



ANNUAL REPORT

Department of Pharmacy

Fiscal year 2013



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Duke Pharmacy
Duke University Hospital

Message from the Chief Pharmacy Officer

Paul Bush



It is my pleasure to present the 2013 Annual Report for the Department of Pharmacy. This annual report highlights the exceptional work that the Duke pharmacists and staff accomplish on a daily basis and the successful initiatives that are transforming the quality of pharmaceutical care for our patients. These exceptional results are detailed in the report under the respective service areas and program categories.

It has been a busy and productive year with many accomplishments. I will highlight several accomplishments but ask that you review the entire report to fully understand all that has been accomplished.

The department supported the successful implementation of Maestro Care (Epic) through completion of design, build and testing, training and activation in conjunction with the Maestro Care Willow and Beacon teams. Success of the launch was the result of tremendous work by essentially all members of the department.

A major initiative this year has been preparation for opening the Duke Medical Pavilion (DMP). Final preparation for opening the DMP Pharmacy and DMP Perioperative Pharmacy was completed. Services, hours of operation and the staffing plan for the pharmacies and Clinical Services was established, inventory levels were determined, and staff were oriented and trained to work in the new facility.

The department's initiative to improve care transitions and handoffs continued by expanding the number of patients that have a medication history completed by a pharmacy staff member and the number of patients that are provided their medications at discharge. To support this initiative the hours of operation for the Children's Hospital Retail Pharmacy were expanded to include weekend hours.

As medication complexity has increased, the need to credential pharmacists that have special training and expertise has become important. To support this need, a Pharmacy Credentialing Committee was formed and that group formalized the credentialing process for DUH pharmacists. Their initial focus has been to support expansion of the number of pharmacists credentialed as Clinical Pharmacist Practitioners (CPP).

Financial management through stewardship continued as the Pharmacy Utilization Management Program (PUMP) activity increased through the support of hospital and medical administration and the involvement of additional pharmacists, physicians and analysts. To compliment this program an Antimicrobial Stewardship program was developed and initiated in conjunction with the Division of Infectious Disease. Documented financial savings achieved through PUMP this fiscal year was \$3.8 million.

All of this work directly supports our mission and vision for pharmacy services at Duke University Hospital. These accomplishments would not be possible without the commitment and personal dedication of the Duke University Hospital pharmacy leadership team and staff members.

I would like to thank each and every member of the staff for their commitment to the profession and dedication to the care of Duke Medicine patients.

Sincerely,

A handwritten signature in black ink that reads "Paul W. Bush". The signature is written in a cursive, flowing style.

Paul W. Bush, PharmD, MBA, FASHP, BCPS
Chief Pharmacy Officer

II. Departmental Overview

Mission

The Mission Statement of the Department of Pharmacy is to work collaboratively with other healthcare professionals to provide optimal pharmaceutical care to all patients, to advance pharmaceutical knowledge through educational and scholarly activities, and to promote positive patient outcomes.

Vision

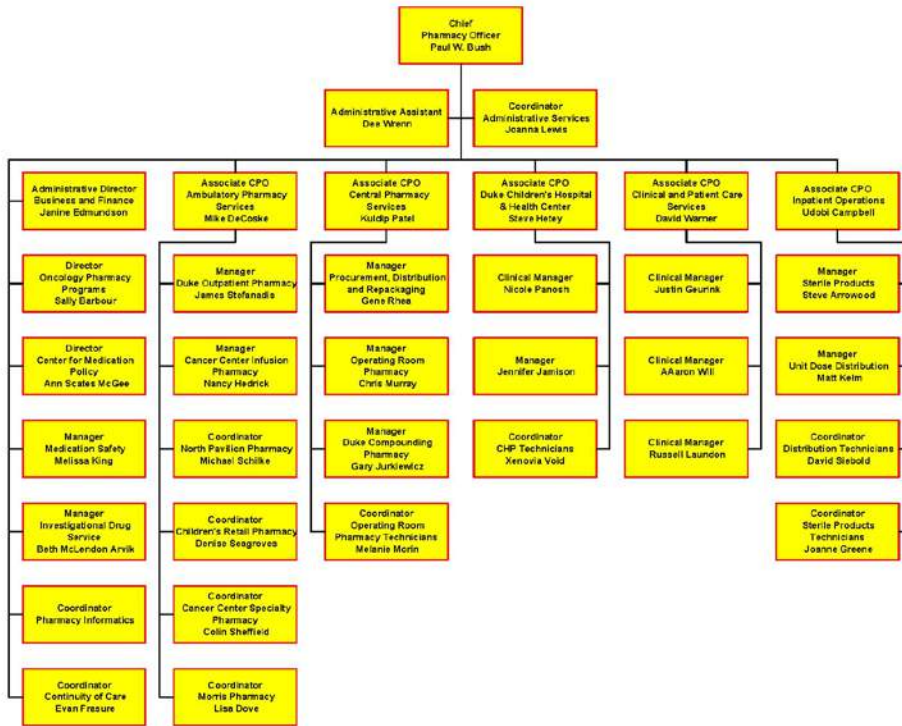
The Department of Pharmacy will provide optimal patient care and improve patient outcomes to meet or exceed customer expectations. The department will be recognized for quality and diversity of services, professional leadership, and educational excellence. We will advance the accessibility of pharmacy services through the innovative use of personnel and technology. Employees will work together to create an exceptional work environment.

Goals


- To improve patient outcomes and provide the highest standards of pharmaceutical care,
- To foster a collaborative approach to medication safety among all disciplines,
- To provide an exceptional work environment that will establish Duke as the pharmacy employer of choice,
- To integrate new technological developments which improve efficiency and safety,
- To promote research to improve patient outcomes and the efficiency of care, and,
- To expand and promote excellence in pharmacy education.



III. Organizational Chart



IV. Balanced Score Card

 Duke University Hospital/Pharmacy (2013-12 Jun) Balanced Scorecard - All					
Measure	Actual	Target	YTD Actual	YTD Target	Freq
QUALITY AND PATIENT SAFETY					
ADEs Attributable To Pharmacy	1.0	1.8	14.0	22.0	M
ADM Override Rate (ICU)	8.54%	13.00%	10.20%	13.00%	M
ADM Override Rate (Non-ICU)	0.92%	2.00%	0.89%	2.00%	M
Influenza Vaccination & Exemption Rate		85.6%	85.9%	85.6%	M
Medication Reconciliation Completed Upon Inpatient Admission	96.70%	95.00%	97.10%	95.00%	M
Non-Formulary Usage	0.60%	0.50%	0.57%	0.50%	M
Verification/Turnaround Time for STAT medications	82.00%	90.00%	82.80%	90.00%	M
CUSTOMER					
HCAHPS: Communication About Medicines ^{CSF}	67.5%	62.0%	64.8%	62.0%	M
Percent Omnicell Stock-outs	0.37%	0.55%	0.37%	0.55%	M
Retail Pharmacy Customer Satisfaction	87.50%	75.00%	78.90%	75.00%	Q
FINANCE AND GROWTH					
Direct Contribution Margin for Outpatient Pharmacy	\$1,533,657	\$912,402	\$8,904,615	\$10,948,820	M
Flex Expense Percent Variance ^{CSF}	19.31%	0.00%	7.60%	0.00%	M
Flex FTE Percent Variance ^{CSF}	-0.52%	0.00%	-1.24%	0.00%	M
Pharmaceutical Utilization Management Program (PUMP) Program Savings	\$1,398,251	\$500,000	\$3,697,398	\$500,000	Q
WORK CULTURE					
Percent Terminations Annualized: Overall ^{CSF}	11.05%	13.40%	11.05%	13.40%	M
Work Culture Power Item Score	3.78	4.04	3.78	4.04	YTD
Lighting Scheme: Blue = Exceeds Expectations; Green = Fully Achieves; Yellow = Between prior year's avg performance (or similar) and Fully Achieves; Red = Below prior year's avg performance, budget, or similar					
DUHS Performance Services, 1/20/2014 12:28:47 PM					



