 332
Immunosuppression management achievement of time in therapeutic range, n (%)	835 (73)
Patient and caregiver satisfaction survey	25 (75)
Strong satisfaction with care, n (%)	7 (21)
Satisfaction with care n (%)	1 (3)
Generally, not sure how satisfied with care, n (%)	

### Adoption:

Days HCT MTDM was designated on pharmacist schedule, FTE equivalent	0.6
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### Implementation:

Number of HCT MTDM encounters over time, n	1924
Allogeneic, n (%)	1531 (80)
Autologous, n (%)	121 (6)
Hematology, n (%)	272 (14)
Documented time spent on patient encounters, hrs	483 – 588
Allogeneic, hrs	268 – 332
Autologous, hrs	41 – 50
Hematology, hrs	173 – 205

### Maintenance:

Confirmation of financial support for the HCT MTDM beyond the funded two-year study period	1 funded FTE
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## EQRx collaboration

- 5-year multimillion-dollar collaboration began June 2020
- EQRx is a new biopharmaceutical company with the vision to bring to market as good or better branded medicines at dramatically lower cost
- Aim is to drive down high-cost drug spend largely in oncology and immunotherapies
- Collaboration explores high drug spend trends, economic modeling, clinical trials and planning for drug adoption
- Collaboration led by enterprise pharmacy
- First year, engaged personnel from pharmacy, medicine, oncology, rheumatology, Geisinger Health Plan, the Steele Institute, research and administration and hiring of 4 new full-time Geisinger employees
- Pharmacy pillar involvement included representatives from acute, ambulatory, strategy, managed care, procurement and the CPIO



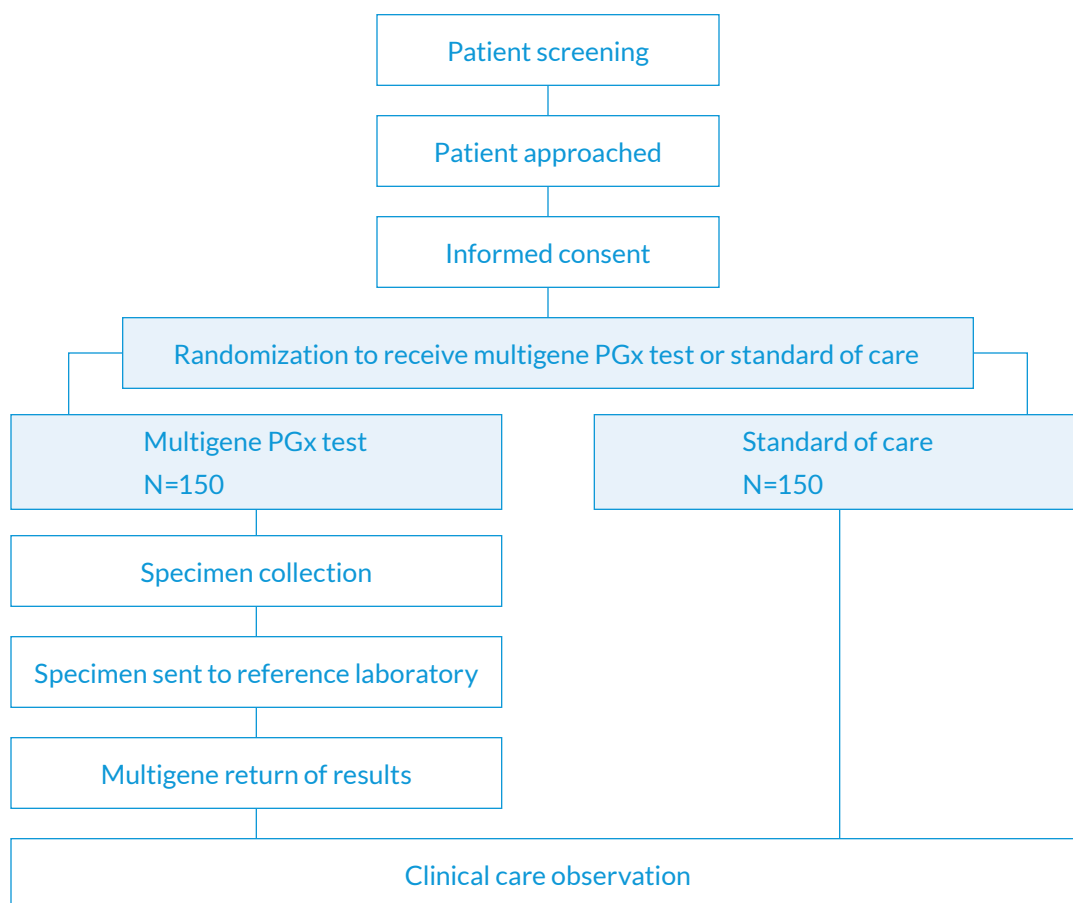
## Incoming grants for 2021–2022

### Implementation and Evaluation of Preemptive Pharmacogenomics Testing in an Aging Population

Principal investigator: Ryley Uber, PharmD

Funding provided by: Pennsylvania Department of Health

- Grant dollars will be used to assess the feasibility and value of preemptive, multigene pharmacogenomics (PGx) testing among aging patients, namely those following at Geisinger 65 Forward locations.
  - Primary objective: To assess the feasibility of preemptive PGx implementation among elderly, polypharmacy, primary care patients.
  - Secondary objectives: 1) To evaluate the impact of preemptive PGx implementation on adherence to evidence-based, genotype-concordant therapy; and 2) To compare healthcare utilization and costs between patients with and without preemptive PGx testing.
- Within the past 3 years, 82.5% of patients following at Geisinger 65 Forward locations received at least one medication with a PGx guideline and 85.7% received one in the past 5 years.
- Patients who follow at a Geisinger 65 Forward location and are taking 5 or more medications are eligible for enrollment in the study.
- A total of 300 participants are currently expected to be enrolled. Participants will be randomized 1:1 to either receive an evidence-based pharmacogenomics multigene test (i.e., intervention arm) or to not receive the test (i.e., control arm; standard of care).

