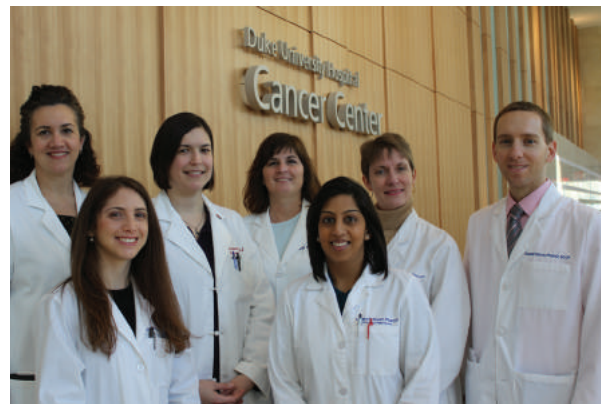




ANNUAL REPORT

# Department of Pharmacy

Fiscal year 2012



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**Duke Pharmacy**  
Duke University Hospital

**Message from the Chief Pharmacy Officer**

Paul Bush



It is my pleasure to present the 2012 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 Cancer Center Infusion Pharmacy and Cancer Center Specialty Pharmacy opened in conjunction with Duke Cancer Center and the Morris Pharmacy became a dedicated location for hospital based clinics and non-oncology infusion. Access to medications for ambulatory and discharged patients has been enhanced through the expansion of the Patient Assistance Program and initiation of a \$4 generic medication program.

Drug distribution and control within the operating rooms has been enhanced by implementation of Omnicell anesthesia workstations. Packaging capabilities have been enhanced by acquisition of a high speed oral solid and liquid packager. Two i.v.STATION robots have been acquired and implemented and provide new capabilities for sterile compounding preparation. These technologies have facilitated expanded unit-of-use product dispensing.

A dedicated team was formed to promote improvements in transitions of care. The initial focus has been to acquire medication histories for patients admitted through the Emergency Department and make follow-up phone calls for patients discharged on high risk medications. Pharmacists have worked extensively to support the design and development of Maestro Care through participation on numerous workgroups that developed the medication formulary and order sets. Frontline pharmacists revised and published the Pharmacy Pocket Guide. The Center for Medication Policy supported the development and implementation of the health system Pharmacy and Medication Management Committee and transition of Formulary Evaluation Teams from a hospital to health system role.

Investigation Drug Services have continued to assume a more comprehensive role through incorporation of the Infectious Disease Research Pharmacy, expansion of the Investigational Chemotherapy Service and expansion of services to the Duke Clinical Research Unit. Facilities have been improved by renovations of the Procurement repackaging area, the 3<sup>rd</sup> Floor Satellite and office space in Duke Clinic.

All of these changes directly support 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 cursive script that reads "Paul W. Bush". The ink is dark and the signature is fluid and legible.

Paul W. Bush, PharmD, MBA, FASHP  
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.