V. Financial Performance Summary

Financial Report

	Inpatient Pharmacy Group		Outpatient Pharmacy Group		Retail Pharmacy Group		Administration / Education / IDS / Procurement	
<u>Gross Revenue *</u>	FY13 YTD FP12		FY13 YTD FP12		FY13 YTD FP12		FY13 YTD FP12	
Plan	\$	461,034,645	\$	563,813,418	\$	26,778,438	\$	1,145,158
Actual	\$	455,517,551	\$	566,320,824	\$	24,820,968	\$	1,371,888
Variance	\$	(5,517,094)	\$	2,507,407	\$	(1,957,470)	\$	226,730
Percent Variance		-1.20%		0.44%		-7.31%		19.80%
<u>Expense</u>								
Original Plan	\$	78,050,147	\$	71,975,755	\$	15,800,325	\$	6,198,870
Variance from Orig	\$	(8,575,632)	\$	1,910,459	\$	(35,151)	\$	(926,091)
% Variance from Orig		-10.99%		2.65%		-0.22%		-14.94%
Actual	\$	86,625,780	\$	70,065,296	\$	15,835,475	\$	7,124,961
Flex	\$	86,972,327	\$	84,460,897	\$	16,245,728	\$	6,198,806
Variance from Flex	\$	346,547	\$	14,395,600	\$	410,253	\$	(926,155)
% Variance from Flex		0.40%		17.04%		2.53%		-14.94%
<u>Direct Contribution Margin</u>								
Target					\$	10,978,113		
Actual					\$	8,985,492		
Overall variance from flex expense budget								7.34%
*Gross revenue is not adjusted for contractual write-offs								

Capital Projects

Hospital-based Clinics Omnicell Cabinets

WBS Project ID: 309513015

FY Total Actual Amount: \$232,594

Health Robotics I.V. Soft

WBS Project ID: 309513009

FY Total Actual Amount: \$35,000

PK Compounding Software

WBS Project ID: 309513033

FY Total Actual Amount: \$7,140

Pharmaceutical Utilization Management Program FY 2013 Tracking

PROJECT	OUTCOME	TEAM	ANNUAL PROJECTED SAVINGS	IMPLEMENTATION DATE	DOCUMENTED SAVINGS THROUGH MARCH 2013
Prograf (New Contract)	Cost minimization	Pharmacy - Procurement	\$236,920	November-11	\$228,920
Zipreza (olanzapine) Brand to generic conversion	Cost avoidance	Pharmacy - Procurement	\$72,485	November-11	\$53,235
Octreotide (New Contract)	Cost minimization	Pharmacy - Procurement	\$222,324	December-11	\$167,951
Propofol Price Optimization (Credits received)	Cost minimization	Pharmacy - Procurement	\$28,028	December-11	\$18,259
Lipitor (atorvastatin) Brand to generic conversion	Cost avoidance	Pharmacy - Procurement	\$102,525	December-11	\$77,734
Novartis Transplant Contract	Cost avoidance	Pharmacy - Procurement	\$331,575	December-11	\$216,760
Keppra (levetiracetam) Brand to generic conversion	Cost avoidance	Pharmacy - Procurement	\$36,341	December-11	\$45,000
Aranesp (Darbepoetin Alfa) (New Contract Price)	Cost avoidance	Pharmacy - Procurement	\$4,293	March-12	\$4,293
340B Allocation of IVIG (Morris Pharmacy)	Cost avoidance	Pharmacy - Procurement	\$122,000	April-12	\$6,220
Recothrom (Thrombin) New contract	Cost avoidance	Pharmacy - Procurement	\$195,254	April-12	\$184,806
Plavix (clopidogrel) Brand to generic conversion	Cost avoidance	Pharmacy - Procurement	\$83,892	August-12	\$69,854
Lovenox (enoxaparin) Brand to generic conversion	Cost avoidance	Pharmacy - Procurement	\$320,881	August-12	\$273,164
Docetaxel (Sandoz 1st time price concession)	Cost avoidance	Pharmacy - Procurement	\$66,389	August-12	\$66,389
Singulair (montelukast) Brand to generic conversion	Cost avoidance	Pharmacy - Procurement	\$23,252	September-12	\$17,489
Eloxatin (oxaliplatin) Brand to generic conversion	Cost avoidance	Pharmacy - Procurement	\$127,063	September-12	\$113,750
Return of brand name Eloxatin (Credits)	Cost avoidance	Oncology - Procurement	\$31,482	September-12	\$31,482
Eloxatin (oxaliplatin) PHS savings	Cost avoidance	Pharmacy - Procurement	\$1,727,123	September-12	\$1,082,894
Mycamine (micafungin) New contract price	Cost avoidance	Pharmacy - Procurement	\$61,770	October-12	\$38,716
Nimblex (Cisraccarium) Brand to generic conversion	Cost avoidance	Pharmacy - Procurement	\$62,427	October-12	\$34,529
Ziprasidone (Geodon) Brand to generic conversion	Cost avoidance	Pharmacy - Procurement	\$3,516	October-12	\$1,544
Revatio (Sildenafil) Brand to generic conversion	Cost avoidance	Pharmacy - Procurement	\$167,541	December-12	\$19,423
Brand Optimization (See attached Sheet 1)	Cost avoidance	Pharmacy - Procurement	\$200,000	January-13	\$119,729
New Cardinal Contract	Cost avoidance	Pharmacy - Procurement		January-13	N/A
Generic Imipenem/Cilastatin (More cost effective generic)	Cost avoidance	Pharmacy - Procurement	\$10,000	March-13	\$6,441
Zometa (Zoledronic Acid) Brand to generic conversion	Cost avoidance	Pharmacy - Procurement	\$80,000	March-13	\$50,157
Total Procurement			\$4,227,081		\$2,950,739
PROJECT	OUTCOME	TEAM	ANNUAL PROJECTED SAVINGS	IMPLEMENTATION DATE	DOCUMENTED SAVINGS THROUGH June 2013
Conversion of Lantus vials to unit-dose	Cost minimization	Inpatient Operations	\$256,032	October-11	\$315,716
Recycling of select sterile preparations	Cost minimization	Inpatient Operations	\$40,000	November-11	\$85,520
Administration of Melphalan in Outpatient Clinic	Cost avoidance	Oncology - Procurement	\$75,000	July-12	\$97,565
Ropivacaine vial to pre-mixed syringes	Cost minimization	Periop PUMP	\$47,520	July-12	\$27,634
I.V. Station Robot (Conversion to in-house production)	Cost minimization	Inpatient Operations	\$274,200	September-12	\$135,661
IVIG ABV and dose rounding	Drug Utilization	All	\$335,000	December-12	\$91,320
Oral IVIG Guidelines for Use in Pediatric BMT patients	Drug Utilization	Children's	\$35,000	January-13	\$92,322
Enoxaparin Adult Dose Rounding Protocol	Drug Utilization/Waste Minimization	CPCS	\$10,000	May-13	N/A
Piperacillin/Tazobactam Extended Infusion Protocol	Drug Utilization	ASET	\$100,000	May-13	N/A
Health System Insulin Formulary Standardization	Cost minimization	Pharmacy - Procurement		Fiscal Year 2014	
Argatroban Waste Reduction	Waste Minimization	Inpatient Operations		Fiscal Year 2014	
Nicardipine Waste Reduction	Waste Minimization	Children's Services		Fiscal Year 2014	
Total Cost Avoidance			\$1,172,852		\$845,738
			\$5,399,933		\$3,804,477