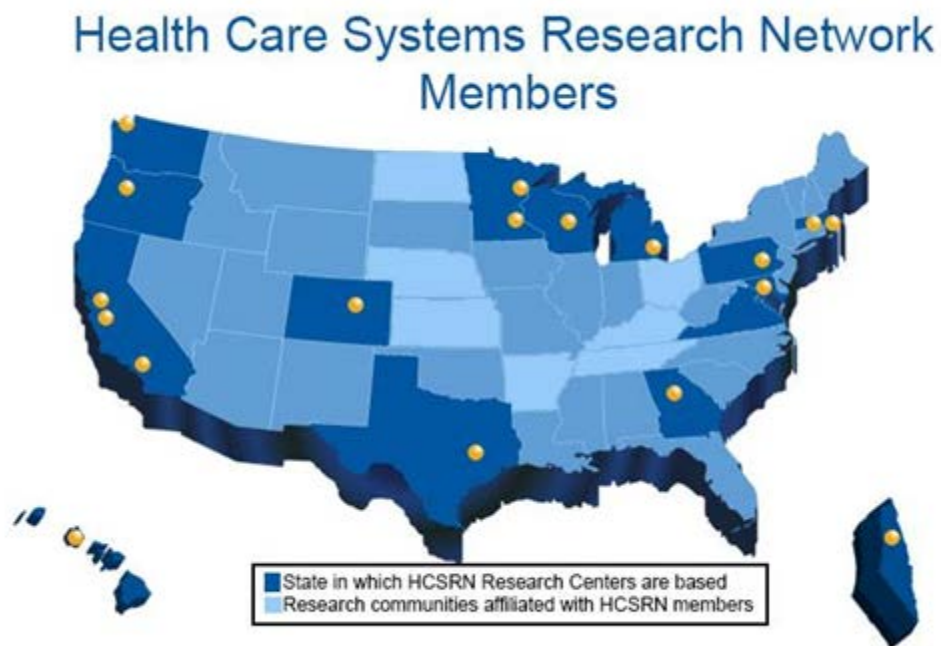


## Comparison of Type 2 Diabetes Pharmacotherapy Regimens using Targeted Learning

Site principal investigator: Jove Graham, PhD

Funding awarded by: Patient-Centered Outcomes Research Institute (PCORI)

- Multi-site observational study across 6 health systems, funded by PCORI (national public-private partnership)
- Head-to-head comparative effectiveness analyses of second-line agents in Type 2 diabetes (SGLT2i, GLP-1, SU, DPP-4)
- Analysis of CVD benefits in populations at lower baseline risk, and other patient subgroups
- Target outcome is 3-point MACE events, emulating a clinical trial design
- 3-year project





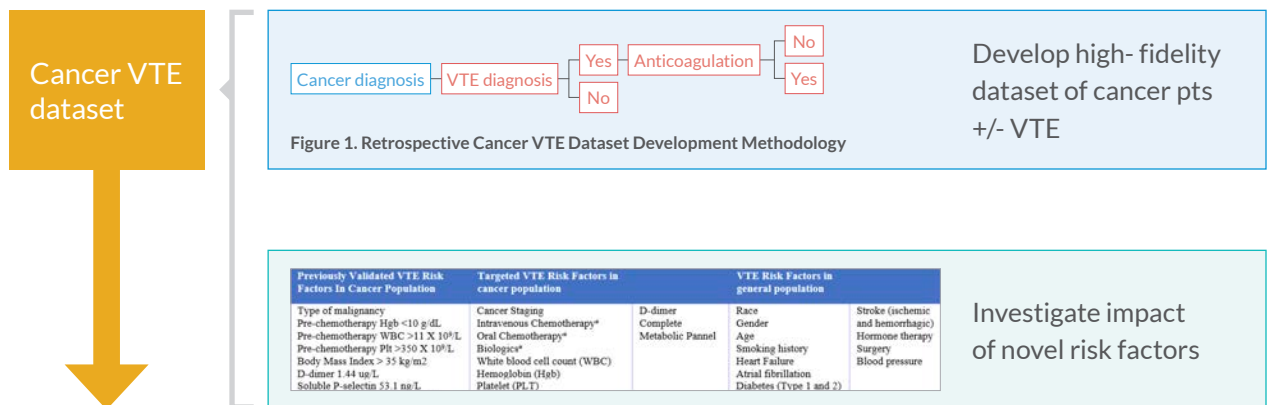
# Machine Learning Approach to Venous Thromboembolism Prediction in Newly Diagnosed Patients with Cancer Receiving Chemotherapy

Principal investigator: Benjamin Andrick, PharmD, BCOP

Funding awarded by: Hematology Oncology Pharmacy Association (HOPA)

- To develop a high-fidelity dataset of cancer patient receiving chemotherapy with and without VTE to identify known as well as potential novel risk factors existing at the time of cancer diagnosis to characterize their association with development of VTE.
- To develop a machine learning based model for predicting a VTE for newly diagnosed cancer patients receiving chemotherapy versus the Khorana Score.
- Utilize genomic risk factors to develop a machine learning predictive model for VTE in cancer patients receiving chemotherapy.

## Cancer VTE ML: Overview



patient characteristics	Risk score
Site of cancer	
Very high risk (stomach, pancreas)	2
High risk (lung, lymphoma, gynecological, bladder, or testicular)	1
Prechemotherapy platelet count $\geq 150 \times 10^9/L$	1
Prechemotherapy hemoglobin level <10 g/L or use of red cell growth factors	1
Prechemotherapy leukocyte count $>11 \times 10^9/L$	1
Body Mass Index $\geq 35 \text{ kg/m}^2$	1

Evaluate KS in dataset



Evaluate ML model in cancer VTE dataset



Evaluate genotype RF in ML VTE model

# Pharmacy Innovation Alliance

The Pharmacy Innovation Alliance pillar is comprised of contemporary and progressive health-system (HS) participants who have the capabilities to innovate in the integrated delivery network (IDN) pharmacy enterprise value market space. The collective capabilities of the PIA aim to achieve the scale and synergies needed to create industry leading innovation within today's healthcare environment, seeking to develop solutions that address the challenges of IDN and HS enterprise pharmacy.