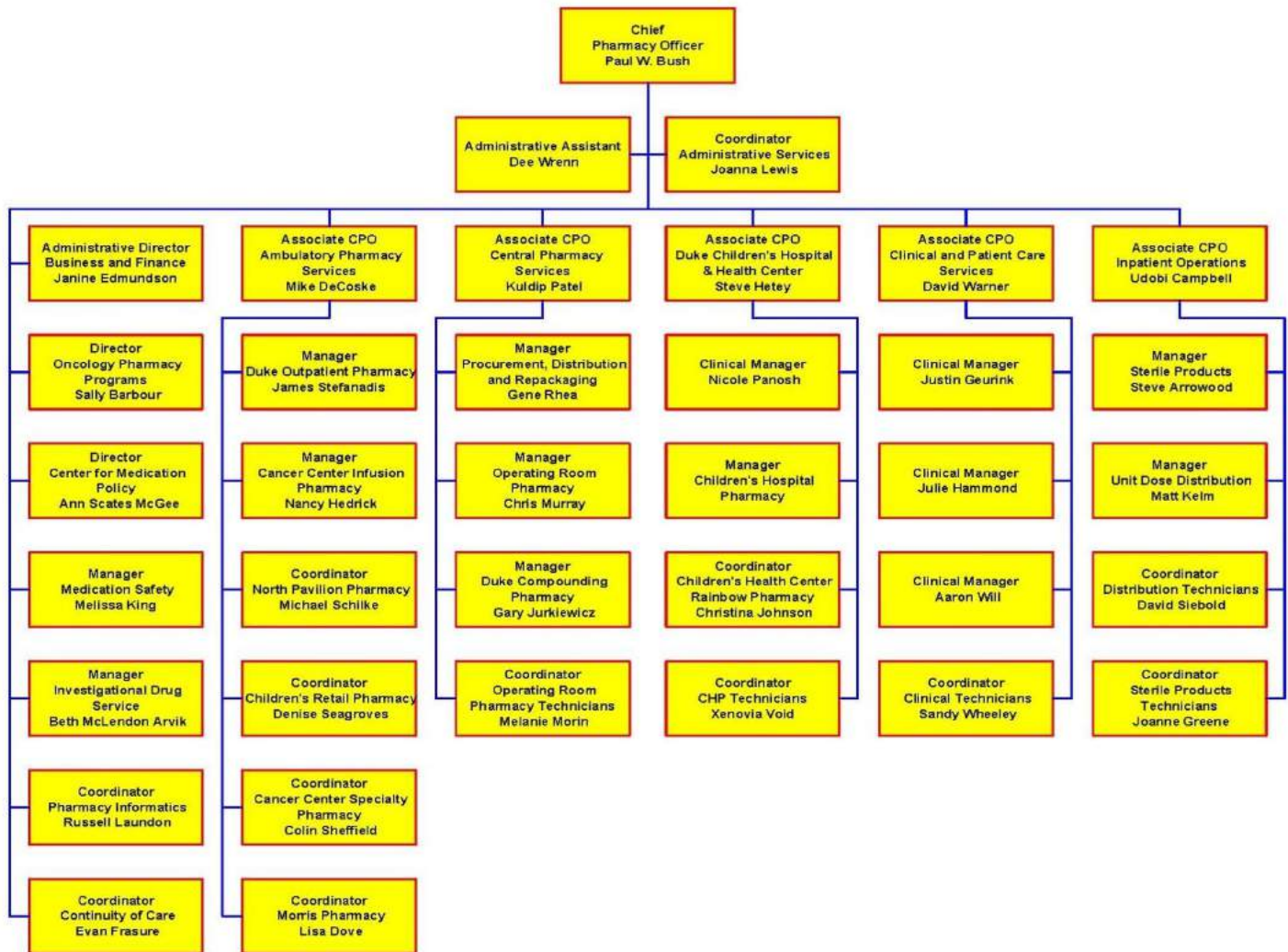
### Goals

- 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 (2012-12 Jun)						
Balanced Scorecard - All Measures						
Measure	Actual	Target	YTD Actual	YTD Target	Freq	Details
<b>QUALITY AND PATIENT SAFETY</b>						
ADEs Attributable To Pharmacy	1.0	1.8	16.0	22.0	M	
ADM Override Rate (ICU)	12.60%	13.00%	14.30%	13.00%	M	
ADM Override Rate (Non-ICU)	1.10%	2.00%	1.20%	2.00%	M	
Influenza Vaccination & Exemption Rate	83.4%	78.8%	83.4%	78.8%	M	
Non-Formulary Usage	0.53%	0.50%	0.52%	0.50%	M	
Pharmaceutical Utilization Management Program (PUMP) Reviews	5	12	21	48	Q	
<b>CUSTOMER</b>						
Percent Omnicell Stock-outs	0.34%	0.55%	0.57%	0.55%	M	
Retail Pharmacy Customer Satisfaction	88.00%	77.00%	73.00%	77.00%	Q	
Verification Turnaround Time	84.00%	90.00%	80.00%	90.00%	M	
<b>FINANCE AND GROWTH</b>						
Direct Contribution Margin for Outpatient Pharmacy	\$528,557	\$733,729	\$6,364,125	\$8,804,750	M	
Flex Expense Percent Variance	-0.06%	0.00%	1.45%	0.00%	M	
Flex FTE Percent Variance	-4.03%	0.00%	0.52%	0.00%	M	
<b>WORK CULTURE</b>						
Percent Terminations Annualized: Overall	9.37%	13.00%	9.37%	13.00%	M	
Work Culture Power Item Score	3.98	4.01	3.98	4.01	YTD	
<a href="#">Lighting Scheme</a>   <a href="#">BSC Enhancements &amp; Changes</a>   <a href="#">Target Methodology</a>   <a href="#">Generate Storyboards</a>						
DUHS Performance Services, 1/4/2013 3:01:37 PM						