VI. Overview of Pharmacy Services: Scope and Accomplishments

Duke University Hospital (DUH) is an academic learning center and serves as the flagship for Duke University Health System. A tertiary and quaternary care hospital, the 943-bed DUH is consistently rated as one of the top hospitals in the United States. It offers comprehensive diagnostic and therapeutic facilities, including: a regional Level 1 emergency trauma center; a major surgery suite containing 31 operating rooms; an endosurgery center; the Ambulatory Surgery Center with nine operating rooms; an Eye Center with five operating rooms; and an extensive diagnostic and interventional radiology area. The facility also functions as a research hospital where innovations in medicine are consistently achieved and implemented. DUH is a teaching hospital for students of medicine, pharmacy, nursing, and the allied health sciences. The Department of Pharmacy (DOP) at DUH provides a broad range of advanced pharmacy services. The mission of the Duke Department of Pharmacy is to care for patients by assuming responsibility for the medication use process, and facilitating safe and effective use of medications.

To achieve this mission, the DOP employs multiple pharmacy practice models. These include:

- (1) Decentralized clinical practitioners;
- (2) Specialized pharmacy services operating from discrete areas (e.g. Ambulatory pharmacies, Infusion pharmacies, Operating Room pharmacies, Investigational Drug Services, Production and Packaging and Sterile Products);
- (3) Targeted patient care services (e.g. pain management, nutrition support, anticoagulation, transplantation, pharmacokinetic dosing consults); and
- (4) Program-based services (e.g., performance improvement, medication safety, medication stewardship, antimicrobial stewardship, drug information and support to medical staff committees including the DUHS Pharmacy and Medication Management, DUH Pharmacy and Therapeutics, Infection Control, Ethics, Maestro Care and IRB).

Specific services and accomplishments in each Division within the DOP are described on the following pages.



Duke Pharmacy
Duke University Hospital

Ambulatory Pharmacy Services

Michael A. DeCoske



Overview of services

The following represent the major Ambulatory Pharmacy presence at Duke University Hospital and the primary patient populations served within each area:

- CHC Retail Pharmacy
 - CHC patients
 - Duke employees
 - Discharge patients
- Duke Cancer Center Specialty Pharmacy
 - Duke Cancer Center patients
 - Transplant patients
 - Duke employees
 - Patient Assistance Program
 - Patient prescription enrollment for Duke Hospital Based Clinics
 - IV Drug Replacement for Duke Infusion Center patients
- Duke Cancer Center Infusion Pharmacy
 - Oncology Treatment Center
 - Oncology Clinics
 - Radiation Oncology
- Duke Outpatient Retail Pharmacy (OPD)
 - Duke Hospital Based Clinic patients
 - Duke employees
 - Discharged patients
 - Duke University Students
- Morris Pharmacy
 - Non-Oncology Infusion Center
 - Duke Hospital Based Clinics
- North Pavilion Pharmacy
 - Ambulatory Surgery Center
 - Outpatient Bone Marrow Transplant
- Clinic Pharmacists
 - Oncology Clinics
 - Breast, Brain Tumor, HOA, GU, Sarcoma, BMT, Thoracic, GI
 - Oncology Treatment Center
 - Duke Outpatient Clinic
 - Duke Family Medicine Clinic
 - Anticoagulation Clinic
 - Infectious Disease Clinic
 - Thoracic Transplant Clinic

Mission

- Provide excellent clinical patient care in accord with accepted best practices
- Maintain fiscal responsibility over medication use
- Maintain compliance with all pertinent regulatory requirements
- Expand services in response to society's changing health care needs and the shift towards ambulatory care

Goals

- To foster an environment for responsible medication use
- To develop a business model for self-sustaining clinical pharmacy services within Hospital Based Clinics, specifically in high acuity areas such as primary care, transplant, and oncology
- To ensure continuity of care as patients transition from inpatient to outpatient and to strengthen the collaboration between inpatient and outpatient pharmacy services
- To optimize the use of technology and automation to support pharmacy services
- To support pharmacy practice and clinical research, residency training and student clerkships
- To serve as the preferred retail pharmacy for all Duke University Hospital patients and employees
- To positively contribute to the direct contribution margin for Duke University Hospital
- To ensure that pharmacists will be available, visible, and serve as the primary resource for all medication related issues across Duke University Hospital Outpatient Areas

Locations and Hours of Operation

- CHC Retail Pharmacy: 8:30 AM - 8:00 PM M-F; 9:00 AM - 1:00 PM Saturday
- Duke Cancer Center Specialty Pharmacy: 8:30 AM - 6:00 PM M-F
- Duke Cancer Center Infusion Pharmacy: 7:30 AM - 6:30 PM M-F
- Duke Outpatient Retail Pharmacy (OPD): 8:30 AM - 6:00 PM M-F
- Morris Pharmacy: 7:30 AM - 5:00 PM M-F
- North Pavilion Pharmacy: 6:30 AM - 5:00 PM M-F; 7:00 AM – 11:00 AM Sat & Sun

Major Accomplishments

- **Amazing** teamwork and support for Maestro Care implementation
- Targeted service enhancement to improve retail pharmacy access for patients discharged from Duke Hospital
- Extended hours in CHC Retail Pharmacy to better meet patient needs
- Expansion of Omnicell cabinets in Duke Hospital Based Clinics
- Implementation of weekend services to support Adult Bone Marrow Transplant at North Pavilion
- Patient Assistance Program integration into Duke Cancer Center Specialty Pharmacy
- Targeted growth in patient assistance program enrollment
- Expanded specialty pharmacy services to transplant and oncology patients
- Department-wide hazardous drug policy review and update
- Inaugural Ambulatory Pharmacist Quarterly Meeting
- Implementation of call-back program in the Oncology Treatment Center for patients receiving highly emetogenic chemotherapy regimens
- Expanded and enhanced clinic pharmacy services in Duke Cancer Center
- Implemented new pharmacy services focusing on transitions of care at Duke Outpatient Clinic
- Implemented a new pharmacy service model in the Duke Infectious Disease Clinic