## Welcome to the Pharmacy Innovation Alliance



### Robert Granko

System Director  
Pharmacy Innovation Alliance

Geisinger's pharmacy team is recognized for leading innovative and evidence-based programs of care delivery, research and education. As part of the systematic innovation supported throughout Geisinger Enterprise Pharmacy, a new 10th Enterprise Pharmacy pillar, the Pharmacy Innovation Alliance (PIA), has been established in 2021.

While still new and evolving, the PIA is comprised of contemporary and progressive health-system (HS) participants who have the capabilities to innovate in the integrated delivery network (IDN) pharmacy enterprise value market space.

The collective capabilities of the PIA aim to achieve the scale and synergies needed to create industry leading innovation within today's healthcare environment, seeking to develop solutions that address the challenges of IDN and HS Enterprise Pharmacy. Further, the alliance allows PIA members to differentiate themselves by leveraging the healthcare ecosystem with a goal of:

- Building and strengthening relationships with transformative IDNs, HS and Industry partners to create innovative aggregation models
- Aggregating disparate pharmacy, pharmaceutical and ancillary support contracts to leverage the economies of scale of the PIA partnership
- Accessing and cross-sharing rich strategic and market competitive pharmacy enterprise knowledge management
- Strategizing and deploying novel solutions for IDNs, HS and industry partners to drive market competitiveness and enhance care delivery

As we work to build out the PIA infrastructure, we remain excited about the future possibilities of the innovative partnerships PIA is creating.

# **Publications, presentations, and posters**

## Peer-reviewed articles

1. Bautista-Orduno KG, Dorsey-Trevino EG, Gonzalez-Gonzalez JG, Castillo-Gonzalez DA, Garcia-Leal M, Raygoza-Cortez K, **Gionfriddo MR**, Rodriguez-Gutierrez R. American thyroid association guidelines are inconsistent with Grading of Recommendations Assessment, Development, and Evaluations-A meta-epidemiologic study. *J Clin Epidemiol*. 2020 Jul;123:180-188.e2. DOI: 10.1016/j.jclinepi.2020.02.010
2. Blanchard C, **Duboski V, Graham J, Webster L, Kern M, Wright E, Gionfriddo MR**. A mixed methods evaluation of the implementation of pharmacy services within a team-based at-home care program. *Res Soc Adm Pharm*. 2021 Mar; DOI: 10.1016/j.sapharm.2021.02.017.
3. Bohan CO, Wirtz MM, Hendrix P, Goren O, Schirmer CM, Islak C, **Grassi DM**, Dalal S, Weiner G, Griessenauer CJ. Utility of P2Y12 reactive unit assessment on ticagrelor in cerebral aneurysms treated with intracranial stenting and flow diversion: cohort study and case report from two neurovascular centers. *World Neurosurg*. 2020 Oct;142:e445-e452. DOI: 10.1016/j.wneu.2020.07.052.
4. **Graham J, Tusing LD, Gregor CM, Wright EA**. Community pharmacists' perceptions of care following the implementation of a transitions-of-care program. *J Pharm Pract*. 2020 Oct;33(5):586-591. DOI: 10.1177/0897190018824819
5. Grandizio LC, **Graham J**, Klena JC. Current trends in WALANT surgery: a survey of American Society for Surgery of the Hand members. *JHS GO*. 2020 Jul;2(4):186-190. DOI: 10.1016/j.jhsg.2020.04.011
6. **Graybill M, Duboski V, Webster L, Kern M, Wright E, Graham J, Blanchard C, Gionfriddo MR**. Medication therapy problems identified by pharmacists conducting telephonic comprehensive medication management within a team-based at-home care program. *J Am Coll Clin Pharm*. 2021 May;1-7. DOI: 10.1002/jac5.1466
7. **Hart K, Andrick B, Grassi S**, Manikowski J, **Graham J**. Cancer-associated venous thromboembolism treatment with anti-Xa Versus weight-based enoxaparin: A Retrospective Evaluation of Safety and Efficacy. *Ann Pharmacother*. 2021 Jan;55(9):1120-1126. DOI: 10.1177/1060028020988362.
8. **Jones LK**, Jefferson CR, Chen N, Murray MF. Genetic screening for familial hypercholesterolemia identifies patients not meeting cholesterol treatment guidelines. *Coron Artery Dis*. 2020 Dec; DOI: 10.1097/MCA.0000000000000998
9. **Jones LK**, Sturm AC, Seaton TL, **Gregor C**, Gidding SS, Williams MS, Rahm AK. Barriers, facilitators, and solutions to familial hypercholesterolemia treatment. *PLoS One*. 2020 Dec;e0244193. DOI: 10.1371/journal.pone.0244193
10. Khan S, **Gionfriddo MR**, Cortes-Penfield N, Thunga G, Rashid M. The trade-off dilemma in pharmacotherapy of COVID-19: systematic review, meta-analysis, and implications. *Expert Opin Pharmacother*. 2020 Oct;21(15):1821-1849. DOI: 10.1080/14656566.2020.1792884
11. **Lee GW, Mathur AD, Andrick BJ**, Leese E, **Zally D**, Gatson N. Pharmacist value-added to neuro-oncology subspecialty clinics: A pilot study uncovers opportunities for best practices and optimal time utilization. *J Oncol Pharm Pract*. 2020 Dec;26(8):1937-1941. DOI: 10.1177/1078155220957738
12. Mohammad RA, Betthausen KD, Korona RB, Coe AB, Kolpek JH, Fritschle AC, Jagow B, Kenes M, MacTavish P, **Slampak-Cindric AA**, Whitten JA, Jones C, Simonelli R, Rowlands I, Stollings JL. Clinical pharmacist services within intensive care unit recovery clinics: An opinion of the critical care practice and research network of the American College of Clinical Pharmacy. *JACCP*. 2020 Nov; 3(7): 1369-1379. DOI: 10.1002/jac5.1311