## V. Financial Performance Summary

### Financial Report

	Inpatient Pharmacy Group	Outpatient Pharmacy Group	Retail Pharmacy Group	Administration / Education / IDS / Procurement
<u>Gross Revenue</u>	FY12 YTD FP12	FY12 YTD FP12	FY12 YTD FP12	FY12 YTD FP12
Plan	\$ 456,434,727	\$ 443,779,506	\$ 19,211,274	\$ 1,110,028
Actual	\$ 434,638,099	\$ 487,127,472	\$ 19,930,357	\$ 1,088,013
Variance	\$ (21,796,628)	\$ 43,347,966	\$ 719,083	\$ (22,015)
Percent Variance	-4.78%	9.77%	3.74%	-1.98%
<u>Expense</u>				
Original Plan	\$ 86,042,809	\$ 58,384,250	\$ 10,755,800	\$ 7,004,905
Variance from Orig	\$ 3,447,373	\$ (7,680,008)	\$ (2,796,324)	\$ 252,158
% Variance from Orig	4.01%	-13.15%	-26.00%	3.60%
Actual	\$ 82,595,436	\$ 66,064,259	\$ 13,552,124	\$ 6,752,747
Flex	\$ 83,913,242	\$ 70,044,125	\$ 10,609,778	\$ 7,004,905
Variance from Flex	\$ 1,317,806	\$ 3,979,866	\$ (2,942,345)	\$ 252,158
% Variance from Flex	1.57%	5.68%	-27.73%	3.60%
<u>Direct Contribution Margin</u>				
Target			\$ 8,455,474	
Actual			\$ 6,378,234	
<b>Overall DOP Variance from flex expense budget</b>				<b>1.52%</b>