Team Members



Central Pharmacy Services

Kuldip R. Patel



Overview of services

Central Pharmacy Services is composed of three separate operating departments inclusive of the Duke Compounding Pharmacy, Perioperative Pharmacy Services, and Pharmacy Procurement, Repackaging, and Distribution. The Duke Compounding Pharmacy prepares Compounded Sterile Preparations (CSPs) in compliance with the United States Pharmacopeia – National Formulary compounding standards. Furthermore, Duke Compounding Pharmacy also supports the organizational mission in supporting patient safety by preparing medications in the most ready to use medication packages when possible. The Duke Compounding Pharmacy also supports the research mission of DUH by supporting any specialized pharmaceutical needs. Perioperative Pharmacy serves the pre-, intra-, and postoperative patients by providing highly specialized clinical and technical pharmacy services to enhance surgery outcomes. They support this goal by

collaborating with surgeons, anesthesiologists, nurse anesthetists, nurses, and other ancillary staff to deliver patient centered care by utilizing medications in a safe and cost effective manner. Pharmacy Procurement, Repackaging, and Distribution services provide logistical support by purchasing and distributing medications to DUH and DUHS Pharmacies and Clinics. The department uses highly innovative inventory management systems and high-speed solid and liquid packaging technology to organize and manage the supply chain efficiently.

Our Team

The Central Pharmacy Services team is made up of highly experienced, skilled and committed managers, pharmacists, technicians, accounting clerks, and material resource technicians who work collaboratively with internal and external customers to meet the needs of patients at Duke Hospital. Staff members actively support the department's mission by participating in clinical quality and process improvement efforts, promoting and fostering a positive work culture, and making the best use of medications to produce positive patient and customer experiences.



Availability and Location

The Duke Compounding Pharmacy operates 6:00 AM – 3:00 PM (M-F). Designated pharmacists and technicians are available for afterhours emergency support for patient care needs. The pharmacy is located in Duke South, room 0010, Davison Building.

The Perioperative Pharmacy services operate two shifts (6:00 am – 9:30 pm) via the decentralized pharmacy satellite located on the 3rd Floor in the Duke North platform. The Eye Center Perioperative Pharmacy services are available 6:00 AM – 3:15 PM (M-F). Designated support is available for afterhours emergency support via the Duke North Pavilion Perioperative Pharmacy.

The Pharmacy Storeroom (procurement) is open 24 hours and staffed from 5:00 AM – 11:30 PM (M-F) and 6:30 AM – 3:00 PM (Weekends).

Major Accomplishments

- Successful implementation of Maestro Care system within Perioperative Pharmacy Services.
- Expansion of high speed oral solid and liquid unit dose packaging to include oral narcotic liquids (going from unit dosing two line items in September 2012 to 26 line items in September 2013)
- Installation of additional security monitoring cameras in the Pharmacy Procurement department
- Implemented CPS recognition committee to standardize recognition program
- Successful recertification of 340B program by the Health Resource and Services Administration (HRSA)
- Continued the CPS Quarterly Update for the entire team, with invited hospital and health system senior leaders as guest speakers who provide the opening remarks
- Expanded access of the Critical Point[®] web-based, interactive, compounding sterile preparations training program to all DUH Pharmacy personnel
- Approval of capital request for expansion of Omnicell[®] AWS in the Duke North OR platform.
- Implemented PK Software, The Compounder Lab. (An industry leading software program for documenting and maintaining formulations, compounding records, quality assurance data, and inventory management)
- Optimized purchasing of generic and contracted products in addition to implementation of PUMP initiatives resulting in savings greater than \$1,200,000
- Successful recruitment and on-boarding of new pharmacists and technicians in Perioperative Services and the Duke Compounding Pharmacy.
- Consistent and systematic management of critical medication shortages (support provided by Duke Compounding Pharmacy, Pharmacy Procurement, and the Perioperative Pharmacy Services)
- Duke Compounding Pharmacy systematically consolidated and reorganized multiple storage areas to a central location to improve inventory control and efficiency.

Awards and Recognition

Wendy Rycek, PharmD, BCPS – Duke Medicine Pavilion All-Star Award

Melanie Morin, CPhT - Duke Medicine Pavilion All-Star Award

Amy Branson, CPhT- Duke Medicine Pavilion All-Star Award

Clinical and Patient Care Services

David Warner



Overview of services

The Clinical and Patient Care Services Division (CPCS) comprises all adult inpatient medical and surgical areas and their related subspecialties. Pharmacy practice models employed within CPCS include the integrated practice model for all adult patient care areas, specialized population-based services (e.g. nutrition support, anticoagulation, transplantation), geography-based specialized services for all intensive care units and oncology units, and order-review and processing in the Medication Management Center on evenings, overnights, weekends, and holidays. Clinical pharmacists participate in daily patient care rounds for many medical and surgical services, and all pharmacists maintain

competency to recognize and manage the pharmacotherapy needs of adult and geriatric patients. Clinical pharmacists also participate actively on unit-based, department, hospital-wide, and health-system committees involving quality improvement, informatics, medication policy, and medication safety, to name a few. A comprehensive listing of committees and participants follows later in this report.

Our Team

The CPCS team is made up of well trained, highly-committed pharmacists who work collaboratively with internal and external customers to meet medication needs of adult patients at Duke Hospital. Most staff members have greater than 5 years of experience at Duke and many are cross-trained to work in their specialty area as well as other areas across the division. Further, many pharmacists have completed one or two residency programs, and are board certified in their practice area. Some staff members hold full-time or adjunct faculty appointments at the University of North Carolina Eshelman School of Pharmacy and/or the Campbell University College of Pharmacy and Health Sciences. CPCS staff members also actively support the department's mission through ongoing participation in financial, quality and process improvement efforts, resident education, and research activities. Many CPCS staff members are members of, and some hold leadership roles in, state and national pharmacy organizations. Others have made contributions to the profession through publications and presentations and local, state, and national journals and professional meetings.





Availability:

Pharmacists provide services through the specialist and integrated practice model during the day shift, Monday through Friday, in patient care areas, and through order review/verification and clinical service delivery in the Medication Management Center during the weekday evenings, weekends, holidays, and all overnights.

Major Accomplishments

- Opened the Medication Management Center
- Recruited and hired a new manager for the Medication Management Center
- Began implementation of the 2014 Pharmacy Transformation Plan
- Named practice leaders for transplantation and pharmacy nutrition services
- Realigned CPCS staff members according to service lines and Clinical Pharmacy Advisory Groups after the resignation of the oncology clinical manager
- Integrated (former Inpatient Operations) overnight clinical pharmacists into CPCS staff
- Recruited and hired eight new pharmacists (two of whom completed Duke residencies in July 2013): lung transplant, surgery, medicine, and cardiology services
- Completed multi-disciplinary development of chemotherapy order templates for most commonly used and most complex adult inpatient chemotherapy regimens for the EPIC Maestro Care computer system
- Participated in order set review across 74 content areas in preparation for EPIC Maestro Care implementation
- Identified super-users for EPIC Maestro Care training and trained all staff for implementation
- Contributed to successful EPIC Maestro Care medication order cutover and implementation
- Clinical Pharmacy Advisory Council (CPAC) group projects and activities have improved systems and enhanced patient care services
 - Front-line pharmacists worked with nursing leaders to maintain significant decreases in ICU Omnicell override rates
 - Frontline pharmacists revised IV protocols for electrolyte supplement ordering, dispensing, and documentation in collaboration with Critical Care Standards Committee and nursing leaders
 - Front-line pharmacists authored new policies and procedures for pharmacist ordering of laboratory tests and glycemic management for post-operative cardiac surgery patients
 - Front-line pharmacists and a clinical manager developed and implemented a new budget-neutral weekend transplant clinical pharmacist practice model
 - Front-line pharmacists and a clinical manager collaborated with nursing leaders and other pharmacy divisions to develop processes for chemotherapy pre-medication ordering and preparation to enhance patient safety and quality

