

Pharmacy Report

2021



Ephraim McDowell
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WELCOME FROM THE DIRECTOR OF PHARMACY»»

Joan Haltom, PharmD, FKSHP

Greetings from our Pharmacy Team! This annual report highlights the important contributions made by pharmacy team members to our organization and profession. Ephraim McDowell Health may be a small regional health system but we have big ideas driven by our F.I.R.S.T. values. As System Director of Pharmacy Service for Ephraim McDowell Health, my primary goal is to develop sustainable pharmacy service lines that promote high-quality patient care, outcomes and safety. If it is within our scope of practice as pharmacists to be involved in patient care initiatives or services, then our Ephraim team will be! Our decentralized model of clinical care provides the optimal impact for our providers, clinical staff and patients. Our PGY1 Residency program and community faculty appointments with several colleges of pharmacy promote the lifelong learning commitment of our pharmacist preceptors. Our shared governance model for Clinical Roundtable and Operations has allowed us to maximize the contributions of our whole team. The development of Clinical Achievement Pathways for pharmacists and technicians along with our new level system for advanced practice certified pharmacy technicians has created a very goal oriented team who work to advance their own professional practice, clinical skills, community service and leadership. Our use and adoption of technology helps us efficiently mine and analyze data that improves our ability to treat patients, maximize safety of our patients and be fiscally responsible.

With the COVID-19 pandemic came many challenges to our way of practice and service. When I think of all that we have been through the past two years, the best word I can think of to describe the experience is perseverance: persistence in doing something despite difficulty or delay in achieving success. We knew we had to step it up. We knew we could not do things like we had always done them. We had more patients, less resources and faced personal risk by showing up for work every day. I am so proud of how our team worked together to demonstrate our adaptability, resilience and service every day of this pandemic. In this unprecedented time, we continued to move our practice forward to better serve our patients, communities and profession.

Our CEO, Dan McKay has brought a new emphasis on growth to our organization. Our EMH Pharmacy enterprise

has responded to that challenge with the following new programs:

- New Ambulatory Care Heart failure clinic with Pharmacist provider
- New EMRMC home infusion pharmacy service
- New EMRMC parenteral and enteral service
- Advanced scope of practice for three certified pharmacy technicians as immunizers
- Advanced scope of practice for one certified pharmacy technician (Omnicell technician module)
- New level 3 and 4 advanced practice job descriptions for Outpatient technicians
- Pharmacists as COVID-19 vaccine inventory managers and immunizers at the Ephraim McDowell Regional COVID-19 Vaccine clinic
- More board-certified pharmacist practitioners on staff including 14 Board-certified pharmacotherapy pharmacists (BCPS), 1 Board-Certified Ambulatory Care Pharmacist (BCACP), 1 Board-Certified Infectious Disease pharmacist (BCIDP), 2 Board-Certified Cardiology Pharmacists (BCCP)
- 18 CAP recipients (pharmacists and technicians) and four Advanced Clinical Pharmacists

Every year we are asked by residency candidates what we like best about our jobs here at Ephraim. The answers are pretty consistent from our team:

1. The people we work with
2. The collaborative and supportive culture within the pharmacy
3. The empowerment and level of opportunity provided to do what we do best
4. The variety of clinical practice settings and populations we get to serve

We are a strong team of collaborative clinical contributors and I am very proud of the work we do here at Ephraim McDowell Health!



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MISSION, VISION & VALUES»

Our Mission

Ephraim McDowell Health is committed to helping people live healthier through quality health care, trusting relationships, and providing value to the people we serve.

Our Vision

Ephraim McDowell Health will be recognized as the first choice for care by delivering quality and advancing health care services in Central Kentucky.

Our Values - F.I.R.S.T.

- **F**riendliness: An environment filled with compassion, care and concern
- **I**nnovation: The freedom and challenge to seek and apply new knowledge
- **R**espect: The recognition of each person as a valued, unique individual
- **S**ervice: A commitment to excellence in everything we do
- **T**rust: Adhering to principles that foster honesty, integrity, confidence and safety

Pharmacy Department Mission Statement:

To provide comprehensive quality pharmacy services in an innovative, collaborative practice model to support Ephraim McDowell Health's Mission.

Pharmacy Team Leadership

Joan Haltom, PharmD, FKSHP	System Director of Pharmacy
Kourtney Shewmaker, PharmD, MBA, BCPS	EMRMC Pharmacy Manager
Jaime Kenney, PharmD, BCPS	Fort Logan Pharmacy Manager
Stacey Rider, PharmD	James B. Haggin Pharmacy Manager
Sarah Vickey, PharmD, BCACP	Outpatient Pharmacy Manager
Mary B. Covell, PharmD, MPH, BCPS, BCCP	Clinical Coordinator
Tara Neitzel, PharmD, BCPS	Residency Program Director
Angie Hatter, PharmD, BCPS, BCIDP	Antimicrobial Stewardship Coordinator
Megan Ballard, PharmD, MBA, BCPS	340b Program Coordinator



OVERVIEW OF SERVICES»

- Pharmacy services are provided to all inpatients and outpatients through the Ephraim McDowell Regional Medical Center, Ephraim McDowell Commonwealth Cancer Center, and Ephraim McDowell Fort Logan and James B. Haggin Hospital Pharmacies. The patient populations served range from neonates to geriatrics. Pharmaceutical care is provided to each of our patients by comprehensive medication use assessment intended to optimize drug therapy for specific patient needs and minimize adverse events.
- Pharmacy dashboard outlines FY goals and is informed by the Organization Strategic Plan for the year, in addition to pharmacy department goals and initiative. Performance improvement data is gathered and reported to department as a virtual dashboard on our shared drive as well as physical dashboard on the bulletin board in Central Pharmacy.

Highlights of FY2021 performance improvement dashboard:

- EMRMC Wholesaler orders on WAC <10% drug spend
- EMRMC, FL: NDC med stocked matched med bin label
- Omnicell inventory managed to reduce inventory in cabinets
- Timely intervention for BIOFIRE RDT interventions
- Broad spectrum ABX given at goal after positive sepsis screen
- Patients have pharmacist intervention if >2 glu >250 mg/dl in shift
- Discharge counseling completed on patients with new Rx
- Pharmacy to dose vancomycin AUC at goal range (400-600)
- Minimize Opioid over sedation/respiratory depression (naloxone ADE treatments)
- Patients on remdesivir monitored for acute liver injury
- 340b Contract pharmacy net revenue growth

Dashboard Item	Department Goals	Department Results
Operational Excellence		
Wholesaler Orders on WAC drug spend	<10%	8.1% YTD
NDC med stocked matches med bin label	80%	EMRMC – 88.9% FLH – 88.0%
Safety and Quality		
Timely intervention for BIOFIRE RDT interventions (within 2 hours)	90%	90.6%
Broad Spectrum ABX given at goal after sepsis screen	90%	94.5%
Discharge Counseling Completed on patients with new prescriptions	80%	JBH – 97.5% EMRMC – 17.9%
No Duplicate Orders	90%	JBH – 98.4% EMRMC – 81.3%
Pharmacy to dose vancomycin AUC at goal range (400-600)	55%	EMRMC – 57.4%
CSC: Daily IV room tasks documented in Medkeeper	80%	100%
CSC High risk compounds documented in real time by pharmacist	80%	100%
Minimize opioid oversedation/respiratory depression (naloxone treatments given to patients receiving opioids)	<5%	FLH – 0.3% EMRMC – 0.3%
Patients on remdesivir monitored for acute liver injury	95%	98%





Covid-19: The Mother of Invention

Optimizing the Community Hospital Pharmacy During a Global Pandemic

Summary

Health systems around the world have been impacted by the Covid-19 pandemic, forcing pharmacy leaders to reevaluate clinical services and adapt new solutions to an ever-changing landscape. Many of these solutions, including switching to ready-to-administer premixed solutions, have helped pharmacies overcome immediate Covid-19 challenges while simultaneously accelerating long-term organizational goals.

We evaluated the clinical experience as it relates to the pandemic. This article gives detailed information about initial problems and concerns, decisions that were made to address those challenges, and how those solutions not only helped one rural health system operate effectively but propelled it to reach long-term quality of care objectives.

About the Author

Joan B. Haltom, Pharm.D., FKSHP, is the System Director of Pharmacy at Ephraim McDowell Health in Danville, KY.

As a clinical expert focused on patient-first care, Joan consults evidence-based research to effectively plan and operationalize short-term and long-term goals that improve clinical services. She has been a leader for her health system throughout the Covid-19 pandemic, and has successfully implemented innovative approaches that ensure efficient pharmacy operations under extreme circumstances.

The Ephraim McDowell Health system is a comprehensive, integrated healthcare delivery system consisting of 3 hospitals serving more than 119,000 residents from six counties in central Kentucky.



Background

In the community hospital pharmacy, we're constantly evaluating and identifying peer-reviewed and supported long-term goals to improve our distributive operations and clinical services. The *American Society of Health System Pharmacists' Practice Advancement Initiative (PAI) 2030 (Table 1.)* provides long-term recommendations that are typically implemented slowly and methodically over the course of 5 to 10 years, giving pharmacies the opportunity to review, adapt, refocus, and execute throughout the process.

However, due to the Covid-19 pandemic, pharmacies have been forced to adapt to a new reality and embrace change quickly and efficiently. The innovative organization-focused, practice-focused, and profession-focused approaches our pharmacy implemented in a short-time have already made great progress in meeting PAI 2030 objectives and improving patient quality of care.

As a pharmacy enterprise leader in a small rural health system, my team and I have re-evaluated our operations many times under duress (See Appendix A for Covid-19 Pandemic Questions to overcome). We worked quickly to alter our delivery of care in a way that keeps our department moving forward and meeting the expectations for our service line. In just under one year, we've had to address many issues in several key areas, including:



Workflow concerns: Patient access to medications, patient care and safety during the pandemic, and timeliness of medication delivery



Staffing and workload concerns: Managing additional workload, addressing staffing shortages, preserving personal protective equipment (PPE), and accommodating additional scopes of work



Medication storage concerns: Lack of floor and freezer space for emergency use product, smart pump shortages, and supply chain issues for basic supplies

Table 1. Excerpt from PAI 2030 Recommendations

Organization-focused

A12	Health systems should support innovative models for providing a safe and appropriate level of pharmacy services for small and rural hospitals or other alternative practice settings.
B6	Pharmacy practice leaders should ensure that their workforce has the necessary knowledge and competency to adapt to emerging healthcare needs.
C6	The pharmacy enterprise must have sufficient resources to develop, implement and maintain technology related medication use safety standards.
E4	Pharmacy practice leaders should ensure evidence-based medication use by continually analyzing and reporting use patterns and outcomes.
E5	Health systems should support inter-professional innovation centers designed to pursue breakthroughs in areas such as patient experience, medication use, clinical outcomes, operational efficiency, technology and revenue generation.
E6	Health systems should support the well-being and resiliency of their staffs.
E10	The pharmacy workforce should assess and mitigate risk in medication use systems across all settings.