### Capital Projects

Cabinets Automated Dispensing – Hospital-based Clinic Expansion

WBS Project ID: 309512051

FY Total Actual Amount: \$37,525

Unit Dose Solid and Liquid Packaging

WBS Project ID: 309512029

FY Total Actual Amount: \$115,360


CHC 4<sup>th</sup> Floor Rainbow Pharmacy Renovation

WBS Project ID: 309512082

FY Total Actual Amount: \$635,681



## Pharmaceutical Utilization Management Program

 <b>PHARMACEUTICAL UTILIZATION MANAGEMENT PROGRAM</b> <b>FY12 TRACKING (DUKE UNIVERSITY HOSPITAL)</b>					
PROJECT	OUTCOME	TEAM	PROJECTED SAVINGS	IMPLEMENTATION DATE	SAVINGS TO DATE (FY12)
<b>PROJECTS</b>					
Reduction in Dexmedetomidine by syringe standardization	cost avoidance	Periop PUMP Team	\$61,884	January-11	\$106,378
340B Allocation of IVIG	cost avoidance	Pharmacy - Procurement	\$62,500	April-12	
Analysis of Zosyn product and new contract pricing	cost minimization	Pharmacy - Procurement	\$266,207	September-11	\$771,810
Buy-ahead of Gemcitabine	cost minimization	Oncology PUMP	\$812,315	August-11	\$387,753
Buy-ahead of Trelstar	cost minimization	Oncology PUMP	\$8,364	July-11	\$78,349
Conversion of Lantus vials to unit-dose	cost minimization	Inpatient Operations	\$256,032	October-11	\$192,785
Recycling of select sterile preparations	cost minimization	Inpatient Operations	\$40,000	November-11	\$58,970
Generic conversion of IV Keppra	cost minimization	Pharmacy - Procurement	\$190,000	March-11	\$331,840
Prograf (tacrolimus) contract optimization	cost minimization	Pharmacy - Procurement	\$48,560	Dec-11	104,617
Infusion ordering project	cost minimization	CPCS		December-11	
Thyrogen Utilization in Clinic 2F2G	drug utilization	Oncology PUMP			\$219,429
HBC PHS price medication restocking initiative	cost minimization	Oncology PUMP	\$20,141		\$178,000
Oral IVIG use in Pediatric BMT patients	drug utilization	Children's			
Pediatric Antimicrobial Utilization	drug utilization	Children's		November-11	
Glucarpidase use avoidance	cost minimization	Children's	\$30,000	March-12	\$30,000
Antimicrobial management of CAP in Pediatrics	drug utilization	Children's		June-12	
Oncology waste billing	cost avoidance/revenue	Oncology PUMP	\$263,000	September-11	\$199,842
<b>TOTAL</b>			<b>\$2,059,003</b>		<b>\$2,659,773</b>





## 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, 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

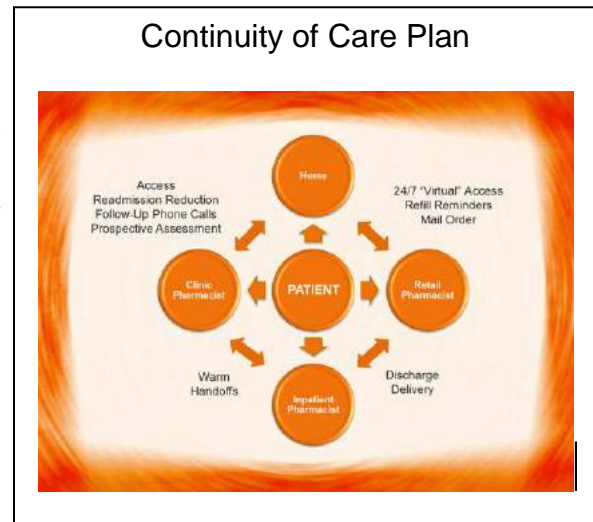
Michael DeCoske



### Overview of services

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

- 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 Oncology Treatment Center and Non-Oncology Infusion Center patients
- Duke Cancer Center Infusion Pharmacy
  - Oncology Treatment Center
  - Oncology Clinics
  - Radiation Oncology
- Morris Pharmacy
  - Non-Oncology Infusion Center
  - Duke Hospital Based Clinics
- North Pavilion Pharmacy
  - Ambulatory Surgery Center
  - Outpatient Bone Marrow Transplant
- OPD Retail Pharmacy
  - Duke Hospital Based Clinic patients
  - Duke employees
  - Discharged patients
  - Duke University Students
- CHC Retail Pharmacy\*
  - CHC patients
  - Duke employees
  - Discharge patients
- Clinic Pharmacists
- 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**

- Duke Cancer Center Infusion Pharmacy: 7:30 AM - 6:30 PM M-F
- Morris Pharmacy: 7:30 AM - 5:00 PM M-F
- North Pavilion Pharmacy: 6:30 AM - 5:00 PM M-F
- Duke Outpatient Retail Pharmacy: 8:30 AM - 6:00 PM M-F
- CHC Retail Pharmacy: 8:30 AM - 6:00 PM M-F; 9:00 AM - 1:00 PM Saturday
- Duke Cancer Center Specialty Pharmacy: 8:30 AM - 6:00 PM M-F

## **Major Accomplishments**

- Opening two new pharmacies in Duke Cancer Center
- Re-branding Morris Pharmacy for our Hospital Based Clinics and our Non-Oncology Infusion Center
- Establishment of a PHS Storeroom
- Expanded our clinic medication floorstock process
- Expansion of Omnicell Cabinets into Duke Cancer Center
- Implementation of Omnicell Anesthesia Work Stations in the Ambulatory Surgery Center
- Patient Assistance Program expansion and re-organization
- Implementation of \$4 Generic Medication Program
- Clinic pharmacist expansion and service development
- MaestroCare planning
- Tier One Work Culture Score

## **Team Members**





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**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 Pharmacies and Clinics. The department uses highly innovative inventory management systems and 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, Davidson Building.