- Practice-group journal clubs and topic discussions offered regularly to pharmacists, residents, and students
- Front-line staff members guided the revision, publication, and distribution of the Pharmacy Pocket Guide to CPCS and other pharmacy department pharmacists
- Fifteen new residents and staff members became board-certified and one staff member re-certified by examination
- Participated in visits from other organizations: four residency programs visits and one visit for practice model analysis
- Successfully developed and offered the Spring Symposium to more than 60 pharmacists and pharmacy technicians from the Triangle area
- Provided support to the profession through the following:
 - Book chapters – 1
 - Articles in professional journals – 8
 - Platform presentations and Clinical Pearls in professional forums – 5
 - Posters at professional meetings (excluding ASHP Midyear Clinical Meeting) – 3 (including national winner for best resident and fellow poster)
 - Journal Club for professional organization - 1
- Three preceptors recognized as Preceptor of the Year: Campbell University College of Pharmacy and Health Sciences; University of North Carolina Eshelman School of Pharmacy; and, Duke University Hospital Pharmacy Residency Programs.
- Successfully honored first-year commitment to the University of North Carolina Eshelman School of Pharmacy by increasing annual student clerkship month offerings from 120 to 200
- Front-line staff participated in the 8th Annual Patient Safety and Quality Conference
- Front-line staff participated in Clinical Pearls Noon Conference for staff
- Developed and implemented plan to better or fully cross-train some pharmacists in similar practice areas across CPCS
- Hosted “Kick*It for Children’s Cancer” kickball charity fundraiser, raising more than \$3000
- One residency program director served as a practitioner surveyor for two oncology residency surveys in support of the ASHP residency accreditation survey process
- Two staff members awarded “Service Award Champions”
- Received the Duke Hospital Strength, Hope, and Caring Award (in collaboration with the Women’s and Children’s Division) for extraordinary teamwork during the cutover medication order entry process prior to EPIC Maestro Care go-live in June

Inpatient Operations

Udobi Campbell



Overview of services

The Department of Pharmacy Inpatient Operations Division provides an array of services which support care of patients in both the inpatient and outpatient arenas. These services include:

- Sterile preparation and distribution of both hazardous and non-hazardous medications in a USP 797-compliant environment

- Unit Dose medication distribution utilizing a hybrid model which involves the use of patient care unit-based automated dispensing cabinets (ADC), robotic unit dose preparation, and first dose dispensing
- Comprehensive ADC management
- Controlled substance management
- Code cart procurement, assembly, distribution and maintenance
- Night shift medication preparation, verification and distribution

Our Team

The Inpatient Operations team is made up of well trained, highly-committed pharmacists and technicians, who work collaboratively with internal and external customers to meet the needs of patients at Duke Hospital. Many of the staff members have greater than 5 years of experience at Duke and are cross-trained to work across the division. Staff members actively support the department's mission through ongoing participation in quality and process improvement efforts, resident and student education, as well as, research activities.



Availability

Services that are provided by the Inpatient Operations Division are available 24 hours a day, 7 days a week.

Location

Duke University Hospital, zero level, room 0415

Methods of Drug Delivery

Our goal is to have the medication available at the patient care unit before the care nurse needs it for a patient. To meet this goal, we use different mechanisms to transfer medications from central pharmacy to the patient care unit. The most common methods, however, involve the use of highly motivated pharmacy technicians, who make routine

deliveries, and STAT technicians who expeditiously deliver urgent and emergent medications. The pneumatic tube system is another means by which medications are delivered to the patient care unit.

Use of technology to enhance safety and operational efficiency

Several technology systems and software are utilized daily by staff members to accomplish the division tasks. Some of these key systems include:

- The unit dose dispensing robot, which is extensively used in the process of daily cart-fill of unit dose medications, fills approximately 4000 doses of medications. Medications intended to be dispensed by the robot are repackaged and bar-coded.
- Automated compounding devices primarily used to support parenteral nutritional admixtures, eliminating the need for multiple manipulations.
- Barcode scanning solution which complements the work of both the technician and the pharmacist by providing added verification that drug selection is accurate.
- Automated dispensing cabinets which provide secure storage of medications while supporting timely availability of unit dose medications to the nurse following verification by a pharmacist.
- Controlled substance software used for tracking movement of scheduled medications and report generation for monitoring and quality assurance.
- Targeted barcode verification of specific high alert medication prior to dispensing or loading into an automated dispensing cabinet
- The i.v.STATION robot ensures accurate preparation of sterile products. Currently utilized for batch preparations which are not patient specific.
- Carousel technology is used for drug storage and dispensing.

Major Accomplishments

- Preparation for opening of the Duke Medicine Pavilion (DMP) inpatient pharmacy
- Installation of the carousel technology in DMP
- Deployment of automated dispensing cabinet to the new DMP tower
- Implementation of the Dispense Prep & Dispense Check systems
- Recruitment of pharmacists and technicians to support DMP expansion

Women's and Children's Hospital and Health Center Steve Hetey



Overview of services

The Department of Pharmacy, Women's and Children's Hospital (~240 licensed beds) provides clinical and distributive services which support care of pediatric patients, obstetrics-gynecology, and 10 adult internal medicine patients in the inpatient setting. Distributive services are supported on the inpatient side by the 5th floor pediatric satellite pharmacy. The McGovern-Davison Children's Health Center ambulatory pediatric pharmacy services are supported by an infusion center pharmacy located on the 4th floor of the health center.

Inpatient pharmacy services

Practice models within the pediatrics division are both integrated as well as specialized. Clinical pharmacists participate in daily patient care rounds to develop individual

pharmacotherapy plans, provide medication and dosage recommendations/adjustments, pharmacokinetic evaluation and dosing, parenteral nutrition management, code blue and rapid response participation, education, research and publication. Specialized practice areas include pediatric bone marrow transplant (16 beds), pediatric intensive care (16 beds), pediatric cardiac intensive care (13 beds), and neonatal intensive care (60 beds) units. General pediatric pharmacists participate in rounds daily on 3 general pediatric services, infectious diseases, hematology-oncology, cardiology, neurology, gastroenterology, solid organ transplant and allergy/immunology. The 5th floor pediatric satellite pharmacy supports the medication needs of these patient populations in collaboration with the Inpatient Operations Division.

Ambulatory pharmacy services

The Children's Health Center Pharmacy is a sterile compounding facility located on the 4th floor of the Children's Health Center building. Both low and medium risk doses of hazardous and non-hazardous compounded sterile preparations are provided to ambulatory pediatric patients. Clinical pharmacists, in collaboration with providers, monitor appropriateness of drug, dosage, frequency, and adherence to protocols. Additionally, clinical pharmacists and technicians support investigational drug use.