Practice-focused

B2	Pharmacists should leverage and expand their scope of practice, including prescribing, to optimize patient care.
B3	Pharmacists should participate in and assume key roles on emergency response teams.
D1	Pharmacy technicians should participate in advanced roles in all practice settings to promote efficiency and improve access to patient care.
E2	Pharmacists should assume leadership roles in medication stewardship activities at the local, state and national levels.

Profession-focused

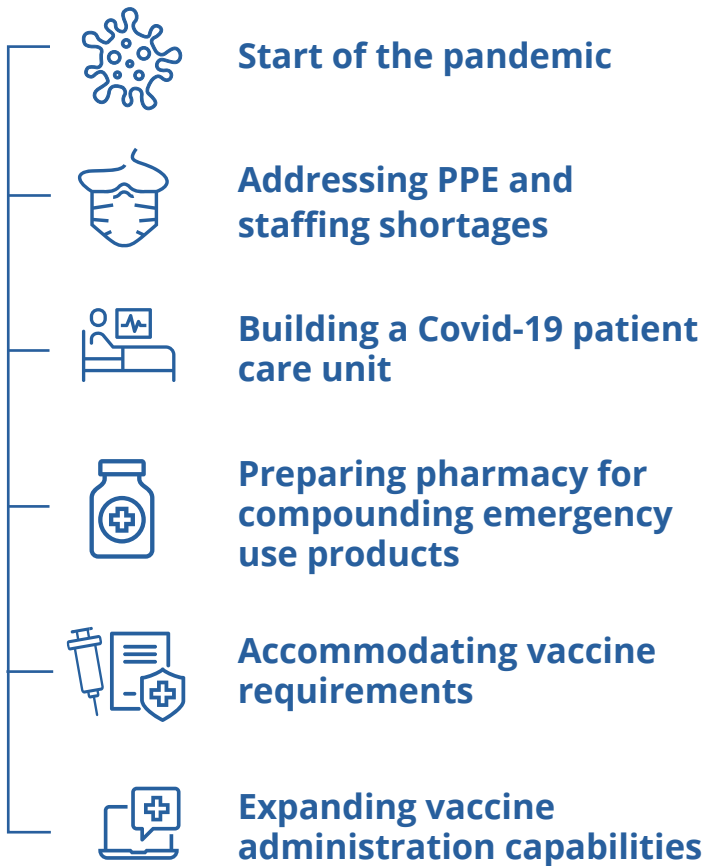
B9	Pharmacists in all care settings should be included as integral members of the healthcare team and share accountability for patient outcomes and population health.
E12	Pharmacists should be leaders in federal and state legislative and regulatory policy development related to improving individual and population health outcomes.



Initial Covid-19 Pharmacy Protocol Solutions

Early on in the pandemic our pharmacy team focused on safe provision of care—for both our associates and our patients—to limit risk and optimize patient outcomes. But as our Covid-19 patient census surged, we had to address a variety of additional challenges along the way:

Covid-19 Protocol Solutions Timeline



PPE and Staffing Shortages

Lack of Personal Protective Equipment (PPE)

When PPE shortages led our organization to restrict the number of health care team associates who could work on patient care units, we responded with a comprehensive strategy:

- Relocated our decentralized clinical pharmacists to central pharmacy workstations
- Managed the distribution of loop masks while fit-testing all pharmacists for N95 masks and issuing supply to wear for appropriate and safe response to patient emergencies
- Conserved gown supply to align with CDC guidance by converting to re-usable, washable lab coats and disposable bunny suits for entire shifts
- Minimized PPE burn rates needed to safely enter patient care rooms for medication reconciliation technicians, pharmacy students, interns, and pharmacists by moving to telephone encounters with the patients



Staffing Shortages

Even with flexible PPE solutions, we were still short-staffed. The reality of pharmacy practice during a pandemic is that you cannot predict the impact that call ins by infected associates, exposures to Covid-19 positive patients or co-workers, and fear all play on attendance.

We were unable to ramp up staffing due to extremely limited “flex/prn” pharmacy associates and a lack of qualified certified technicians in our rural area to recruit, hire, and train quickly.



We took additional steps to help meet organizational objectives while keeping staff safe and healthy:

- Created remote work options for our pharmacists to help support the on site teams
- Re-designed workstations to build in more than 6 feet between workstations and allow staff to spread out in the pharmacy
- Limited the break room capacity and staggered meals to support social distancing guidelines
- Replaced routine meetings—large and small—with virtual meeting room alternatives
- Adopted routine cleaning of all common surfaces, temperature checks to enter the hospital and department, and mask and PPE distribution logs
- Developed a 2-team schedule with minimal overlapping personnel to limit exposure risks throughout the full department
- Instituted a curbside delivery option for patient pick up when main entrances to hospital (and retail pharmacy) remained locked

Building a Covid-19 Patient Care Unit

As the Covid-19 patient hospitalization rate started to spike, our pharmacy team was invited to participate in helping to construct the new Covid-19 patient care units. When the organization began converting and renovating other hospital patient care units to manage the Covid-19 patients, our team had to anticipate the needs of these patients and providers in advance.

With limited time and resources, we worked to design safe drug delivery and handling in these high-risk units by evaluating current procedures and creating an effective implementation strategy.

To meet the increased demand of critical care parenteral medications in these patient care units, first we inventoried the availability of infusion smart pumps and added rental pumps as needed. We then loaded the smart pump profiles and infusion parameters to ensure patient safety and safe drug delivery.

Our implementation strategy focus:

- Expand drug distribution to Covid-19 patient care areas behind zip walls and barriers
- Modify automated dispensing cabinet contents to address the critical acuity of Covid-19 patients
- Tailor “cartless” drug delivery model to avoid unnecessary exposure of pharmacy associates
- Deliver on increased demand for parenteral medications
- Accommodate the increased workload for sterile compounding as 503B suppliers struggled to keep up with the increased demand for sterile products



Preparing the Pharmacy for Compounding Emergency Use Products

A Pharmacy Practice News article “Pandemic Nursing’ Is a Lethal Problem; ISMP Cites ‘Blame and Shame’ Culture” was released November 2020. As noted in the article, one nurse describes working in an under-resourced environment, working under high patient-to-nurse ratios, who may have stashes of medications left in patients’ drawers and closets.’ It would not be uncommon for the overstretched nurse to be asked to mix their own sterile products after hours for new orders or new patients in facilities that do not have 24/7 pharmacy services available. The article included 7 tips to avoid prescription errors (sidebar).

An additional article published by the *Institute of Safe Medication Practice (ISMP) Medication Safety Alert* “ISMP Survey Provides Insights into Preparation and Admixture Practices OUTSIDE the Pharmacy” in the Acute Care Issue from November 2020 highlighted the results of a survey of 444 practitioners who prepare admixtures outside the pharmacy. (See Appendix B for survey highlights).

These results did not make our pharmacy team feel comfortable with accepting workarounds for sterile compounding and we recognized that the best safety plan needs to include multiple strategies to assure safe drug preparation and administration.

The Pharmacy Practice News article included 7 tips to avoid prescription errors:

- Standardize to single concentration of IV high alert medication infusions if possible
- Standardize dose rate (mcg/kg/hr vs mg/hr) for certain IV infusions and make sure these are in smart pump drug libraries/use standardized order sets
- For common infusions, use premixed, commercially available solutions that are visually distinct when possible
- Affix bold auxiliary labels to critical care infusions when non-standard concentrations or high-risk agents (neuromuscular blockers) are dispensed
- Label all IV lines between the smart pump and the source container and close to the access point of the patient’s body: trace the line prior to hanging a new source container or programming the infusion pump
- Establish a process for conducting independent double checks before administering certain critical infusions
- Conduct daily safety huddles with physicians, pharmacists and nurses.



We reexamined many of our sterile compounding process and inventory purchasing decisions and made adjustments:

- Required refresher training on smart pumps and scanning
- Kept our associates informed and aware of new potential risks and inventory issues
- Provided orientation to nurses who float to new units before allowing them to accept new patients
- Standardized the look to our IV products and shared our IV handbook with all staff to provide a resource

for standardized concentrations, dosing charts, and infusion rates from our infusion pump directories

- Standardized sterile compound labels generated from the electronic medical record pharmacy system
- Utilized Medkeeper software for barcode scanning of all ingredients used for sterile compounding
- Implemented remote verification by the pharmacist during the admixture process
- Switched to commercially available ready-to-administer products to help reduce compounding burden and medication errors.



Accommodating Vaccine Requirements

On top of the usual critical care drugs that needed to be compounded we were also facing demands for preparing vaccines within the narrow time frames for administration or waste. With shortened beyond use dates, we were less able to batch the doses and this added to an already overburdened sterile compounding team.

When our organization enrolled for vaccine distribution, we were required to identify what freezer storage capacity we would have for the vaccine. With all hospitals in the country facing the same obstacle, we weren't able to order more storage units because there was limited supply and exaggerated demand. Finding premixed ready-to-administer options that don't require frozen storage helped us free up space in our existing freezer for vaccine storage

Commercially available premixed ready-to-administer products can:



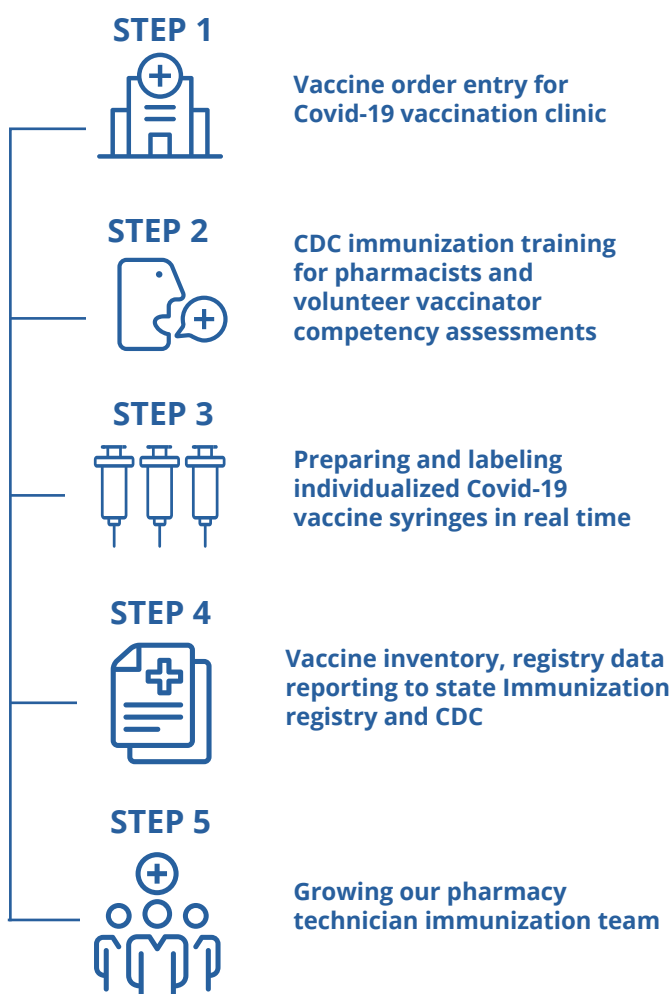
Our team evaluated whether the benefit of time saved by premixed products outweighed the additional cost. We considered the reduced workload for an already over-extended sterile compounding team and the improvements that could be made to the distribution process when staffing resources are maxed out.