The Duke North Perioperative Pharmacy services are available 24 hours a day, 7 days a week via the decentralized pharmacy satellite located on the 3<sup>rd</sup> Floor. 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 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**

- Implemented Automated Dispensing Cabinets (Omniceil<sup>®</sup> Anesthesia Workstation) in the operating rooms at Duke North, the Eye Center, and Ambulatory Surgery Center

- Establishing a Pharmacy Technician Coordinator position for the Perioperative Pharmacy
- Completion of the renovation of the Pharmacy Repackaging area
- Implementation of the high speed oral solid and liquid unit dose packaging machine
- Installation of additional security monitoring cameras in the Pharmacy Procurement department
- Implemented a formal CPS recognition program, titled “In the Spotlight” award
- Successful recertification of 340B program by the Health Resource and Services Administration (HRSA)
- Implemented the CPS Quarterly Update for the entire team, with invited hospital and health system senior leaders as guest speakers who provide the opening remarks
- Implementation of the DUHS Pharmaceutical Contracting Committee
- Implementation of the Critical Point<sup>®</sup> web-based, interactive, compounding sterile preparations training program for all DUH Pharmacy personnel
- Deployment of the Perioperative Pharmacy Services Weekly Updates (an electronic weekly newsletter highlighting the major changes and actions within the Perioperative Pharmacy areas)
- Approval of capital request to replace current carousels and expand with the state-of-the art Omnicell<sup>®</sup> Carousel technology for the Pharmacy Storeroom
- Approval of capital request to purchase and implement PK Software, The Compounder Lab. (An industry leading software program for documenting and maintaining formulations, compounding records, quality assurance data, and inventory management)
- PUMP project: preparation of intravenous acetaminophen in a unit of use format for pediatric patients in the Operating Rooms
- Optimized purchasing of generic and contracted products in addition to implementation of PUMP initiatives resulting in savings greater than \$800,000
- Consistent and systematic management of critical medication shortages (support provided by Duke Compounding Pharmacy, Pharmacy Procurement, and the Perioperative Pharmacy Services)

**Awards**

Zoe Stefanadis, RPh: Pharmacy Leadership Award  
 Bryan Wilson, CPhT: Pharmacy Teamwork Award  
 Wendy Rycek, PharmD, BCPS: Pharmacy Leadership Award  
 Latoria Lennon, CPhT: Pharmacy Leadership Award  
 Kuldeep Patel: Cardinal E3 Grant Program Recipient for improving transitions in care

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**Clinical and Patient Care Services**

David Warner



**Overview of services**

The Clinical and Patient Care Services Division (CPCS) comprises all 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 during the night shift in collaboration with the

Inpatient Operations staff. 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 and technicians who work collaboratively with internal and external customers to meet medication needs of patients at Duke Hospital. Most staff members have greater than 5 years of experience at Duke and are cross-trained to work 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 Eschelman School of Pharmacy and/or the Campbell University College of Pharmacy and Health Science. Staff members also actively support the department's mission through ongoing participation in 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 integrated practice model 16 hours per day, seven days per week. Specialized services, such as rounding with patient care teams, are provided Monday through Friday.