Our Team

The pediatrics team is comprised of well-trained, highly committed pharmacists and technicians who collaborate with medical and nursing staffs and colleagues to optimize medication use among a high-risk, vulnerable patient population. Many staff members are tenured and cross-trained to function and support multiple sub-specialty practice areas. A number of pharmacists have completed one or two residencies and/or fellowships. Although board certification in pediatrics is not currently offered, a number (10) of pharmacists sat for and passed the BCPS examination. Staff members actively support the department's mission through ongoing participation in quality and process improvement efforts, resident and student education, as well as, research activities.





Availability

Women’s and children’s inpatient pharmacy services are provided 24 hours per day, 7 days per week through the clinical and distributive staff and satellite pharmacy. The pediatrics division collaborates with Inpatient Operations to provide comprehensive services. The Children’s Health Center Ambulatory Pharmacy operates 8:00 AM to 5:00 PM, Monday through Friday. Weekend coverage is provided through inpatient services.

Major Accomplishments

- Increase in number of unit-of-use products to patients
- Defined sole responsibility for clinical and distributive services on 7700
- CHC clean room project completed and reopened November 2012
- CHC descriptor and telephone number changed to eliminate misdirected calls
- Completed CHC Clinic floor stock optimization project
- Enhanced service via every 2 hour drug delivery
- Completed Phase I of VDH Omnicell inventory optimization project
- Implemented pediatric chemotherapy policy limiting timeframe for chemotherapy orders
- Standardized dose rounding for pediatric orders
- Implemented weekend workflow pilot



Overview of services:

The Center for Medication Policy (CMP) is a team within the Department of Pharmacy that collects, organizes, analyzes, and disseminates information on medication use. The CMP integrates its activities with the clinical, safety, informatics, administrative, and drug distribution systems of the Department to optimize drug therapy for patients.

Functions of the CMP include:

- Answer patient specific and general inquiries regarding all aspects of medication use.
- Provide accurate, timely, unbiased evidence based drug information in support of rational medication therapy and policy.
- Provide support to the Pharmacy & Medication Management Committee and Pharmacy & Therapeutics Committee and the respective subcommittees (Formulary Evaluation Teams, Formulary & Informatics Subcommittee, Medication Safety Subcommittee).
- Participate in formulary management activities.
- Support the dissemination of drug information and medication policy updates via the Center for Medication Policy webpage and electronic newsletters.
- Participate and support the conduct of medication use evaluations (MUEs).
- Monitor and assist with the implementation of drug shortage action plans.
- Track and develop medication specific Risk Evaluation and Mitigation Strategies (REMS) programs.
- Review and track departmental drug information reference subscriptions.
- Provide a learning environment in which pharmacy students and residents can acquire or enhance skills necessary to research and respond to medication related queries and review and develop formulary related policies.
- Provide a learning environment for the drug information resident to acquire and develop skills integral to the practice of hospital based drug information.

Our Team:

The CMP team is made up of well trained, highly-committed pharmacists who work collaboratively with those in the Department and throughout DUHS to help in the review and development of processes that help meet the medication needs of patients. All team members have completed one or two residency training programs. All support the department's mission through ongoing participation in quality and process improvement efforts, resident education, and research activities. Team members are members of state and national pharmacy organizations. The team makes contributions to the profession through internal and external publications and presentations.



Availability:

The CMP is staffed Monday through Friday from 8 AM to 5 PM. After hours consultations are provided by an on-call system (pager 919-970-8110). Non-emergency requests may be left on voicemail (919-684-5125).

References:

The CMP maintains an up-to-date core library of medical, pharmacology, and pharmacy practice texts and electronic references. Drug information references are evaluated as needed for suitability and need for purchase or renewal. Journals and textbooks may be "signed out" for use outside of the CMP. A drug-name based filing system is used to store reprints, product literature and correspondence from manufacturers and other data that may be useful in providing a drug information response or project support.

Major Accomplishments:

- In 2013, the CMP supported the review of 17 medications, 4 class reviews, 13 MUEs, 5 REMS policies, 6 therapeutic interchange programs, and 13 medication use guidelines via the hospital and health system P&T Committee processes.
- Continue to lead formulary review through a health system process.
- Maintain an up to date Center for Medication Policy website that provides current medication formulary and policy information. This website is accessible across DUHS.
- Supported the implementation of Maestro Care, with input toward the development of order sets and building of medications supported with accurate formulary policies.
- Supported the 9 Formulary Evaluation Teams (FET) to meet the desired health system goals as outlined in the FET charter.
- Supported the drug shortage policy by participating in the development and implementation of drug shortage action plans.
- Collaborated with pharmacists and technicians from IT, operations, procurement and business finance to devise processes for implementing formulary changes and policy updates into IT systems in a timely manner.
- Monitor non-formulary medication use and make suggestions for change to reduce overall utilization.
- Develop and implement therapeutic interchange programs as a way to help streamline the use of non-formulary medications.

Investigational Drug Services

Beth McLendon-Arvik

Overview of services:

The Department of Pharmacy Investigational Drug Services supports clinical research involving study drugs for Duke Investigators and supports safety and care for subjects in both the inpatient and outpatient care areas. The Investigational Drug Services integrates its activities with the clinical, safety, informatics, administrative, and drug distribution systems of the Department to optimize study drug therapy for patients.



These services include:

- Integrity of blinding
- Regulatory compliance

- Prevention of errors involving study drugs
- Dispensing of investigational products in a timely manner
- Contribution to study design and data integrity
- Randomization and study drug accountability
- Aseptic preparation in a USP 797-compliant environment and distribution of both hazardous and non-hazardous study drugs
- Procurement of drugs and supplies for studies as needed
- Preparation of Drug Data Sheets for study drugs
- Inservices and education for inpatient studies
- Collaboration with DUH pharmacists to prepare and dispense study drugs as appropriate for patient care
- Education of Pharmacy students and residents regarding the research process and evaluation of literature

Our Team

Study drugs are dispensed from three primary areas, the Investigational Drug Service (IDS), the Investigational Chemotherapy Service (ICS) and the Infectious Diseases Research Pharmacy (IDRP). The Investigational Drug Service teams are made up of well trained, highly-competent and committed pharmacists, clinical trial specialists, a clinical research coordinator, a technician and an accounting clerk II. These members work collaboratively with internal and external customers to meet the needs of study coordinators, investigators, and subjects throughout the Duke Health System. Most of the staff members have greater than 15 years of experience at Duke and have worked with research for at least 6 years. IDS, ICS, and IDRP Team members actively support the department's mission through IRB membership, Clinical Research Unit membership, participation in quality and process improvement efforts, resident and student education, as well as, research activities.



Availability and Location

The Investigational Drug Services are staffed Monday through Friday from 8 AM to 4:30 PM. Arrangements are made to ensure study success for subjects needing study drugs outside of these hours. A team member from all services is on-call 24/7. (IDS on-call pager 970-8392; ICS and IDRP: individual team members via paging web). Non-emergent requests may be left on voicemail (IDS: 684-3543; ICS: 668-0657; IDRP: 681-1788). The IDS is located on the basement level of Duke Clinic at 0101b, Yellow Zone. The ICS is located within the Cancer Center Infusion Pharmacy on the fourth floor, room 4N33, of Duke Cancer Center. The IDRP is located within the infectious disease clinic, 1K room 1346.