Ultimately, we decided that the benefits offered by commercially available premix solutions outweighed the incremental cost in regards to reducing our compounding burden.



Expanding Vaccine Administration Capabilities

With the shipments of the Covid-19 vaccine, our team was asked to design mass vaccination clinics and determine how to best utilize pharmacy associates to assist. We outlined a plan in which our responsibilities expanded to include:



Results

Pharmacy staff in our state and across the country have responded to the call to step up and make a difference in their communities by providing quality life saving treatments and vaccinations during the pandemic. We have had to be adaptable to change, and our pharmacy team has taken a leadership role to add value for the good of the community throughout the pandemic.

Pharmacies around the world have demonstrated the true value and support we bring to providers, nurses, and patients. The creative and innovative improvements made in our practices have helped reinvent departments, align to long-term goals in a short period of time, and created new standards of care that will benefit our organizations for years to come.

At a time of unprecedented demand for efficient workflows we have also made innovative changes to minimize the stress and problems faced by our pharmacy associates every day. In the process, we have accelerated our organizational objectives to reach many long-term goals, in a short period, as outlined by aligning to several PAI 2030 recommendations.



Pharmacy Team Accomplishments During the Covid-19 Pandemic

- Created innovative models to provide safe and appropriate pharmacy services for both Covid-19 and non-Covid-19 patients
- Expanded our scope of practice to assume key roles in patient access and care
- Redesigned patient workflow to support safe precautions that limit exposure across departments and support the well-being and resiliency of our patients, visitors, and staff
- Assessed and mitigated risk of medication errors, created alternative processes to address insufficient resources related to medication admixing and personnel safety standards
- Designed and implemented novel treatment protocols and optimized pharmacy operations with ready-to-administer medications that streamline distributive and clinical services
- Prescribing (emergency orders and refill authorizations via executive order of Governor), anticoagulation clinic remote management
- Leadership roles- design/roll out of Covid-19 vaccine for health care workers and then as a regional vaccination center and bamlanivumab clinic
- Because of the need for safe and effective drug delivery, our pharmacists regularly participated in a Pharmacy Shared Governance Clinical Roundtable. This allowed us to make needed adjustments on the fly and better position ourselves for vaccine rollout. (See Appendix C for a list of Roundtable project Accomplishments)



Appendix A: Questions to Overcome During Covid-19 Pandemic

Workflow concerns	How do we improve public health by expanding patient access to care?
	How do we prevent disruption of medication therapy to our patients during a pandemic when clinic office visit access is limited and patients are not able to refill prescriptions?
	How do we assure medication safety in this age of “pandemic nursing” where nurses are in under-resourced environments, higher patient to nurse ratios, or working in makeshift units?
	How can we assure that our patients get critical components of care timely if we are reduced to manual compounding of common and life-saving drips due to backorders?
	Are there more efficient and productive processes if we are open to consider change?

Staffing/workload concerns	How do we keep all the balls in the air during the pandemic AND do the new work associated with new treatment options?
	How do we manage the additional workload if we have associates across all departments who have called off due to their own or their family member's illness, stress, or lack of child care?
	How do we continue to be a resource and support to our providers and nursing if we are not able to practice on the floors due to limited supply of PPE?
	Are we able to advance pharmacist and pharmacy technician scopes of practice when duty calls?
	How do we support our staff during stressful mandated furlough when elective procedures are paused?
	Are there ready-to-administer (premix) solutions available for other compounded drugs to help free up staff time and ease pharmacy workload during the pandemic?

Floor space/freezer concerns	Are there room temperature ready-to-administer (premix) solutions available that can help free up refrigerator/freezer space?
	How can we improve and stay ahead of supply chain issues for basic supplies like syringes, needles, and sterile fluids for compounding?
	How do we find room in the pharmacy or on the nursing units for storing new refrigerated or frozen vaccine or treatments?
	How do we manage to prepare and label 300-600 Covid-19 vaccination doses per day for our vaccination clinics?

Appendix B: ISMP Survey Provides Insights into Preparation and Admixture Practices OUTSIDE the Pharmacy

- Only 30% of participants agreed or strongly agreed that their organizations required those who prepare sterile admixtures outside the pharmacy to undergo formal training, annual competency assessment and verification.
- Only 64% agree or strongly agreed that labeling process is followed
- Admixtures outside the pharmacy were in less than ideal locations (37% performed at bedside, 28% at nursing station desk and 16% at computer workstation)
- 31% of participants were aware or personally experienced errors when preparing or admixing injectable medications in the past 12 months. The most common errors reported were 1) wrong preparation technique (21%) 2) incorrect diluent or diluent volume (20%) 3) incorrect dose/concentration or volume (19%) 4) no labeling or labeling errors (19%)
- Concerns about accuracy of the final product, interruptions, and distractions were identified as challenges, especially when more than 1 vial or a partial vial was needed when preparing a sterile product. Survey respondents identified the following to be the biggest safety challenges faced in preparing sterile admixtures outside the pharmacy:
 1. Rushing, especially during emergencies in a fast paced, stressful environment
 2. Interruptions that cause lack of focus or require multitasking
 3. Incorrect drug, concentration, dose, diluent or volume (look-alike vials)

Appendix C: 2020 Pharmacy Team Accomplishments via Shared Governance Clinical Roundtable

Roundtable Projects	11
New Order Sets	6
Clinical Order Sets Reviewed	49
MUEs	7
Monographs	9
TOTAL	82



EMRMC: INPATIENT PHARMACY SERVICES»

Kourtney Shewmaker, PharmD, MBA, BCPS Inpatient Pharmacy Manager

The Inpatient Pharmacy at EMRMC is operational 24 hours a day, seven days a week, offering services to patients of all ages including neonatal, pediatric, adolescent, adult and geriatric populations. We provide inpatients and outpatients with oral, topical, otic, ophthalmic and parenteral medications as ordered by authorized practitioners.

Medications are dispensed by pharmacy in unit dose, ready to use packaging. Omnicell automated dispensing cabinets are used to provide more than 95% of the ordered medications in patient care areas. Crash carts and emergency boxes are stocked and restocked by pharmacy Associates.

Medications controlled by the Drug Enforcement Agency are ordered from wholesaler using an electronic CSOS program and secured through a perpetual Controlled Substance Management system in central pharmacy. Controlled substances are distributed to patient care floors via Omnicell or Controlled Substance Administration Records. Pharmacy Associates routinely audit controlled substance transactions to detect and reduce risk of diversion. Controlled substances that expire are returned to the wholesaler through a verified reverse distribution company.

Pharmacy also provides sterile compounding services for low and medium risk parenteral products from a <USP797> fully compliant clean room. Products compounded include both small and large volume parenterals, including Total Parenteral Nutrition, Chemotherapy, Epidurals and PCAs.

Pharmacy dispenses and wastes hazardous medications in compliance with the EPA and <USP 800> standards.

Pharmacy provides stock medications for all ancillary departments, system clinics, and patient care units. Medication storage areas of hospital patient care areas are checked monthly by pharmacy Associates for expiration dates, proper storage and security conditions, with the same service provided on a