13. **Piper BJ**, McCall KL, Kogan LR, Hellyer P. Assessment of controlled substance distribution to U.S. veterinary teaching institutions from 2006 to 2019. *Front Vet Sci*. 2020 Dec;7: DOI: 10.3389/fvets.2020.615646
14. Rodriguez-Gutierrez R, **Gionfriddo MR**. Reply to “An evolving role for GRADE-trained methodologists in the American Thyroid Association Clinical Practice Guideline Development Process” by Cord Sturgeon and Brian W. Kim. *J Clin Epidemiol*. 2021 Apr;132:148. DOI: 10.1016/j.jclinepi.2020.12.001
15. Rosengart A, Collins MK, Hendrix P, **Uber R**, **Sartori M**, Jain A, Mao J, Oded G, Schirmer CM, Griessenauer CJ. P2Y12 inhibitors in neuroendovascular surgery: An opportunity for precision medicine. *Interv Neuroradiol*. 2021 Feb; DOI:10.1177/1591019921991394
16. Writer R, Barthen C, Antinopoulos B, **Uber R**, Stevenson JM, Berenbrok LA. How community pharmacists envision using pharmacogenomic data: A qualitative analysis. *J Am Pharm Assoc*. 2021 Apr;S1544-3191(21)00156-4. DOI:10.1016/j.japh.2021.04.001
17. Zimmerman JJ, Harmon LA, Smithburger PL, **Chaykosky D**, Heffner AC, Hravnak M, Kane JM, Kayser JB, Lane-Fall MB, Matos RI, Mauricio RV, Murphy DJ, Nurok M, Reddy AJ, Ringle E, Seferian EG, Smalls-Mantey NM, To KB, Kaplan LJ. Choosing wisely for critical care: the next five. *Crit Care Med*. 2021 Mar;49(3):472-481. DOI: 10.1097/CCM.0000000000004876.
18. **Zook A**, **Greskovic GG**. Using a top-of-license practice model to optimize patient outcomes in diabetes. *ADCES in Practice*. 2020 Nov;8(6):42-47. DOI: 10.1177/2633559X20954402

## Published abstracts

1. **Andrick B**, Curtis J, Vadakara J, Johns A, **Sneidman R**, Lynch J. Time to Infection Following Matched Unrelated (MUD) or Matched Related Donor (MRD) Stem Cell Transplant with Post-Transplant Cyclophosphamide (PTCy) Versus Methotrexate Plus a Calcineurin Inhibitor. 2021 TCT Meetings of ASTCT and CIBMTR, February 8-12, 2021, Virtual. *Cell Ther Transplant*. 2021;27(3, Supplement):S358-S359. DOI: 10.1016/S2666-6367(21)00460-7
2. **Andrick B**, **Mathur A**, **Maiers T**, **Graham J**, Vadakara J. Pharmacist Versus Physician Provider Management of Hydroxyurea Therapy for Polycythemia Vera (PERMANACE). 62nd ASH Annual Meeting and Exposition, December 5-8, 2020, Virtual. *Blood*. 2020;136(Supplement 1):44-45. DOI: 10.1182/blood-2020-142864
3. **Andrick B**, **Tusing L**, **Jones L**, Hu Y, **Sneidman R**, Lynch J, Basu S, Vadakara J. Hematopoietic Cellular Therapy Pharmacist Implementation at a Rural Transplant Center: Impact on Clinical and Humanistic Outcomes Using the RE-AIM Framework. 2021 TCT Meetings of ASTCT and CIBMTR, February 8-12, 2021, Virtual. *Cell Ther Transplant*. 2021;27(3, Supplement):S462. DOI: 10.1016/S2666-6367(21)00601-1
4. **Gionfriddo MR**, **Duboski V**, **Graham J**, **Kern M**, **Wright E**. A Mixed-Methods Evaluation of Medication Reconciliation Using Interviews and Surveys in Primary Care Practices. Abstracts from the 2021 Health Care Systems Research Network Annual Conference. *J Patient Cent Res Rev*. 2021;8:154-217. DOI: 10.17294/2330-0698.1882
5. **Gionfriddo MR**, **Duboski V**, **Kern M**, Maddineni B, Hu Y, **Wright E**. Effect of a Web-Based Medication Reconciliation Tool on Medication Discrepancies in a Primary Care Population. Abstracts from the 2021 Health Care Systems Research Network Annual Conference. *J Patient Cent Res Rev*. 2021;8:154-217. DOI: 10.17294/2330-0698.1882

6. **Graham J**, Novosat T, Sun H, **Piper B**, Boscarino J, **Kern M**, **Duboski V**, **Wright E**, Robinson R, Casey E, Beck C, Hall J, Schepman P. POS1089 Association Between Pain Severity and Healthcare Utilization in an Osteoarthritis Population: an 18-year Retrospective Cohort Study. *Ann Rheum Dis*. 2021;80:824.
7. **Graham J**, Novosat T, Sun H, **Piper B**, Boscarino J, **Kern M**, **Duboski V**, **Wright E**, Schepman P, Robinson R, Casey E, Beck C, Hall J. Osteoarthritis in a Large Integrated Health System Population: 18-Year Retrospective Review. *Arthritis Rheumatol*. 2020;72. (suppl 10).
8. **Graham J**, Novosat T, Sun H, **Piper B**, Boscarino J, **Kern M**, **Duboski V**, **Wright E**, Schepman P, Reiley J, Robinson R, Casey E, Beck C, Hall J. Patterns of Osteoarthritis Care Across Severity Stages Defined by Treatment Intensity. *Osteoarthr Cartil*. 2021;12 (suppl 1). DOI: 10.1016/j.joca.2021.02.296