### **Major Accomplishments**

- Recruited and hired a new clinical manager
- Recruited and hired seven new pharmacists: lung transplant, oncology, surgery, medicine-cardiology, critical care, emergency department (one of whom completed Duke residencies in July 2010)
- Completed multi-disciplinary development of chemotherapy order templates for most commonly used and most complex adult inpatient chemotherapy regimens for existing ARIA and upcoming EPIC computer systems
- Staff participated in order set review across 74 content areas in preparation for EPIC Maestro Care
- Expanded clinical pharmacy services in the emergency department to 16 hours daily Monday-Friday
- Clinical Pharmacy Advisory Council (CPAC) group projects and activities have improved systems enhanced patient care services
  - Front-line pharmacists worked with nursing leaders to cause 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 collaborated with Central Pharmacy Services staff to redesign order verification processes for post-operative patients staying in the PACU overnight
  - Front-line pharmacist collaborated with nursing leaders to implement a pharmacist-driven vaccine screening program to enhance influenza and pneumococcal vaccination rates in medicine service patients
  - Front-line staff developed and implemented a new alcohol withdrawal protocol
  - Practice-group journal clubs and topic discussions offered regularly to pharmacists, residents, and students
- Seven new residents and staff members became board-certified and one staff member re-certified by examination
- Successfully launched a new commitment to the University of North Carolina Eschelman School of Pharmacy to increase student clerkship months from 120 to 200 annually
- Front-line staff member guided the revision, publication, and distribution of the Pharmacy Pocket Guide to CPCS and other pharmacy department pharmacists
- CPCS pharmacist self-scheduling team implemented



- Third floor pharmacy satellite renovated and clinical manager office relocated to that space
- Front-line staff participated in the 7<sup>th</sup> Annual Patient Safety and Quality Conference
- Two publications originated from CPCS staff members (and a former resident)
- 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
- Conducted numerous preceptor development sessions

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## **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 pharmacy support which encompasses services outlined above and medication order review.
- Nightly distribution of medication administration records (MARs) to all inpatient areas

### **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**

The daily work which is carried out by the group is primarily done from a central location on the zero level of Duke Hospital, room 0415; however, certain staff members are mobilized external to this area depending on need.

### **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 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 ADC
- The i.v.STATION robot ensures accurate preparation of products. Currently utilized for batch preparations which are not patient specific.

### **Major Accomplishments**

- Work Culture improvement from Tier II to Tier I
- Implementation of the i.v.STATION robot for sterile preparation compounding
- Development of a monthly metric dashboard
- Significant reduction in our reliance of the pneumatic tube system
- Introduction of the Technician Coordinator role for the Sterile Preparation Cleanroom
- Significant contribution in the deployment of automated dispensing cabinets in the operating rooms and surrounding hospital-based clinics.
- Nightly distribution of medication administration records (MARs)

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### **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 5<sup>th</sup> 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 4<sup>th</sup> 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 round daily on 3 general pediatric services, infectious diseases, hematology-oncology, cardiology, neurology, gastroenterology, solid organ transplant and allergy/immunology. The 5<sup>th</sup> 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 4<sup>th</sup> 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 (7) 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
- Satellite modifications to accommodate IVstation robot
- Chemotherapy order scanning to the sterile products cleanroom in order to provide additional verification before preparation
- Consistent staff recognition at general staff meetings
- CHC clean room project funded and launched
- Improved collaboration among divisions
- Improved communication among all staff members
- Tier II in work culture survey
- CHC descriptor and telephone number changed to eliminate misdirected calls
- Enhanced service via every 2 hour drug delivery





**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).
- Participate in the review of order sets.
- 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 resources subscriptions.
- Provide a learning environment in which pharmacy students and residents can acquire or enhance skills necessary to respond to and research medication related issues.
- 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 DUH 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 8AM to 5PM. After hours consultations are provided by an on-call system (pager 970-8110). Non-emergency requests may be left on voicemail (684-5125).