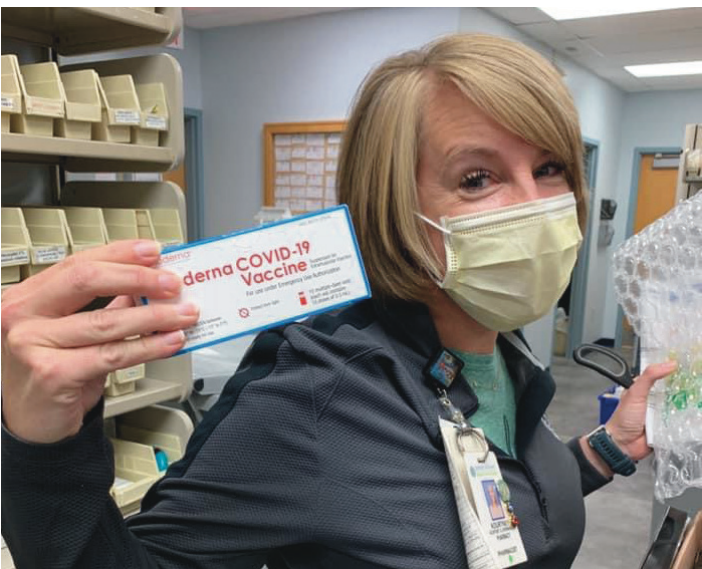
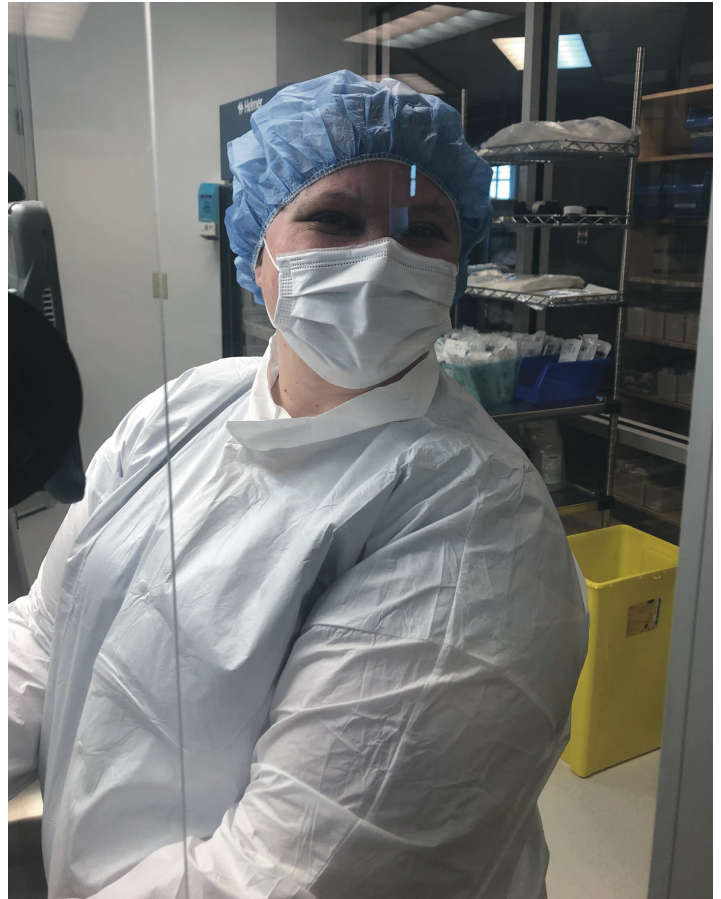
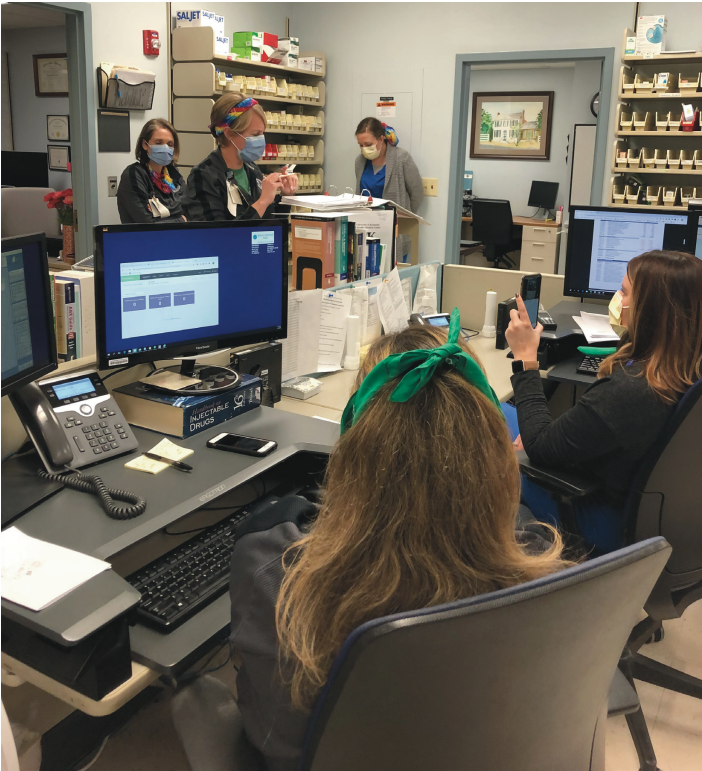
quarterly basis to EMH system clinics. Expired medications are returned to the wholesaler through a certified reverse distribution company.

Pharmacists verify physician medication order entries or enter telephone/written medication orders for patients via our computerized pharmacy system. Pharmacists screen for drug-drug interactions, drug-nutrient interactions, therapeutic duplication, potential medication errors, potential adverse drug reactions, incomplete orders, inappropriate drug selection or dose, ambiguous orders, illegible orders, contraindications to medications prescribed or for noted allergies to medications prescribed during the order-entry process.

Pharmacists and pharmacy technicians participate in the medication reconciliation process during admission, transfer, or discharge. Pharmacists review discharge medication lists once physicians have provided discharge medication orders.

Pharmacists and technicians serve as preceptors for PGY1 Residents, Doctor of Pharmacy and Pharmacy Technician students completing clinical rotations.





2021 PHARMACY CLINICAL SERVICES»

Mary B. Covell, PharmD, MPH, BCPS, BCCP
Pharmacy Clinical Coordinator

EMRMC pharmacy department provides inpatient clinical pharmacy services 7 days a week. Monday through Friday, this includes floor-based pharmacists serving patients in the Intensive Care Unit, Cardiovascular Telemetry Unit, Medical-Surgery floors, and the Emergency Department. Due to the COVID-19 pandemic, one of our medical surgery floors was converted to a COVID-19 unit. In the ICU, pharmacists participate in daily multidisciplinary bedside rounds. The de-centralized pharmacist process of care is modeled from the American College of Clinical Pharmacy Standards of Practice for Clinical Pharmacist.¹

Pharmacists utilize Theradoc Clinical Decision support as well as our electronic medical record, Meditech, to identify issues and document on appropriate interventions. In our generalist model, all pharmacists rotate throughout the hospital's clinical areas which necessitates a consistent approach to clinical care and documentation. To help pharmacists stay up-to-date, a weekly Pharmacy Seminar is held. This hour-long session on Wednesdays allows staff pharmacists, residents, and students to present on current topics and projects. This includes case presentations, journal clubs, guideline updates, monographs, medication use evaluations and other applicable topics. Quarterly, pharmacists participate in 'Skills Seminars', which includes an assessment to ensure comprehension. Skills seminars typically cover new processes, institutional/department goals, or significant updates in clinical practices.

Clinical Roundtable is a shared governance that serves to organize, track, and support the inception and completion of clinical initiatives in the EMRMC department of pharmacy. Roundtable meets on a monthly basis, and all members of the department are encouraged to attend. At each meeting, project status updates are provided for accountability, completed projects are tracked, and new initiatives are introduced. Meetings also serve as an opportunity to discuss projects and get feedback from peers. Clinical Roundtable activities are tracked on a spreadsheet that is accessible and editable by all pharmacists in the department. This method of managing clinical projects has boosted productivity and increased pharmacist participation. This dual benefit has enhanced our department's provision of quality work, as well as increased pharmacist satisfaction. Roundtable leadership rotates on a quarterly basis. Residents seeking leadership opportunities are eligible to serve in this role.

Daily Clinical Pharmacy Services

- Daily patient assessment
- Medication therapy evaluation
- Development and implementation of plans to address drug-related problems
- Interdisciplinary rounding
- Follow-up evaluation and medication monitoring
- Pharmacokinetic monitoring
- Pharmacotherapy consultation (drug selection and dosing)
- Medication counseling
- Anticoagulation management
- Order verification

Examples of Clinical Roundtable Completed Initiatives FY 2021

- DVT prophylaxis dosing in obesity
- COVID-19 Order Set Development and Updates
- HEALing Communities Study
- Outpatient infusion hypersensitivity order set
- Development of alternative to opioids (ALTO) order sets
- Home Infusion service development
- Transition to Bayesian vancomycin dosing
- Malignant Hyperthermia cart and standing order project

Clinical Round Table Productivity FY 2021

Task	Completed
Monographs	13
Medication Use Evaluations	15
Protocol Review	87
New Physician Order Sets	16
Other Projects	34
Total Completed CR Tasks	165

Additionally, the Pharmacy Department hosts an ongoing Continuing Education series that is available for both live and enduring credit. This is ACPE, ACCME (AMA 1 hr) and ANCC jointly accredited. Presentations from FY 2021 included:

1. Controlled Substance Prescribing for Physician Assistants – A Primer. Presented by Mary B. Covell, PharmD, MPH, BCPS, BCCP and Sarah Vickey, PharmD, BCACP
2. Medication Reconciliation: Process Overview and Reference Tool. Presented by Troy Butler, PharmD, PGY1 Pharmacy Resident
3. Portal Hypertension. Presented by Edgar Salas, MD, Gastroenterologist
4. Event Reporting and Patient Safety Optimization. Presented by Mary Keen, PharmD, PGY1 Pharmacy Resident
5. Heart Failure Transition of Care Updates. Presented by Mary B. Covell, PharmD, MPH, BCPS, BCCP and Sarah Vickey, PharmD, BCACP

¹American College of Clinical Pharmacy. Standards of Practice for Clinical Pharmacists. Pharmacotherapy 2014; 34(8): 794-797.



Pharmacy Technicians

Our amazing technicians keep the vital distributive operations of the pharmacy department running smoothly. Technicians on both the inpatient and outpatient side of patient care are eligible to participate in the technician career ladder as well as the Clinical Achievement Pathway. All full-time technicians at EMH are Certified Pharmacy Technicians (CPhT), and non-certified technicians hired must become certified within 6 months.

The position of pharmacy technician has advanced significantly over the past few years. ASHP's Practice Advancement Initiative (PAI 2030) recommends that "Pharmacy technicians should participate in advanced roles in all practice settings to promote efficiency and improve access to patient care." This sets the precedent for advancing the role of the pharmacy technician.

The Pharmacy Technician Certification Board (PTCB) offers multiple credentialing and certificate opportunities for technicians including:

Credentials:

- CPhT – Certified Pharmacy Technician
- CSPT – Certified Compounded Sterile Preparation Technician
- CPhT-Adv – Advanced Certified Pharmacy Technician

Certificates:

- Medication History
- Technician Product Verification
- Hazardous Drug Management
- Billing and Reimbursement
- Controlled Substance Diversion Prevention
- Immunization Administration

At EMH we have expanded the opportunities for our nationally-certified technicians. Advanced practice level III and IV are available for those who are interested. The AP3 (advanced practice level III) must achieve competency in two additional, higher scope of practice functions; AP4 must achieve three. Options at EMH include:

- Inventory Control (INV)
- Medication Reconciliation (MR)
- Chemotherapy Sterile Compounding (CHE)
- Immunizer (IMM)
- Omnicell Specialist Technicians (OST)

Each rung of the professional ladder advances the technician in compensation as well as responsibilities.

Technicians with Advanced Competencies

Matt Acton, CPhT, MR, CHE
Shawn Berry, CPhT, CHE
Suzanna Brumfield, CPhT, CHE, INV
Kim Campbell, CPhT, CHE, INV
Margie Casey, CPhT, CHE, INV
Darlene DeNoma, CPhT, CHE, INV
Ashley Ferguson, CPhT, CHE
Alice Gilliland, CPhT, MR, CHE, INV
Stephanie Gullion, CPhT, INV
Courtney Hines, CPhT, INV
Heather Robertson, CPhT, CHE, INV, MR
Shelly Spain, CPhT, CHE
Danielle Short, CPhT, IMM
MaKayla Steele, CPhT, IMM
Brianna Bottoms, CPhT, OST

Recognizing a GEM



We are proud to spotlight Alice Gilliland as a well-deserved Health System GEM Award recipient (Going the Extra Mile).