## Invited presentations

1. **Andrick B**. Ambulatory Hematology/Oncology Pharmacist Documentation in EPIC: Moving Beyond Free Text. Hematology/Oncology Pharmacy Association Pharmacy Practice Meeting, Virtual, September 2020.
2. **Andrick B**. Predicting the Future: Understanding Clinical Predictive Models for Cancer. Hematology/Oncology Pharmacy Association Annual Meeting, Virtual Meeting, April 2021.
3. **Cooper K**, **Denger E**, **Lazevnick R**, **Pheasant L**. Medication Updates in the 2021 ADA Standards of Medical Care in Diabetes. Fresh Pharm...A Medication Update, Virtual, April 2021.
4. **Denger E**. Clinical Outcome and Safety Profile of Low-Dose Angiotensin Receptor Neprilysin Inhibitor vs Target Dose Angiotensin Converting Enzyme Inhibitor/Angiotensin Receptor Blocker in Patients with Heart Failure with Reduced Ejection Fraction. 2021 Eastern States Conference for Pharmacy Residents and Preceptors, Virtual, April 2021.
5. **Denger E**, Pezzino N. Keeping Group Sessions Sweet: Tips and Tricks on Facilitating Meaningful Group Sessions for Patients with Diabetes. Pennsylvania Pharmacists Association Midyear Conference, Virtual, February 2021.
6. **Gionfriddo M**. Shared-Decision Making: Rights, Roles, and Responsibilities of Patients, Caregivers, and the Healthcare Team. 2020 American College of Clinical Pharmacy Annual Meeting, Virtual, October 2020.
7. **Kempa K**. Anticoagulation Safety from A to X. Geisinger 11th Annual Current Concepts in Medication Safety Conference, Virtual, March 2021.
8. **Kotch K**. Providing Safe Care During COVID-19 Pandemic. Geisinger 11th Annual Current Concepts in Medication Safety Conference, Virtual, March 2021.
9. **Moll D**, **Kerestes J**, Strony Jr. R. Incidence of Hypoglycemia in Patients with Renal Dysfunction Receiving Weight-Based Insulin in Acute Hyperkalemia. Eastern States Conference for Pharmacy Residents and Preceptors, Virtual, April 2021.
10. Muhlestein JB, **Graham J**, Tchong J, McKinnon A, Knight S, May H, Bair T, Drozda J. Development and Initial Utilization of a Multi-Institutional Distributed Data Network Designed to Evaluate Real-World Clinical Outcomes in Patients Presenting for Percutaneous Coronary Intervention (PCI): Results from the Building the Unique Device Identifier (UDI) Into Longitudinal Data for Medical Device Evaluation (BUILD) Network. American Heart Association's Scientific Sessions 2020, Virtual, November 2020.

11. **Preston N.** Methods of vasopressor weaning in recovering septic shock. Eastern States Conferences for Pharmacy Residents and Preceptors, Virtual, May 2021.
12. **Slampak-Cindric A.** Check Yourself Before You Wreck Yourself: Teaching Self Evaluation and Personal Performance Improvement. Eastern States Conference, Virtual, April 2021.
13. **Slampak-Cindric A.** Check Yourself Before You Wreck Yourself: Teaching Self Evaluation and Personal Performance Improvement. National Pharmacy Preceptor's Conference, Virtual, October 2020.
14. **Slampak-Cindric A.** Engaging the Team. Society of Critical Care Medicine Annual Congress, Virtual, April 2021.
15. **Slampak-Cindric A.** Poisonings and overdoses: pharmacology of toxicology. Geisinger Medical Center ACPE Accredited Critical Care Medicine Fellowship Lecture Series, Geisinger Medical Center, Danville, PA., February 2020.
16. **Slampak-Cindric A.** Working Efficiently for Work Life Integration. American Society of Health System Pharmacists Midyear Clinical Meeting, Virtual, December 2020.
17. **Uber R.** A machine learning approach to predict clopidogrel bleeding outcomes among genotyped post-PCI patients. American College of Clinical Pharmacy Annual Meeting, Virtual, October 2020.
18. **Zook A.** Diabetes Medications 101: Focus on Technology for Managing Glucose Levels & Insulin Prescribing. Lecture Jefferson University Physician Assistant Class, Virtual, August 2020.
19. **Zook A.** Diving into Continuous Glucose Monitoring. Pennsylvania Pharmacists Association Annual Conference, Virtual, October 2020.
20. **Zook A, Logan T.** Care Quality Equals Revenue Quantity in Value-Based Models. American Pharmacists Association Annual Meeting & Exposition, Virtual, March 2021.
21. **Zook A.** Diving into Continuous Glucose Monitoring Encore Presentation. Pennsylvania Pharmacists Association Continuing Pharmacy Education Program, Webinar, June 2021.

## Internal seminars

1. **Andrick B.** Bone Marrow Transplant Nursing Primer: Conditioning Regimen, Febrile Neutropenia & Fungal Infections. Geisinger Bone Marrow Transplant Program, Danville, PA, October 2020
2. **Andrick B.** Chemotherapy Education 101. Hematology/Oncology Fellows Lecture, Danville, PA, September 2020.
3. **Andrick B.** Pharmacotherapy of Graft Versus Host Disease. Geisinger BMT Lecture Series, Danville, PA, September 2020.
4. **Budzyn M.** Seeing Through the Smoke: Smoke Inhalation and Toxic Exposure. Geisinger 11th Annual Current Concepts in Medication Safety Conference, Virtual, March 2021.
5. **Denger E, Pheasant L.** 21st Century Cures Act and Documenting in the Electronic Health Record. Enterprise Pharmacy Spring Retreat, Virtual, February 2021.
6. **Slampak-Cindric A.** Introduction to Pharmacology. Geisinger Medical Center School of Radiologic Technology, Danville, PA. January 2021.



7. **Slampak-Cindric A.** Pharmacotherapy of Analgesia. Geisinger Medical Center School of Radiologic Technology, Danville, PA. January 2021.
8. **Slampak-Cindric A.** Pharmacotherapy of Contrast. Geisinger Medical Center School of Radiologic Technology, Danville, PA. March 2021.