Major Accomplishments

- Maestro Care:

- Creation of study drug builds for all IRB approved studies (>600) that contained study drugs for Maestro Care go-live
- Full implementation of all study drug order builds in Maestro Care for all 3 Investigational Service areas to allow all study drugs to be ordered either ad hoc or via validated order set
- Ongoing collaboration with DOCR, IRB and study teams for validation of study drug order sets/protocols and study drug build
- To date, validation of over 65 order sets/protocols containing study drugs.
- Education of study coordinators and investigators regarding study drug order entry options for Maestro Care
- Completed the primary clinical pharmacist review for 41 protocols for Beacon builds
- The IDS teams collectively had:
 - 109 new studies initiated
 - 96 studies closed out
 - 1,486 patients enrolled
 - 42 audits
 - 102 site initiation visits and pre-site selection visits
 - 669 interim monitoring visits
 - 9,863 study drug dispenses
- IRB Coverage: with the help of department of pharmacy pharmacist, 82/91 IRB meetings were covered by a pharmacist.

Medication Safety

Melissa King



Overview of Services

Three pharmacists and one full-time and one part-time data manager comprise the dedicated and experienced staff in the Medication Safety division. Services provided include:

- Management, investigation, and scoring of medication-related events reported via the Safety Reporting System (SRS)
- Administration of peer review process for medication-related SRS events
- Generation of monthly and quarterly reports which permit ongoing monitoring, trending, and analysis of medication related safety issues
- Preparation of adhoc and custom reports to support the safety efforts at local, clinical service unit, institution, and health system levels.
- Facilitation of discussions around trends or specific medication related events which lead to actions aimed at addressing system failures and associated root causes.
- Biweekly distribution of the Institute for Safe Medication Practices Newsletter.
- Development of formal and informal safety data presentations tailored to audiences across the health system.
- Consultations regarding specific safety issues, new products, and label changes.
- Education and promotion of safe medication practices.

Availability

The Medication Safety Office is staffed weekdays 7 AM to 5 PM. Services are covered by pager at all times.

Major Accomplishments

- Reviewed, investigated, and analyzed 5675 medication-related SRSs in FY13.
- Reviewed of all anticoagulation-related adverse effects identified in medical records by ICD9 E9342 and SRS.
- Maintained an active and engaging Medication Safety Committee
- Continued to lead and participate on multiple CSU level safety committees
- Encouraged and recognized pharmacy participation in SRS reporting, resulting in ~22%% increase in the volume of voluntary reports submitted by 199 individuals in FY13, as compared to 198 in FY12 and 182 in FY11. 96.7% of pharmacy reporters identified themselves by name rather than reporting anonymously. This is an increase from 94.4% at the last assessment.
- Promoted “near miss” reporting which included use of the terminology “Good Catch” in medication safety conclusions and the sharing of these “Good Catch” stories at pharmacy staff meetings which has increased overall “Good Catch” reporting from 34% in FY11 to 36.8% in FY12 and to 38.2% in FY13.
- Provided quarterly feedback on pharmacy peer reviewer participation in SRS program. Performance improved from 43 to 61% of reviewers routinely submitting reviews within 30-60 days of the report being issued.
- Achieved 97.6% peer review agreement with medication safety analysis (FY13).
- Generated over 76 adhoc reports for quality improvement and medication safety initiatives used to identify actions aimed at addressing system failures.
- Maintained and provided regular updates to 24 trending analyses.
- Participated on the Patient Safety Reporting Systems Oversight Committee as we prepare to transition to the RL Solutions reporting software.

Our Team



Business and Finance

Janine Edmundson



Overview of services

The Department of Pharmacy Finance and Business Services Team provides many services to members of the Department and serves as liaison to DUH Finance, Corporate Finance, Human Resources, Payroll & the Patient Revenue Management Organization (PRMO). Services include:

- Revenue cycle management

- Manual charge entry
- Routine charge capture and claims audits
- Human resource and payroll processes
- Coordination of the preparation of the annual Operational and Capital Budgets
- Expense trending & cost accounting reporting
- Inventory management accounting processes
- Project management support as needed

Our Team

The Finance and Business Services team is composed of a dedicated, diverse set of individuals committed to enhancing Departmental financial and business processes to improve decision support and efficiency within the context of the Department's Balanced Scorecard and Mission. Total experience of the team with Duke totals over 90 years. Some individuals are enrolled in graduate and technical degree programs which will further enhance skills and performance in support of Departmental and Health System goals.



Availability

Pharmacy Finance and Business Services offices are open Monday – Friday 8:30 AM – 5:00 PM and are located in Suite 602 in the Hock II Office Building. The Administrative Director of Finance & Business Services is available by pager as needed.

Major Accomplishments

- Provided routine and specialized expense and revenue trend analysis in support of strategic departmental business units
- Maintained timely charge capture and kept late charge postings below established thresholds
- Assisted Department in maintaining expenses within the FY13 flex budget
- Coordinated the bi-annual inventory valuation and counts, including development of interim counts to support DMP opening
- Supported additional training of team members with one achieving Duke HR Certification and another completing Duke Financial Certification.
- Developed a new procedure to support the daily replenishment of products qualifying for 340B contractual discounts in the retail pharmacies
- Supported the successful implementation of Maestro Care by serving on the Pharmacy Governance Committee and coordinating the validation of the medication pricing file. The team was also represented on the High Risk Revenue Task Force and the Revenue Cycle Committee.



Overview of services

Oncology pharmacy specialists at Duke provide patient care to adult and pediatric cancer populations in both the inpatient and outpatient settings. Clinical services are tailored to patient care needs and include but are not limited to pharmacotherapeutic medication management, therapeutic drug monitoring, pharmacokinetic dosing, nutrition support, drug information, symptom management, supportive care, and patient education. The pharmacy team is also responsible for safely compounding and dispensing chemotherapy. Pharmacists work collaboratively with other health care providers to provide safe, efficacious, and cost-effective drug therapy to optimize outcomes in patients with malignant diseases. Oncology practitioners are involved in the development, support, and management of research/investigational protocols. Additionally, the education of future pharmacy practitioners is facilitated through mentoring of pharmacy students and residents in a variety of clinical settings.