CRITICAL ACCESS HOSPITALS»

Fort Logan Hospital

Jaime Kenney, PharmD. BCPS

The Ephraim McDowell Fort Logan Hospital Inpatient Pharmacy offers critical access services to patients of all ages including neonatal, pediatric, adolescent, adult and geriatric populations. The Pharmacy Department is staffed by two full-time Associates (Pharmacy Manager and a Certified Pharmacy Technician), and two part-time Associates (Staff Pharmacist and a Certified Pharmacy Technician). Our hours of operation are Monday through Friday 7 a.m. to 5 p.m. The EMRMC Inpatient Pharmacy provides care for EMFLH patients remotely when our pharmacy is closed.

Inpatient Pharmacy services at FLH include:

- Order verification of medications ordered by authorized practitioners
 - Pharmacists screen for drug-drug interactions, drug-nutrient interactions, therapeutic duplications, potential medication errors, potential adverse drug reactions, incomplete orders, inappropriate drug selection or dose, ambiguous orders, contraindications, and noted allergies to prescribed medications.
- Omnicell automated dispensing cabinets for unit dose distribution in patient care areas
 - Medications designated as controlled by the Drug Enforcement Agency are distributed via Omnicell cabinets to enhance security and to detect and reduce risk of diversion.
- Maintain crash carts
- Complete patient billing, process drug recall notices, and dispose of expired medications
- Monthly check of non-pharmacy medication storage areas of the hospital for appropriate dating, storage, and security
- Preparation and distribution of parenteral medication products utilizing our <USP797> compliant Compounding Aseptic Isolator (CAI)
- Medication Reconciliation on admission, transfer, and discharge
- Daily Patient Profile Review includes assessment of renal function, culture and sensitivity results

with antimicrobial stewardship emphasis, pharmacokinetic dosing

Other Inpatient Services:

Our pharmacists complete timely drug regimen reviews for our swing bed patients to identify potential or real drug therapy problems, improve disease state management, and to ensure that there is a continuity of care during the facility transfer process.

EMFLH is designated as a Level IV Trauma Center and Pharmacists play a key role in medication dosing and distribution while caring for patients with traumatic injuries. Pharmacists respond to codes and are trained in BLS, ACLS, and PALS.

The EMFLH Pharmacy Department is designated as an IPPE program site through the Office of Experiential Education at the University of Kentucky.

Outpatient Pharmacy Services at FLH Include:

- Onsite patient counseling and payment processing for Associates filling prescriptions at EMRMC outpatient pharmacy
- Anticoagulation Clinic (ACC) – warfarin therapy management

Performance Improvement Efforts:

- Medication use evaluations
- Medication Safety through the BENZ Medication Management Committee
- Other committee involvement: Pharmacy Unit Based Council, Pharmacy Clinical Roundtable, Emergency Department/Trauma Committee, Medical Staff Committee, EMH Continual Accreditation Readiness (CAR) Committee, and EMH Safety Committee

Although we are small, we maintain the same standards of excellence in care and customer service that patients will find at all Ephraim McDowell Health facilities.



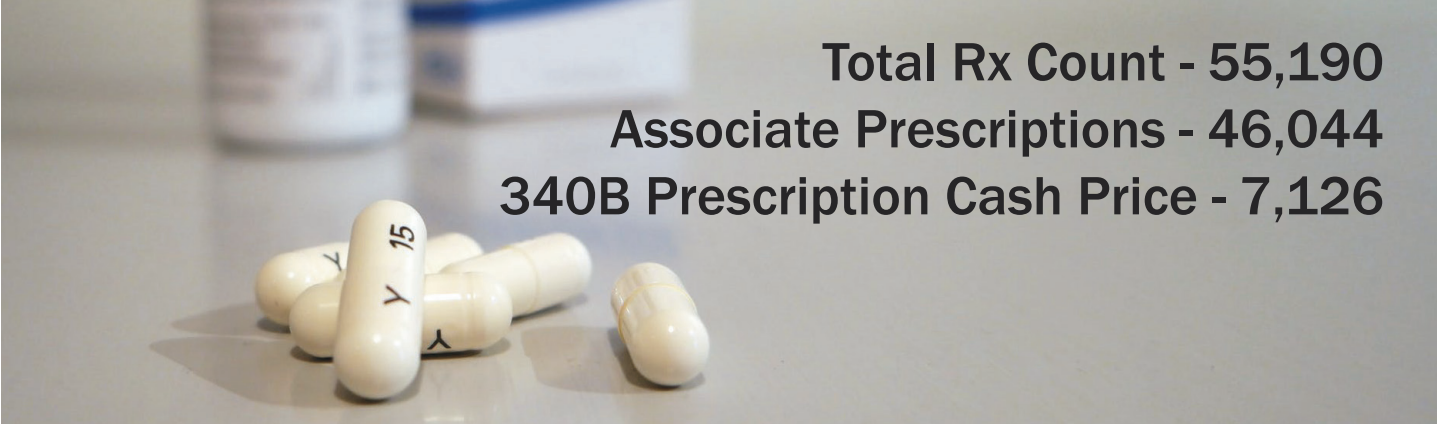
James B. Haggin Hospital

The Ephraim McDowell James B. Haggin Hospital Inpatient Pharmacy offers a wide scope of clinical services to patients of all ages. The JBH pharmacy hours of operation are Monday thru Friday 7 a.m. to 5 p.m. The EMRMC Inpatient Pharmacy provides remote services for JBH patients outside of pharmacy hours of operation.

Inpatient Pharmacy service at JBH include:

- Pharmacokinetic dosing of aminoglycosides and vancomycin and monitoring when consulted
- Daily patient chart reviews in which the following are assessed:
 - Changes in renal function and need for dose adjustments of medications
 - Antibiotic appropriateness, dose and duration of therapy with an intent to de-escalate when indicated based on culture results
 - Intravenous to Oral conversion opportunities per protocol
 - Duplicate as needed or “PRN” medication orders
 - Anticoagulation monitoring and assess the need for mechanical or chemical prophylaxis for patients at a greater risk of developing a clot
- Timely medication order verification while screening for the following:
 - Order completeness
 - Appropriate drug selection and dose
 - Drug-drug interactions
 - Drug-food interactions
 - Therapeutic duplications
 - Potential medication errors
 - Potential adverse drug reactions
 - Potential allergic reactions
- Assists with the Medication Reconciliation process upon admission, transfer and discharge. Pharmacists compare home medications with active orders and follow up with the hospitalist for any medications that are not continued upon admission or transfer. At discharge, the pharmacist completes a final comparison between the reconciled medication orders and the active and home medications to ensure each patient leaves with an accurate and up-to-date medication list.
- Participates in Daily Patient Care Meetings in order to improve communication among all disciplines, which thereby improves patient care and overall satisfaction through collaboration. This is a multidisciplinary meeting that invites Nursing, Providers, Pharmacy, Therapy, Case Management and Dietary to join.
- Responds to Code Blues during pharmacy hours and assists in the Emergency Room upon request by the nurse or provider. Pharmacist assists with drug procurement, mixing, dosing, therapy recommendations, etc. Pharmacists are trained in BLS, ACLS, and PALS. Crash cart medication trays and Rapid Sequence Intubation boxes are stocked and maintained by pharmacy.
- Medication teaching is completed by a pharmacist for each patient discharged to home during JBH pharmacy hours. The pharmacist counsels the patient and/or family member of caregiver on each medication, answers questions, ensures patient understanding of information and confirms that the patient has all or medications at home or prescriptions at their pharmacy for each medication listed on the discharge medication list. This allows for a smoother transition to home following hospitalization.
- Dispenses unit-dosed medications to Omnicell automated dispensing cabinets, patient care areas, ancillary departments, and system clinics.
- Compounds sterile parenteral products in our <USP 797> compliant Compounding Aseptic Isolator (CAI).
- Manages the Anticoagulation Clinic at James B. Haggin Hospital using point-of-care INR monitoring and dose adjustments for patients on warfarin therapy per a Collaborative Care Agreement with the patient’s provider.
- Provides medication counseling and processes payments for Associate prescriptions filled through the EMRMC Outpatient Pharmacy.
- Administers Associate flu vaccinations annually in coordination with Associate Health





Total Rx Count - 55,190
Associate Prescriptions - 46,044
340B Prescription Cash Price - 7,126

AMBULATORY PHARMACY SERVICES»»

Outpatient Pharmacy

Sarah Vickey, PharmD, BCACP
Outpatient Pharmacy Manager

Location:

Ephraim McDowell Regional Medical Center
217 S. Third Street - 1st floor

Hours of Operation:

Monday thru Thursday 9:30 a.m. to 8 p.m., Friday 7 a.m. to 8 p.m., Saturday 9:30 a.m. to 3 p.m.

The Ephraim McDowell Regional Medical Center Outpatient Pharmacy provides prescription filling services for associates, dependents, and discharged patients, as well as the public. The pharmacy provides ambulatory care services in a variety of areas. The pharmacy offers an automatic refill program and courtesy phone call reminders to pick up prescriptions when they are complete.

A courier service is available to deliver medications to Associates at offsite, out-of-county clinics. Prescriptions for Fort Logan and James B. Haggin Associates are filled at Ephraim McDowell Outpatient Pharmacy and sent via courier to those hospital pharmacies for pick-up.

The pharmacy staffs 6.65 FTE's, which consists of pharmacists and technicians. The pharmacists rotate through staffing the outpatient pharmacy and providing ambulatory care services. Our technicians staff the outpatient pharmacy. Two technicians are certified to give immunizations.

Ephraim McDowell Health requires Associates using EMH benefits to fill maintenance medications at Ephraim McDowell Regional Medical Center's Outpatient Pharmacy. For fiscal year 2021, 88.7% of prescriptions for our Associates and dependents on the Medimpact plan were

filled at Ephraim McDowell Outpatient Pharmacy. This helps the organization save on costs to provide medications to covered Associates and dependents. EMH benefits provide a 90-day fill opt-in for prescriptions. With this option, patients pay two copays for three months of medication.

Transition of Care programs:

Concierge service:

Since 2012, the outpatient pharmacy has provided a concierge service for patients wishing to fill their prescriptions before going home. Once prescriptions are filled, outpatient pharmacists deliver the prescriptions to the patient's bedside where they counsel and answer any questions or concerns patients may have regarding their medications. When using this program, the outpatient pharmacy can help the patient with high copays or prior authorization problems. These issues can be resolved before the patient leaves the hospital. The pharmacy works to find manufacturer coupons to assist with high copays when patients are eligible.