## Poster presentations

1. **Andrick B, Mathur A, Maiers T, Graham J, Vadakara J.** Pharmacist versus physician provider management of hydroxyurea therapy for polycythemia vera (PERMANCE). American Society of Hematology (ASH) 62nd Annual Meeting, Virtual, December 2020.
2. **Cho J, Lauver B, Dillon C.** Evaluating usage of meropenem in patients with penicillin or cephalosporin allergies. American Society of Health-System Pharmacist (ASHP) Midyear Clinical Meeting, Virtual, December 2020.
3. **Denger E, Krahe-Dombrowski S, LeBeau J.** Promoting optimal medication therapy by identifying the prevalence of GLP-1 and DPP-4 concomitant prescribing within Geisinger. American Society of Health System Pharmacists (ASHP) Midyear Clinical Meeting, Virtual, December 2020.
4. **Fox D, Ly K, Oldt C, Hale SF, Slampak-Cindric A.** Evaluation of Push Dose Epinephrine and Phenylephrine at Geisinger Hospitals. 2020 American Society of Health-System Pharmacists (ASHP) Midyear Clinical Meeting, Virtual, December 2020.
5. **Gionfriddo MR, Duboski V, Kern M, Maddineni B, Hu Y, Wright E.** Effect of a web-based medication reconciliation tool on medication discrepancies in a primary care population. 2021 Health Care Systems Research Network (HCSRN) Conference, Virtual, May 2021.
6. **Gionfriddo MR, Duboski V, Kern M, Wright E.** Patient perceptions of a web-based medication reconciliation tool. 2021 Health Care Systems Research Network (HCSRN) Conference, Virtual, May 2021.
7. **Gionfriddo MR, Duboski V, Graham J, Kern M, Wright E.** A mixed methods evaluation of medication reconciliation using interviews and surveys in primary care practices. 2021 Health Care Systems Research Network (HCSRN) Conference, Virtual, May 2021.
8. **Gionfriddo MR, Middernacht A, Duboski V, Kern M, Wright E.** Adherence to best practices for medication reconciliation identified through observations in primary care practices. 2021 Health Care Systems Research Network (HCSRN) Conference, Virtual, May 2021.
9. **Graham J, Novosat T, Sun H, Piper B, Boscarino J, Kern M, Duboski V, Wright E, Robinson R, Casey E, Beck C, Hall J, Schepman P.** Association between pain severity and healthcare utilization in an osteoarthritis population: an 18-Year retrospective cohort study. European League Against Rheumatism (EULAR) 2021 Annual Meeting, Virtual, June 2021.
10. **Graham J, Novosat T, Sun H, Piper B, Boscarino J, Kern M, Duboski V, Wright E, Schepman P, Robinson R, Casey E, Beck C, Hall J.** Osteoarthritis in a large integrated health system population: 18-Year retrospective review. American College of Rheumatology (ACR) Convergence 2020 Annual Meeting, Virtual, November 2020.

11. **Graham J**, Novosat T, Sun H, **Piper B**, Boscarino J, **Kern M**, **Duboski V**, **Wright E**, Schepman P, Reiley J, Robinson R, Casey E, Beck C, Hall J. Patterns of osteoarthritis care across severity stages defined by treatment intensity. 2021 Osteoarthritis Research Society International (OARSI) World Congress, Virtual, April-May 2021.
12. **Graybill M**, **Duboski V**, **Wright E**, **Kern M**, Blanchard C, **Webster L**, Dombrowski S, **Ward T**, **Gionfriddo MR**. Medication therapy problems identified through comprehensive medication management by pharmacists in a team-based at home care program. 2021 Health Care Systems Research Network (HCSRN) Conference, Virtual, May 2021.
13. **Graybill M**, **Duboski V**, **Wright E**, **Kern M**, Blanchard C, **Webster L**, **Gionfriddo MR**. Medication therapy problems identified through comprehensive medication management by pharmacists in a team-based at-home care program. Pharmacy Quality Alliance (PQA) 2020 Annual Meeting, Virtual, May 2020.
14. **Hale S**, **Lauver A**, **Le T**. Timeliness of antihypertensive agents for hypertensive crisis during pregnancy. American Society of Healthsystem Pharmacists (ASHP) Midyear Clinical Meeting, Virtual, December 2020.
15. **Hart K**, **Andrick B**. Evaluation of steroid-associated hyperglycemia and diabetes in multiple myeloma. Hematology Oncology Pharmacy Association (HOPA) Annual Meeting, Virtual, April 2021.
16. **Moll D**, **Kotch K**. Evaluation of dexmedetomidine utilization at Geisinger Wyoming Valley Medical Center. American Society of Health-System Pharmacists (ASHP) Midyear Clinical Meeting, Virtual, December 2020.
17. **Myers ZA**, **Brickett LM**, **Slampak-Cindric A**. Characterization of vasopressin use in patients with shock at Geisinger Hospitals. 2020 American Society of Health-System Pharmacists (ASHP) Midyear Clinical Meeting, Virtual, December 2020.
18. **Okubo K**, **Deibert ML**, **Slampak-Cindric A**. Evaluation of Tocilizumab Utilization for 2019 Novel Coronavirus at Acute Care Hospitals. 2020 American Society of Health-System Pharmacists (ASHP) Midyear Clinical Meeting, Virtual, December 2020.
19. **Preston N**. Evaluation of liposomal bupivacaine utilization within Geisinger Wyoming Valley. American Pharmacists Association Mid-Year Conference, Virtual, December 2020.
20. Sauers E, **Hale SF**, **Slampak-Cindric A**. Evaluation of Angiotensin II for Vasodilatory Shock. 2020 American Society of Health-System Pharmacists (ASHP) Midyear Clinical Meeting, Virtual, December 2020.
21. Soltesz B, **Andrick B**, **Farley S**. Chemotherapy-induced peripheral neuropathy in non-Hodgkin's lymphoma patient's receiving vincristine with or without aprepitant/fosaprepitant. Hematology Oncology Pharmacy Association (HOPA) Annual Meeting, Virtual, April 2021.
22. Soltesz B, **Andrick B**, Topolewski C, Yarczower B. Evaluation of outpatient IVIG utilization for acquired hypogammaglobulinemia in patients with hematologic malignancies or stem cell transplant. American Society of Health-System Pharmacist (ASHP) Midyear Clinical Meeting, Virtual, December 2020.
23. Tahir S, Martin J, Adonizio C, **Andrick B**. Incidence of hypophosphatemia with ferric carboxymaltose use: Geisinger Cancer Institute Analysis. Society of Hospital Medicine (SHM) Annual Meeting, Virtual, May 2021.
24. Weiner K, Monteiro J, Southall K, Iverson A, **Graham J**, Simard EP. Comparison of data collected via cardiac device registry versus real-world electronic health records. 36th International Conference on Pharmacoepidemiology (ICPE), Virtual, September 2020.