Locations and Hours of Operation

Currently oncology pharmacists practice in the following areas:

- Ambulatory Oncology Clinics
 - Hematologic Malignancies
 - GU
 - GI
 - Thoracic
 - Breast
 - Sarcoma
 - Brain Tumor
 - Adult BMT
 - Pediatric BMT
- Inpatient Oncology Services (CPCS)
 - Hematologic Malignancies
 - Solid Tumors
 - Adult Bone Marrow Transplant
 - Pediatric Bone Marrow Transplant
 - Pediatric Oncology
- Infusion Pharmacies
 - Cancer Center Infusion Pharmacy
 - North Pavilion
 - Rainbow Day Hospital
- Investigational Chemotherapy Services

Major Accomplishments

- Supported implementation of Maestro Care and development of Beacon templates supporting standardization and enhanced safety with chemotherapy regimens
- Establishment of monthly oncology pharmacy meetings
- Implementation of Duke Oncology Pharmacy Oral Chemotherapy Management Program
- Implementation of a call back program in the Oncology Treatment Center for patients at high risk for chemotherapy induced nausea and vomiting
- Expanded and enhanced clinic pharmacy services in Duke Cancer Center

- 3 Clinical pharmacist practitioners
- Monthly inservices for Duke Cancer Center Treatment Center
- Participation in oncology fellow lecture series
- Providing dinner at Caring House

Continuity of Care

Evan Frasure



Overview of services

The Department of Pharmacy Continuity of Care (COC) Team was established in November of 2011 and serves to promote improvements in transitions of care experiences for patients at Duke University Hospital. Services provided by the COC team include:

- Interview patients admitted to Duke University Hospital (DUH) and in the Emergency Department (ED) at DUH to gather information regarding medications taken at home. In addition, COC team members will also call the patients pharmacy, provider, skilled nursing facility, caregiver, family members, or anyone else as needed to complete the most accurate medication list possible.
- Monitor the patient-pharmacy hotline established to allow patients a direct number to call with questions or concerns regarding any medication related issues
- Calling specific anticoagulation patients 72 hours after discharge to promote proper follow-up laboratory monitoring and patient education

Our Team

The COC team expanded during 2013 to now include a residency trained pharmacist coordinator, 4 full-time pharmacy technicians, and 5 part-time pharmacy technicians. The expansion of our team provided the resources needed to expand our services to include patient floors.



Availability

The COC team is available to see patients Monday through Friday from 7 AM until 10 PM and on the weekends and holidays from 8 AM until 6 PM. The Pharmacy Coordinator for the Continuity of Care team can be reached by phone M-F 8 AM – 5 PM (681-5008) or by pager (970-5584). The pharmacy technicians can be reached by pager at 970-0357.

Major Accomplishments

- Expansion of team from three to nine technicians

- Expansion of hours to 10 PM during the week and the addition of weekend/holiday coverage
- Established the multidisciplinary Transitions of Care Committee.
- Poster presentation at the 8th Annual Quality and Patient Safety Conference at Duke.
- Participation in multidisciplinary teams focused on improving transitions of care.
- Fostered patient pharmacy relationships through direct interaction with patients and introducing pharmacy to them early during their stay.

VII. Residency Programs

The pharmacy department's post graduate training opportunities continue to attract record numbers of applicants and product talented graduates. Staff members interviewed more than 150 candidates for Duke residency programs for positions in 2014.

We extend our gratitude to residency program directors:

- | | |
|---------------------------|---|
| ▪ Beth McLendon-Arvik | Post Graduate Year (PGY) 1* |
| ▪ Paul W. Bush | PGY1-2 Health-System Pharmacy Administration* |
| ▪ Kimberly Hodulik | PGY2 Ambulatory Care* |
| ▪ Kristen B. Campbell | PGY2 Cardiology* |
| ▪ Jennifer Mando-Vandrick | PGY2 Critical Care* |
| ▪ Ann Scates-McGee | Drug Information (with Glaxo Smith Kline) |
| ▪ Richard Drew | Internal Medicine/Infectious Diseases/Academia
(with Campbell University School of Pharmacy) |
| ▪ Julia M. Hammond | PGY2 Oncology* |
| ▪ Julia (Jill) Lawrence | PGY2 Pediatrics |
| ▪ Matthew T. Harris | PGY2 Solid Organ Transplantation* |

* ASHP-Accredited

2012-2013 Residency Graduates and Current Positions

The 2012-2013 residents successfully completed all requirements for graduation from Duke programs and include:

PGY1:

Kristi Beermann	PGY2 Solid Organ Transplant Residency, Duke University Hospital
Lindsey Burgess	PGY2 Cardiology Residency, Duke University Hospital
Katie Cambron	PGY2 Oncology Pharmacy Residency, Duke University Hospital
Jennifer Cole	PGY2 Critical Care Residency, Duke University Hospital

PGY1-2 Health-System Pharmacy Administration:

Joseph Krushinski III	Pharmacy Care Coordinator, Vidant Medical Center
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PGY2 Ambulatory Care:

Andrew Bundeff	Clinical Pharmacist, Ambulatory Care, Wake Forest Baptist Medical Center
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PGY2 Cardiology:

Alyssa Keating	Clinical Pharmacist, Duke University Hospital
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PGY2 Critical Care:

Rachel Waterson	ICU Clinical Pharmacist, Memorial Hospital, University of Colorado Health
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Drug Information:

Douglas Raiff	Clinical Pharmacist, Duke University Hospital
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Internal Medicine/Infectious Diseases/Academia:

Paul DiMondi Assistant Professor of Pharmacy Practice, Campbell University
College of Pharmacy & Health Sciences

PGY2 Oncology:

Monica Randolph Outpatient Clinical Oncology Pharmacist, Wishard Hospital

PGY2 Pediatrics:

Vacant

PGY2 Solid Organ Transplantation:

Jennifer Byrns Clinical Pharmacist, Duke University Hospital

**Chief Resident
Preceptor of the Year**

Joseph Krushinski, III
Sabina demarche



2013-2014 Residents

The 2013-2014 recruiting campaign successfully filled 14 residency positions offered at Duke. Listed below are the current residents and their College of Pharmacy and/or previous PGY1 residency program:

PGY1:

Sheena Merwine	University of Missouri – Kansas City
Rachel Rogers	Rutgers University
Jessica Stover	University of Houston
Mary Vacha	University of Nebraska

PGY2 Ambulatory Care:

Michelle Cefaretti PGY1 Pharmacy Residency – Henry Ford Hospital, Detroit,
Michigan

PGY2 Cardiology:

Lindsey Madures Burgess PGY1 Pharmacy Residency – Duke University Hospital

PGY2 Critical Care:

Jennifer Cole PGY1 Pharmacy Residency – Duke University Hospital

Drug Information:

Sarah White PGY1 Pharmacy Residency - Fresenius Medical Center

Internal Medicine/Infectious Diseases/Academia:

Justin Spivey PGY1 Pharmacy Residency – Medical University of South
Carolina

PGY1-2 Health-System Pharmacy Administration/M.S.:

Grayson Peek (PGY1) University of Tennessee
Kevin Helmlinger (PGY2) PGY1 Pharmacy Residency – Duke University Hospital

PGY2 Oncology:

Katie Cambron PGY1 Pharmacy Residency – Duke University Hospital

PGY2 Pediatrics:

Jennifer Schriber PGY1 Pharmacy Residency – St. Mary's Medical Center,
Huntington, WV

PGY2 Solid Organ Transplant:

Kristi Beermann PGY1 Pharmacy Residency – Duke University Hospital

Chief Resident

Kevin J. Helmlinger

VIII. Grants and Publications

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Pleasants R, Herrick H, Liao L. The Prevalence, Characteristics, and Impact of Chronic Obstructive Pulmonary Disease in North Carolina. *N C Med J*. 2013;74(5):376-383.

Pleasant R, Ohar J, Croft J, Liu Y, Kraft M, Mannino D, Donohue J, Herrick H. Chronic Obstructive Pulmonary Disease and Asthma. Patient Characteristics and Health Impairment. *J COPD* 2013;10:630-37.