Anticoagulation Clinic

At Ephraim McDowell Health Anticoagulation Clinic patients are referred by providers and cared for by pharmacist under collaborative practice agreements. Patients on warfarin are monitored via point of care fingerstick or venous draw. Patients are referred by providers and cared for by pharmacists using collaborative care agreements. Patients are asked a series of questions, warfarin dosage adjustments made per P&T approved protocol, and follow-up appointments are scheduled. Home INR monitoring was implemented during 2018-2019, increasing the number of patients followed by the Anticoagulation Clinic.



Vaccinations Given FY2021

Influenza: 310
Pevnar 13®: 4
Pneumovax 23®: 8
Adacel® (Tdap): 1
Shingrix®: 32
Hepatitis A: 5

To help kick off flu season, the Outpatient Pharmacy offers three drive-thru flu clinics. Associates, dependents, and the public can drive through, roll up their sleeves, and receive a flu shot while sitting in their car.

The Outpatient Pharmacy implemented Kentucky Board of Pharmacy approved protocols. Five pharmacists were trained through an accredited ACPE program to use the Streptococcal Pharyngitis and Influenza Testing protocol in August 2019.

Medication Therapy Management (MTM)

EMH Associates and dependents on EMH health insurance are encouraged to participate in our MTM program. Patients meet with an outpatient pharmacist to review medications for adverse drug effects, cost savings, adherence, or to discuss problems/concerns with their medication.

Online MTM (Humana Outcomes) CMR completion

Outpatient pharmacists are enrolled in online MTM programs through Mirixa and Humana. Patients are assigned to the pharmacy and outpatient pharmacists make calls to complete the MTM appointment. They also complete TIPS or other assigned tasks from the program. This may include compliance counseling, new medication counseling, assessing for missing therapies, or contacting the provider to change to a therapeutic alternative.

Total CMR completed: 243 paid claims

Successful CMR completion: 18

(down due to COVID)

Star Measures Report monitored for Performance Improvement dashboard

The Outpatient Pharmacy is assessed by the Medicare Star Ratings system. Each year, specific star measures are targeted for the PI dashboard. The Outpatient Pharmacy followed adherence to blood pressure and cholesterol medications. Outpatient Pharmacy staff

helped to counsel patients on the importance of adherence and enrolled them in our automatic refill program.

Heart Failure Transitions of Care Clinic

Beginning in December 2020, the Heart Failure Clinic began seeing patients at our Heart and Vascular Institute. Patients are referred to the clinic after discharge from the hospital or by a provider if they are identified as being high risk for admission. At this visit patients are seen by a pharmacist where extensive medication counseling and disease state education is provided. The pharmacist identifies opportunities for pharmacotherapy optimization and collaborates with a nurse practitioner or physician to develop the patient care plan.

Home Infusion Pharmacy

The need for home infusion services continues to grow as many patients require prolonged therapy at discharge, such as antibiotics. In early 2021, EMRMC inpatient pharmacy expanded a new service line with the addition of comprehensive home infusion services, including intravenous medications, enteral products, and medical supplies. Our pharmacy staff is responsible for order entry and dispensing of products that are delivered to each patient's home. EMRMC has partnered with CarepathRX to offer this service to provide full-service back-office and revenue cycle management to our patients and communities in Central Kentucky. We are excited to see growth in this new service line to provide a convenient service for our patients.

The pharmacists in the outpatient pharmacy are certified to dispense Narcan® (naloxone). We were the first pharmacy in Boyle County to dispense Narcan® (naloxone) under a pharmacist driven dispensing protocol.

The pharmacist also educated EMH primary care offices on how and when to use Narcan® and provided clinics with handouts to distribute to patients detailing how Narcan® can be obtained.

We received a \$500 grant from the Heroin Task Force to supply free doses for those who have no insurance or otherwise could not afford Narcan®.



Ephraim McDowell Commonwealth Cancer Center

Michelle Fraley, PharmD, BCPS

Pharmacist-In-Charge, Ephraim McDowell Commonwealth Cancer Center

Chemotherapy Infusion Services

- Sterile compounding
- Maintaining USP 797/800 compliance
- Physician order review and entry
- Implementation of new continuous infusion device
- Facilitate chemotherapy services for patients requiring inpatient admission
- Provide Nursing education for new and review of old processes
- Successful accreditation survey

Evidence-based Chemotherapy Treatment Review

- Clinical Pharmacist review of all intravenous chemotherapy treatment plans

- Development and implementation of more standardized chemotherapy order forms
- Implementation of HOPA/ASCO standardized rounding protocol to minimize waste
- Implementation of NCCN templates as standard protocols

Oral Chemotherapy Adherence

- Development of patient tools to improve medication adherence
- Interdisciplinary patient education
- Incorporation of pharmacy follow-up call

Investigation Services

- Oversee 16 active studies; 8 have deferral to Central IRB and 8 are overseen by local IRB
- Handle receipt of investigation medications
- Maintain storage and disposal of medications



EMH SYSTEM SUPPORT»

Pharmacy Informatics

Amanda S. Burton, PharmD, BCPS
Information Technology Pharmacist

The Information Systems Pharmacist provides automation and database management support for Ephraim McDowell Health, including Ephraim McDowell Regional Medical Center, Ephraim McDowell Fort Logan Hospital, Ephraim McDowell James B. Haggin Hospital, Ephraim McDowell Commonwealth Cancer Center, and Ephraim McDowell Clinics using LSS (21 clinic locations).

The IS pharmacist works with Pharmacy Services and Information Systems to monitor daily operation of pharmacy systems. The pharmacist maintains medication and order set dictionaries to verify proper ordering, charging, and automated clinical decision making. Additionally, the build, validation, and implementation of new pharmacy technologies are managed by the IS pharmacist.

Automation Supported

- Omnicell® automated dispensing cabinets
- Alaris® smart pumps/Guardrails® software
- Sentry Data Systems™ 340B split billing software
- Meditech bedside medication verification
- Midwest Medical Equipment Auto-Print™ medication packager/Pak-EDGE™ software
- Go HC labels barcode software
- Medkeeper® IV Workflow Management

Dictionaries Supported

- Outpatient medication dictionary (Meditech RXM)
 - Monthly formulary maintenance
- Immunizations
 - Inpatient ordering
 - Outpatient clinic procedures
 - Integrated reporting to Kentucky Health Information Exchange (KHIE)
- Meditech order sets
 - Provider – medications
 - Pharmacist

- Guardrails® medication database
- Omnicell® databases
 - New cabinets installed 2019
 - Scheduled reports and restock
 - Items, Kits, and Users maintenance

Additional Responsibilities

- Monthly Omnicell® and Alaris® pump education for nurse orientees
- Pharmacy representative for Meaningful Use Committee
- Daily KASPER reporting
- Medkeeper databases
 - Items and recipe maintenance

Ephraim McDowell Clinics & MedSource

EMRMC Pharmacy provided services to 21 Ephraim McDowell Clinics and to Ephraim McDowell MedSource this year.

Pharmacy Associates provide quarterly clinic inspections to our clinics and MedSource to assure that medications are managed according to state and federal guidelines, Joint Commission standards and Kentucky Board of Pharmacy medical gas licensure. This includes proper storage and control of sample medications and stock medications.

Ephraim McDowell Clinics order medications and vaccines from respective hospital pharmacy for clinic stock. The medications are provided to each clinic via hospital courier on a daily basis.

The EMRMC IS pharmacist provides LSS support for maintenance of the Clinic Meditech chargemaster and order strings that promote electronic prescribing and charting.



Antimicrobial Stewardship Program (ASP)

Angie Hatter, PharmD, BCPS

Antimicrobial Stewardship Coordinator

The ASP was officially established in 2006, although the program had unofficially been in operation since 2003. The mission of this program is to limit antimicrobial use to only what was necessary and evidence-based, in an effort to slow the tide of antimicrobial resistance and prevent adverse events associated with antimicrobial exposure.

EMRMC, FLH, and JBH are all active and engaged in the Ephraim McDowell Health System Antimicrobial Stewardship Program (ASP). These are the measures that are currently in place:

1. One ASP policy and leadership support statement for the entire system.
2. The ASP policy has the language requiring prescribers to specify a clinical indication for each antibiotic and this is mandated in Meditech during CPOE. (system wide)
3. There is a formal process in place for a 48-hour timeout on antimicrobial use and this is documented by the pharmacists in the PCS module. (system wide)
4. The Antimicrobial Management Team (AMT) offers prospective audit with feedback on the restricted antimicrobials as outlined in the ASP policy. The interventions and follow-up discussions are documented in PCS. (system wide)
5. The AMT PI stats are recorded monthly and reported to both the P&T committee and the Infection Control Committee on a quarterly basis. (system wide)
6. There are specific ASP-related pharmacy interventions that are recorded monthly on the ASP dashboard. (System wide).
7. There are evidence-based CPOE orders (i.e. surgical prophylaxis) for physicians to use (EMRMC and FLH) and a booklet available to providers with evidence-based empiric treatment guidelines for common infectious diseases. The booklet is titled, "Empiric Antimicrobial Therapy Guidelines."

8. System-wide orientation for licensed providers on the ASP with distribution of a copy of the most recent antibiogram, the "Empiric Antimicrobial Therapy Guidelines" booklet, and a "Pharmacy Services Overview" pamphlet.
9. Use of the Theradoc data mining software to trend antimicrobial DOT/1000 Days Present (system wide)
10. Antibiotic Usage/Antibiotic Resistance data submissions to NHSN through Theradoc (system wide)
11. Pharmacist(s) review of cultures for patients departed from the emergency department. (EMRMC)
12. Education presentation(s) on current ASP/ID topics annually

EMH ASP future initiatives in the planning stages:

1. Enhancing nursing role in ASP activities.
2. Evaluating antimicrobial use in the EMH ambulatory clinics.

The goals for the Antimicrobial Stewardship Program for FY 2020-2021 are:

- Develop physician education offerings related to current trends and updated treatment guidelines in antimicrobial stewardship and/or infectious disease
- Increase nursing engagement in antimicrobial stewardship
- Review/update surgical antibiotic prophylaxis orders
- Establish goals for Ambulatory Healthcare antimicrobial stewardship
- Establish product attainment and distribution processes for antiviral therapies that became available under FDA Emergency Use Authorization

Indicator	3rd Quarter FY 2019-20	4th Quarter FY 2019-20	1st Quarter FY 2020-21	2nd Quarter FY 2020-21
Number Reviewed	42	38	42	83
Number of Recommendations	27	27	39	79
Accepted Recommendation	27/27 100%	27/27 100%	38/39 97%	76/79
Sputum C/S with Dx of Pneumonia	5/9 55.5%	4/11 36%	6/23 26%	11/48 23%



EMRMC: INPATIENT PHARMACY OPERATIONS

340B PROGRAM»»

**Megan Ballard, PharmD,
MBA, BCPS**
340B Program Coordinator



Ephraim McDowell Health (EMH) is a comprehensive integrated healthcare delivery system that serves more than 119,000 patients residing in six counties in central Kentucky. The rural health system consists of a disproportionate share hospital, two critical access hospitals, a cancer center, and many outpatient general and specialty clinics, which have participated in the 340B Program for the past several years. The 340B program is a vital program that allows our covered entities to provide high-quality care and enhance access to healthcare services and resources to the communities they serve, especially to those vulnerable low-income, uninsured, or geographically isolated patients.