# Pharmacy

Geisinger

PHARMACY  
8:30 AM - 6:00 PM  
Monday-Friday







Eva Gerhart  
Clinical Pharmacist  
Board of Ice

**Geisinger**  
Eva Gerhart RPh  
Enterprise Pharmacy  
Clinical Pharmacist

**Geisinger**

Clipboard with document containing text and a table. The text is partially obscured but includes phrases like "Medical Unit" and "This medication will be used". The table has several columns and rows, with some cells containing numbers or text.

# Certifications and advanced degrees

## Board certifications

Beyond licensure, pharmacists can earn additional credentials to recognize their achievement through training, knowledge, and skills in different practice areas. The Board of Pharmacy Specialties (BPS) is the largest organization dedicated to the certification of pharmacists in specialty areas of practice. BPS offers certification to pharmacists in thirteen different practice areas and is continually expanding. In addition to BPS, several interdisciplinary organizations offer certification which pharmacists may earn. Examples include Certified Anticoagulation Care Providers (CACP), Board Certified – Advanced Diabetes Management (BC-ADM) and Certified Diabetes Care and Education Specialist (CDCES). Board certification through any organization is a voluntary process and upon initial certification, pharmacists are required to participate in additional continuing education and practice experience to maintain the certification. Below are members of the Geisinger Pharmacy team who have achieved and maintain board certification.

## Board-certified pharmacotherapy specialists (BCPS)

Kelly M. Bolesta	Kimberley H. Limouze
Amy L. Brokenshire	Sara H. Maiers
Michelle L. Budzyn	Andrea D. Mayer
Darlene Chaykosky	Eryn Milius
Cara M. Ciamacco	Jordan R. Moore
Domonique N. Dobson	Kelsey B. Moyer
Alyssa Falkowski	John N. Nahas
Sara L. Gaines	Ivan Puskovic
Kelly S. Guza	Ricky M. Rampulla Jr.
Amber Chelsea Heffelfinger	Jessica M. Roth
Arthur M. Jankowski	Amanda Sharry-Rogers
Danielle A. Karaffa	Sarah A. Siemion
Joan M. Keehan	Brian D. Simpkins
Eric D. Kowalek	Angela A. Slampak-Cindric
Danielle E. Kuhn	Rachel Taylor
Bradley E. Lauver	Constance M. Topolewski
Frederick R. Leri	Keturah Weaver

## Board-certified pediatric pharmacotherapy specialists (BCPPS)

Susan Butler	Michelle A. Ligotski
Shannon B. Draus	Sara H. Maiers
Kelly S. Guza	Kimberly L. Nissen
Sarah F. Hale	Bryan E. Snook
Joan M. Keehan	Leslie Taleroski
Sarah Knauer	

## Board-certified oncology pharmacists (BCOP)

Benjamin J. Andrick	Anupama D. Mathur
Jei Won H. Eckel	Anna K. McDermott
Stephen C. Farley	Rachel Sneidman
Tristan A. Maiers	

## Board-certified nutrition support pharmacists (BCNSP)

Stephen C. Adams	Nermeen Yousef
Mariya Monfette	



## Board-certified infectious disease pharmacist (BCIDP)

Bradley E. Lauver

## Board-certified geriatrics pharmacists (BCGP)

Kimberly Carozzoni

Jessica M. Roth

## Board-certified cardiology pharmacists (BCCP)

Amy L. Brokenshire

Samuel P. Eckel

## Board-certified critical care pharmacists (BCCCP)

Anthony D. Alu

Kayla Kotch

Zachary A. Bowser

Kimberley H. Limouze

Laura M. Brickett

Kristen M. Lopatofsky

Allison K. Cebulko

Lindsey M. Schneider

Darlene Chaykosky

Laurie Sherrick

Kimberly Farnham

Angela A. Slampak-Cindric

Jamie L. Kerestes

## Board-certified ambulatory care pharmacists (BCACP)

Brian W. Bedwick

Ivan Puskovic

Kimberly Carozzoni

Julia Swigart

Catherine M. Haupt

James M. Taleroski

Michael A. Kachmarsky

Theron M. Ward

Michael Kessock

Ariana R. Wendoloski

Daniel S. Longyhore

Krista Wetzel

Amanda M. Popko

## Certified anticoagulation care providers (CACP)

Amy Brokenshire

James Taleroski

Stacey Grassi

## Certificates

### Kathy Heiser

Certified Pharmacy Technician (CPhT), Pharmacy Technician Certification Board

### Betsy Karetsky

Advanced Certified Pharmacy Technician (CPhT-Adv), Pharmacy Technician Certification Board

Certified Compounded Sterile Preparation Technician (CSPT), Pharmacy Technician Certification Board

### Alysha Lopez

Compounded Sterile Preparations Certificate, American Society of Health-System Pharmacists

### Sally Tice

Compounded Sterile Preparations Certificate, American Society of Health-System Pharmacists

### Patti Wascavage

Pharmacy-Based Immunization Delivery Certificate, American Pharmacists Association

Pharmacy Revenue Cycle Management Certificate, American Society of Health-System Pharmacists

## Advanced Degrees

### Michael Evans

Master of Business Administration in Healthcare Management, Western Governors University

### Gerard Greskovic

Master of Business Administration in Healthcare Management, Western Governors University

# Awards and recognitions

## Benjamin Andrick

Top 10 Under 10 Years of Practice Pharmacist Award, Pennsylvania Pharmacist Association

## Laura Brickett

Presidential Citation, Society of Critical Care Medicine

## Michael Gionfriddo

Top 10 Under 10 Years of Practice Pharmacist Award, Pennsylvania Pharmacist Association  
Multiple Chronic Conditions Scholar, Health Care Systems Research Network – Older Americans  
Independence Centers (HCSRN-OAIC) AGING Initiative

## Ryley Uber

M. Kelli Jordan Travel Award, American College of Clinical Pharmacy

## Significant Pharmacy Practice Paper of 2021 Award, HOPA, April 2021

Lee GW, Mathur AD, Andrick BJ, Leese E, Zally D, Gatson NTN. Pharmacist value-added to neuro-oncology subspecialty clinics: A pilot study uncovers opportunities for best practices and optimal time utilization. J Oncol Pharm Pract. 2020 Dec;26(8):1937-1941. DOI: 10.1177/1078155220957738.



# Pharmacy leadership



**Mike Evans**

Vice President  
of Enterprise Pharmacy and  
Chief Pharmacy Officer



**Holly Bones**

System Director  
Contracting and Procurement



**Kelly Guza**

System Director  
Acute Programs



**Dave Klinger**

System Director  
Operations and Compliance



**Eric Wright**

System Director  
Center for Pharmacy Innovation  
and Outcomes



**Seth Gazes**

System Director  
Planning, Strategy and Analysis



**Gerard Greskovic**  
System Director  
Ambulatory Programs



**Daniel Longyhore**  
System Director  
Knowledge Management



**Jamie Miller**  
System Director  
Managed Care Pharmacy



**Robert Granko**  
System Director  
Pharmacy Innovation Alliance

# About Geisinger

One of the nation's most innovative health services organizations, Geisinger serves more than 1 million patients in Pennsylvania. The system includes nine hospital campuses, a health plan with more than half a million members, two research centers and the Geisinger Commonwealth School of Medicine. A physician-led organization, with nearly 24,000 employees and more than 1,600 employed physicians, Geisinger leverages an estimated \$7 billion positive annual impact on the Pennsylvania economy. Repeatedly recognized nationally for integration, quality and service, Geisinger has a long-standing commitment to patient care, medical education, research and community service. For more information, visit [geisinger.org](http://geisinger.org) or connect with us on Facebook, Instagram, LinkedIn and Twitter.







VALENTINE

ADVANCED MEDICINE

VALENTINE



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 1,600 primary and specialty physicians who practice at Geisinger hospitals and non-Geisinger hospitals throughout the region.

**Geisinger Medical Center (GMC)** – Danville, Pa. The largest tertiary/quaternary care teaching hospital in central and northeast Pennsylvania, GMC has earned a reputation for providing leading-edge medicine and treating the most critically ill patients. GMC is licensed for 524 beds, including 91 pediatric beds in the Geisinger Janet Weis Children’s Hospital. GMC maintains the region’s only Level I regional resource trauma center with additional qualifications in pediatrics. GMC offers a comprehensive array of highly specialized medical and surgical services, including neurosciences, cardiovascular services, transplantation, women’s health, pediatrics, orthopaedics and oncology.

Outpatient services, including endoscopy and same-day surgery, are available on GMC’s main campus, as well as at the Outpatient Surgery Center, located at the Geisinger Woodbine Lane campus.

GMC’s Hospital for Advanced Medicine serves as an integrated center for the most critically ill patients. This 308,000-square-foot “hospital within a hospital” houses nine stories of patient-focused space, including acuity adaptable beds that can convert from intensive care to recovery as the patient progresses. The hospital offers state-of-the-art inpatient and physician office facilities with cardiovascular services residing within the building, a 32,000-square-foot surgical suite equipped with sophisticated robotic and interventional medical equipment, and shell space for future growth. This hospital is LEED certified silver (Leadership in Energy and Environmental Design), with environmentally friendly designs, recycled materials used in its construction and increased energy efficiency achieved by maximizing natural window light in patient rooms and offices.

**Geisinger Shamokin Area Community Hospital (GSACH)** – Coal Township, Pa. This hospital merged into Geisinger Medical Center on Jan. 1, 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 1 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 northeast Pennsylvania. Licensed for 272 beds, GWV’s state-of-the-art Critical Care Building houses the only Level II trauma center in Luzerne County. The GWV campus includes the Frank M. and Dorothea Henry Cancer Center, the Richard and Marion Pearsall Heart Hospital (an accredited Chest Pain Center), the Tambur Neonatal Intensive Care Unit, the Geisinger Janet Weis Children’s Unit, a transplant program, the Brain & Spine Tumor Institute 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 ambulatory 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.

**Geisinger Community Medical Center (GCMC)** – Scranton, Pa. GCMC is a leading provider of quality healthcare services in northeast Pennsylvania. Home to Scranton’s only Level II trauma center, GCMC also has an adult inpatient behavioral health unit. It is licensed for 304 beds and features an array of clinical programs including orthopaedic services and a broad range of other specialized surgical and radiologic services.

**Geisinger Bloomsburg Hospital (GBH)** — Bloomsburg, Pa. GBH is licensed for 72 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. Its Emergency Department is ranked in the top 5 percent in the state.

**Geisinger Lewistown Hospital (GLH)** — Lewistown, Pa. GLH is licensed for 133 beds and serves the residents of rural Mifflin, Juniata, Perry, Snyder and Huntingdon counties. It is an open-staff, acute-care community hospital that partners with Primary Health Network FQHC to provide services in the new Primary Health Network facility in the Lewistown area. GLH offers emergency, imaging, endoscopy, orthopaedics 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 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 northeast Pennsylvania, as well as members in New Jersey and Maine. 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.

**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, located in Danville, Pa.; the Susquehanna Valley Imaging Center, located in Lewisburg, Pa.; and the Geisinger Precision Health Center, located in Forty Fort, Pa.







**Geisinger Commonwealth School of Medicine (GCSOM)** —

Scranton, Pa. Established in 2008, GCSOM joined the Geisinger family in January 2017. The school has campuses in Scranton, Wilkes-Barre, Danville and Sayre, Pa., as well as a campus in Atlantic City, N.J. The school is accredited by the Middle States Commission on Higher Education and the Liaison Committee on Medical Education to accept students for Master of Biomedical Sciences and Doctor of Medicine degree programs.

**Geisinger Community Health Services (GCHS)** 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. GCHS 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:

- Geisinger Convenient Care, 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 Medical Management Corporation. It provides comprehensive clinical engineering and computer technical services to providers both 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 addiction. 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
- Wilkes-Barre/Scranton International Airport, Avoca
- University Park Airport, State College
- Williamsport Regional Airport, Montoursville
- Good Will Fire Department, Minersville
- Jake Arner Memorial Airport, Lehighton

Life Flight averages 3,600 patient transports a year.

# Geisinger

Contact Geisinger Enterprise Pharmacy:  
570-271-6192

[geisinger.org/pharmacy](https://www.geisinger.org/pharmacy)