At the core of the health system is Ephraim McDowell Regional Medical Center (EMRMC), which provides a community benefit of approximately \$7 million a year in total charity care or unreimbursed Medicaid care. Additionally, EMRMC consists of 22% and 58.1% of Medicaid and Medicare payers, respectively. As a safety-net hospital provider, it is evident that EMRMC and other parts of the health system depend on the 340B Drug Discount Program savings to support patient and community needs.

In addition to the medical center, EMH's critical access hospitals Fort Logan Hospital (FLH) and James B. Haggin Hospital (JBH) collectively provides a community benefit of approximately \$2 million in total charity care or unreimbursed Medicaid care. FLH's payer mix consists of 45.9% of Medicaid and 27.7% of Medicare as JBH consists of 8.7% of Medicaid and 81.3% Medicare payers. A list of the services and resources provided by 340B savings is listed below.

340B Savings Fund the Following Services/Resources:

- Health education/screening clinics
- Local access to critical care and specialty services including: cardiology, pulmonology, nephrology, and orthopedics
- Oncology screening and treatment programs

- Inpatient and outpatient behavioral health services
- Dementia and drug abuse treatments
- PGY-1 Pharmacy Residency Program
- Physical therapy and nursing clinical training programs
- Nurse and social worker positions for local schools
- Faith based nursing programs
- Tobacco cessation programs
- Cardiac rehabilitation
- Hepatitis A and influenza vaccination clinics
- Weekend walk-in/urgent care clinics
- Specialty services for the elderly
- Vulnerable and frail patients including obstetrics and neonatal care
- Treating neonatal abstinence syndrome newborns
- Dialysis care
- Naloxone dispensations to overdose and at-risk patients
- Spine and pain management clinics
- Migrant worker/free care clinics
- Pediatric dental surgeries

EMH implemented a 340B Program Coordinator to manage 340B inventory and replenishment processes, perform audits, and maintain program compliance in

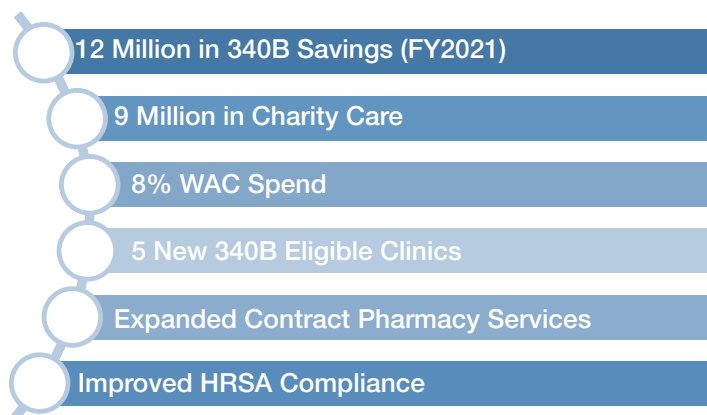


2019 due to the growth of the health system and eligible 340B sites. This position has led to increased financial success, inventory management, improved compliance, and decreased drug costs/WAC spend.

During the fiscal year 2021, the 340B Program had an estimated savings of \$12 million across all three covered entities and associated child sites.

Due to the COVID-19 pandemic, five additional clinics were provided with expedited approval of 340B eligibility due to vital services needed for COVID-19 testing and treatment. These clinics include: Ephraim McDowell Central Kentucky Surgeons, Ephraim McDowell Eye & Vision Center, Danville Family Physicians, Ephraim McDowell Walk-in & Primary Care, and Ephraim McDowell Family & Internal Medicine. Additionally, in 2020 the 340B Program Coordinator worked to implement new resources and services for the program including eRx data matching, referral verification system, uninsured programs, and business intelligence.

With the addition of many new clinics, EMH has contracted with local retail pharmacies in the area including CVS,



Walgreens, Walmart, and Kroger to further enhance 340B savings for patients in all six counties we serve. Our Ephraim McDowell Outpatient Pharmacy also is a vital part of the 340B Program as it provides discounted 340B cash prices for those uninsured or underinsured patients being discharged from any EMH hospital or eligible clinic. It is evident that the 340B Program is a vital resource to fulfill our mission and commitment to help people live healthier through quality healthcare, trusting relationships, and providing value to the people we serve.

System-Wide: Medication Safety

Multidisciplinary medication management and safety teams are led by our pharmacy managers at each of our three hospitals.

The medication management and safety teams (EMRMC= Mercedes, FL= Jaguars and JBH= Benz) meet monthly and focus on compliance with best practices for medication management, Joint Commission medication management standards and medication safety initiatives. Front line staff and clinical managers or Clinical Directors from nursing, clinic office managers or nurses, pharmacy, respiratory therapy, risk management and other disciplines involved in medication management are members.

These teams trace compliance with Joint Commission management standards, observe for practice and documentation in compliance with established policy and procedures, and monitor safety metrics that involve medication use or outcomes. The teams develop and distribute educational newsletter documents (PitStop newsletter), learning modules, inservices and survey preparation FAQs to keep front line staff up-to-date on medication-related best practices, safety goals, policies and Joint Commission standards.

Monthly medication safety huddles on patient care units with front line staff help identify problem areas and concerns for the teams to address.

Medication Safety is a key focus for EMH Pharmacy. In 2020-21 EMH completed numerous projects to advance our use of technology or to help us keep patients safe.

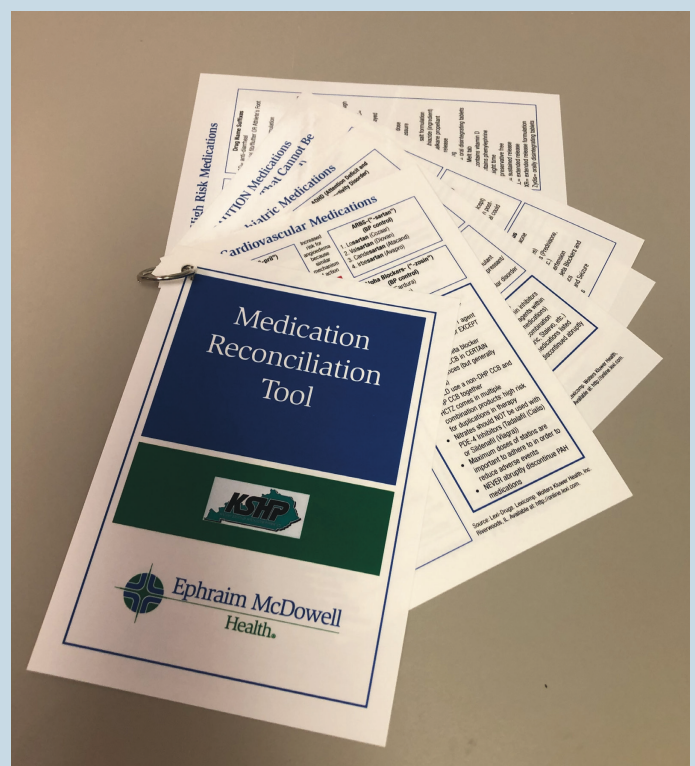
- Conversion to Qstatim for risk event reporting (medication events, ADR, iv line events)
- Tray exchange process for crash cart restocking (EMRMC)
- Upgraded Omnicell automated dispensing cabinets (James B. Haggin Hospital)
- Upgraded Omnicell automated dispensing cabinets (James B. Haggin Hospital)
- Change to Daily controlled substance cycle counts in Omnicells (EMRMC)
- Pediatric dosing calculator (antibiotics)
- Conversion to Bayesian vancomycin dosing software
- Theradoc alert updates and modification of documentation for follow-up process
- Achieved >95% medication barcode scanning rates for EMRMC, FL and JBH



Medication Safety (continued)

- MedSafe (medication disposal receptacle) in EMRMC Outpatient Pharmacy
- Kentucky Statewide Opioid Stewardship metrics and physician specific feedback
- Opioid stewardship naloxone dispensing to ED patients (Healing Communities initiative)
- Participated in Leapfrog survey
- Guardrails smart infusion pump updates quarterly
- Decreased Hypoglycemic event rates
- Enhanced opioid stewardship per KYSOS metrics
- Modification of Delta program to transition of care models with nurse navigator input
- New order string process for home med reporting
- In room med storage lock boxes (EMRMC)
- Updated pain score driven analgesic selection training module
- New and updated COVID treatment and monoclonal antibody infusion clinic protocols
- Sentinel Event Alert #63 optimizing smart infusion pump safety with dose error reduction software (DERS)
- Mock codes for rapid response, pediatric and adult codes, malignant hyperthermia events
- Medkeeper technology for verification of patient specific, batch and high-risk sterile compounds
- Premixed drips and Vanc added to formulary for ADC storage and faster access
- Implementation of electronic prescribing for controlled substances (providers)
- Updating drip order documentation in Meditech
- Updated alcohol withdrawal and detox protocols (RAS and SAS assessments)
- Venofer rule to alert to prevent back-to-back (early) administration
- COVID-19 Vaccine documentation, assessment with KYIR documentation integration
- Severe Allergy reaction documentation update in Meditech
- New anaphylaxis/infusion reaction kits in Omnicells
- Annual look alike-sound alike Associate survey
- Annual high-risk medication Associate survey
- Annual Culture of Safety Associate survey

EMH facilities utilize barcode scanning for medication administration and Alaris Guardrails smart pumps to optimize medication safety during the medication administration process.



Pharmacists and specially-trained certified pharmacy technicians conduct medication reconciliation with patient at admission and discharge to promote safe transitions of care.

Pharmacists review and update evidence-based protocols and order sets annually.

EMH hospitals utilize Omnicell automated dispensing cabinets in inpatient and outpatient patient care areas. High-level screening for dispensing reports is conducted routinely from transactions across our Omnicell cabinets, anesthesia workstations and controlled substance dispensing cabinets to detect and prevent diversion.

Pharmacists perform timeouts for designated high-risk medications preparation and dispensing and use Medkeeper technology to track and remotely verify high-risk admixtures and batch admixture sterile compounding at EMRMC, Fort Logan and Cancer Support clinic.

Risk management provides medication error and adverse event data for review and trending.

Each medication management team participated in intracycle monitoring and mock surveys to assess effectiveness of our medication management systems.



EDUCATION & TRAINING»



Post Graduate Year One Pharmacy Residency - Established 2010

Residency Purpose Statement: PGY1 pharmacy residency programs build on Doctor of Pharmacy (PharmD) education and outcomes to contribute to the development of clinical pharmacists responsible for medication related care of patients with a wide range of conditions, eligible for board certification, and eligible for postgraduate year two (PGY2) pharmacy residency training.

Program Specifics: Residents: 2 per year | Preceptors: 16 | Learning experiences offered: 12 required, 10 elective



a position as a clinical staff pharmacist at T.J. Samson Community Hospital in Glasgow, Kentucky.

Happenings:

In June 2021, Troy Butler, PharmD, and Mary Keen, PharmD, successfully completed our PGY1 pharmacy residency program.

- Troy has accepted



- Mary successfully matched with the University of Kentucky HealthCare PGY2 Emergency Medicine program in Lexington, Kentucky.

- Our program was selected as PGY1 site

for ASHP Visiting Leader with Jannet Carmichael

Each spring, the residency program goes through the ASHP Resident Matching Program (AKA the “Match”). This is an orderly process of having applicants and programs find each other. Similar programs are used in many other health professions.

The Match statistics for 2021-22 year:

- 26 applications submitted in Phorcas
- 16 candidates invited to interview
- Successfully matched two candidates in Phase I of the Match - Aaron Adkisson, PharmD, 2021 graduate of the University of Kentucky College of Pharmacy
- Courtney Sides, PharmD, 2021 graduate of the University of Kentucky College of Pharmacy



At the end of the year, our residents choose two preceptors and two technicians who exemplify the F.I.R.S.T. values of EMH and who were exceptional to work with over the past year.

Student Pharmacists:

Our pharmacy team is dedicated to developing the next generation of pharmacists. We currently have 14 pharmacists that precept pharmacy students. Our precepting pharmacists hosted ~40 student pharmacists this past year.

Our pharmacists have precepted students from the following colleges:

- University of Kentucky College of Pharmacy
- Sullivan University College of Pharmacy and Health Sciences
- Belmont University College of Pharmacy
- Appalachian College of Pharmacy
- Marshall University School of Pharmacy
- University of Charleston School of Pharmacy

Patient care opportunities for our student pharmacists:

- Anticoagulation counseling
- Antimicrobial stewardship
- Clinical review of patients
- Development and review of chemotherapy regimens
- Discharge medication counseling
- Emergency response
- Heart Failure discharge counseling
- Immunization administration
- Medication histories and reconciliation
- Non-hazardous and hazardous sterile compounding
- STEMI discharge counseling

Project opportunities for our student pharmacists:

- Drug monograph development
- Journal clubs
- Medication use evaluations
- Newsletter article

F.I.R.S.T. Preceptor Award winners 2021



Amanda Burton, PharmD, BCPS and Monica Wesley, PharmD

F.I.R.S.T. Technician Award winners 2021



Brianna Bottoms, CPhT, Alice Gilliland, CPhT

- Nursing inservices
- Patient case presentation
- Policy or protocol review/revision

The University of Kentucky College of Pharmacy ResCATs program pairs students with a professional/clinical mentor and provides programming and additional resources to assist PY4 students in refining their curriculum vitae (CV), crafting a personalized and compelling Letter of Intent (LOI), preparing for residency showcases at KSHP and ASHP Midyear, and being prepared for phone/video/onsite interviews. We have had three pharmacists serve as ResCATs mentors to five students over the past two years.





LEADERSHIP & SERVICE»

Our pharmacy team members demonstrate a commitment to lifelong learning and professional involvement. Pharmacists on our team have achieved advanced credentialing through the Board of Pharmacy Specialties including:

13 Board-Certified Pharmacotherapy Specialists (BCPS), 1 Board-Certified Ambulatory Care Pharmacist (BCACP), 1 Board-Certified Infectious Disease Pharmacist (BCIDP) and 2 Board-Certified Cardiology Pharmacists (BCCP).

Additionally, team members have other advanced degrees including: two with Master of Business Administration (MBA) degrees, one with a Master of Public Health (MPH) degree, and one with a Master of Science in Finance (MSF) degree.

Board of Pharmacy Specialty Certified Pharmacists

Megan Ballard, PharmD, MBA, BCPS
 Amanda Burton, PharmD, BCPS
 Mary Covell, PharmD, MPH, BCPS, BCCP
 Stephen Crutcher, PharmD, BCPS
 Angie Hatter, PharmD, BCPS, BCIDP
 Michele Heinz, PharmD, BCPS

Tara Neitzel, PharmD, BCPS
 Heather Ratliff, PharmD, BCPS
 Lois Sebastian, PharmD, BCPS
 Kourtney Shewmaker, PharmD, MBA, BCPS
 Brett Vickey, PharmD, MSF, BCPS, BCCP
 Sarah Vickey, PharmD, BCACP
 Nina Whitehouse, PharmD, BCPS
 Allison Williams, PharmD, BCPS

Pharmacy Accolades

- KSHP Innovative Health-System Pharmacy Practice Award – 2020
- KSHP Innovative Health-System Pharmacy Practice Award – 2017
- KPhA Professional Promotion Award – 2020
- KPhA Innovative Pharmacy Practice Award – Sarah Vickey - 2020

Sutton Spirit Award

The Sutton Spirit Award is peer-nominated monthly. Ron Sutton was a pharmacist who retired from EMRMC in 2010. He epitomized our F.I.R.S.T. values, was genuine in his concern and love for his coworkers and patients,



and was always a positive influence and contributor to our work environment and his EMH team. FY 2021 nominees include:

- Lois Sebastian
- Mark Upton
- Michele Heinz
- Tara Neitzel
- Nina Whitehouse
- Stephen Crutcher
- Megan Ballard
- Amanda Burton

Leadership at EMH

Our pharmacists are active participants on many organization-wide committees. Pharmacists take the lead on the development of evidence-based protocols and process development on these interdisciplinary teams.

Pharmacists can be found as integral team members for:

- Pharmacy and Therapeutics
- Antimicrobial Stewardship
- Opioid Stewardship
- Medication Safety
- Chest Pain Committee
- Stroke Core Team
- Sepsis Committee
- Critical Care Committee
- Emergency Department Committee
- Research Council
- IRB

Outside of our organization, professional involvement is high:

- 92% of our pharmacists are members of state or national pharmacy professional organizations.
- Of those who are members of professional organizations, 40% hold a leadership position within that organization.

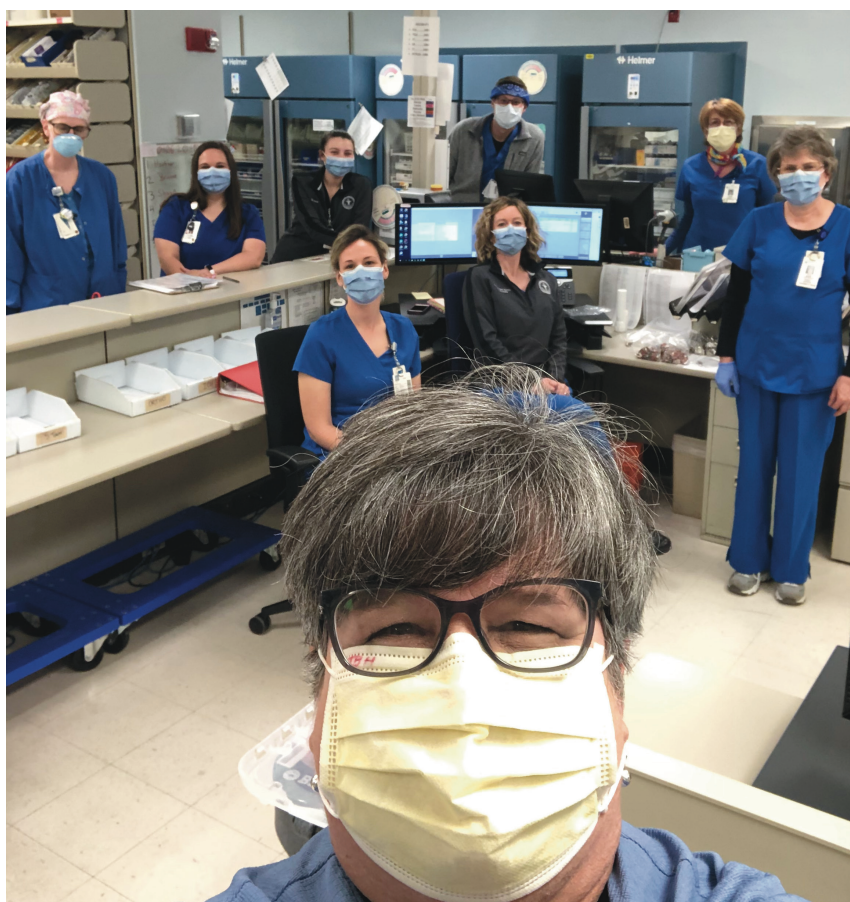
These roles include:

- KSHP Pharmacy Practice Committee
- KSHP Award and Nomination Committee
- KSHP House of Delegate representatives
- KPhA Public Health Committee
- KPhA Professionals Affairs Committee Co-Chair
- 2 Past Presidents of KSHP
- KPhA Health Information Technology Committee Chair

- Guest Surveyor for ASHP residency accreditation
- ASHP Legislative Network
- KY ACC Scientific Committee Member
- ACC CV Team Ky State Liaison
- Past President of Bluegrass Pharmacist Association
- Past Secretary Kentucky Pharmacist Association
- New Practitioner Committee with KPhA
- KPhA/KPERF Reviewer – The Kentucky Pharmacist
- ACCP CardSAP Content Reviewer

Our commitment to the community is also strong:

- United Way Leadership Circle
 - Joan Haltom, Brenda Wilson, Michele Fraley, Karla Meyers, and Kourtney Shewmaker
- Ephraim McDowell Foundation Leadership Level Contributors
 - Joan Haltom, Kourtney Shewmaker
- Community Based Board Involvement
 - Common Good Board Member – Amanda Burton
 - Kentucky Agency for Substance Abuse Policy Board – Brenda Wilson
 - Wilderness Trace Child Development Center Advisory Committee – Mary Covell, Kourtney Shewmaker





Excellence is our only standard

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