### **Resources**

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**

- Supported the implementation of the health system Pharmacy and Medication Management Committee and its role with leading the development of a health system formulary.
- Coordinated structural and functional changes to guide Formulary Evaluation Teams to meet the desired health system goals as outlined in charter.
- Support the drug shortage policy by continuing to participate in the development and implementation of action plans.
- Collaborate with pharmacists and technicians from IT, operations and procurement to implement 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.
- Implemented a new webpage in order to improve the manner in which medication formulary and policy information is broadcast within the Department and DUH. The goal is to make this tool accessible across DUHS.
- In 2012, the CMP supported the review of 35 medications, 9 class reviews, 8 MUEs, 5 REMS policies, and 6 therapeutic interchange programs via the P&T Committee process.

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### **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 Service. 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 and ICS 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 both services is on-call 24/7. (IDS on-call pager 970-8392; ICS: individual team members via paging web). Non-emergent requests may be left on voicemail (IDS: 684-3543; ICS: 668-0657). 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.

### **Major Accomplishments**

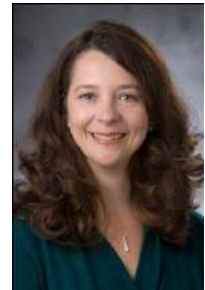
- Creation of HMM codes for all inpatient drug studies and ARIA codes for all outpatient oncology studies
- Full implementation of Vestigo for all 3 Investigational Service areas to streamline billing services, dispensing, drug accountability and advance safety

- Itemized monthly invoices for all studies
- Successful move of ICS into the new cancer center facility and ability to organize study binders and medications by study team
- Incorporated the Infectious Diseases Research Pharmacy under the Department of Pharmacy and implemented Vestigo
- Create instructions for providers to use the study Drug Shell for ordering study medication fin CPOE for non-chemotherapy study drugs
- Development of a functional pharmacy within the Duke Clinical Research Unit
- All IDS staff became USP 797 certified
- The IDS teams have had 79 new studies initiate and have closed out a total of 141 studies in the past fiscal year

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## **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**

- Review, investigation and analysis of over 4600 medication-related SRSs.
- Review 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 including four new groups over the last fiscal year (Oncology CSU Core Safety Committee, Women's CSU ADE review committee, Radiology CSU ADE review committee and the N51, N53, and N77 ADE review committee.)
- Utilized the collaborative review process for two pharmacy-sourced medication events



- Encouraged and recognized pharmacy participation in SRS reporting, resulting in ~11% increase in the volume of voluntary reports submitted with 198 individuals participating in FY12 as compared to 182 in FY11. 94.4% of pharmacy reporters identified themselves by name rather than reporting anonymously.
- 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.
- Achieved 97.5% peer review agreement with medication safety analysis (FY12).
- Generated over 40 adhoc reports for quality improvement and medication safety initiatives used to identify actions aimed at addressing system failures.
- Maintained and provided regular updates to 26 trending analyses.
- Participated in the review of commercially available safety reporting systems including site visits
- Completed the 2011 ISMP Hospital Survey – September 2011
- Assisted in the multidisciplinary review of hypoglycemic events resulting in enhanced monitoring of blood glucoses in the OR area, improved hypoglycemia protocol, creation of dextrose 10% algorithm for interrupted tube feeding and revision of insulin administration guidelines offered in CPOE orders sets and the insulin advisor.
- Two Medication Safety pharmacists received their certification as Patient Safety Leader
- Participated in Anticoagulation Task Force and the development of Clinical Practice Standards for the Management of Anticoagulation (Ambulatory)
- Presented ASHP Pearl at ASHP Midyear in New Orleans, LA (12/5/11)
- Presented two posters at the 7<sup>th</sup> Annual Duke Medicine Patient Safety and Quality Conference (12/15/11)

**Our Team**



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**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 as well as serving 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. 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 – 5:00PM and are located in Suite 602 in the Hock II Office Building. Charge Control staff schedule weekend hours to assure timely posting of manual charges. The Administrative Director of Finance & Business Services is available by pager as needed.

### **Major Accomplishments**

- Maintained the Department's new financial structure which included 9 new cost centers
- Provided routine and specialized expense and revenue trend analysis in support of strategic departmental business units
- Maintained late charge postings below 1%
- Assisted Department in maintaining expenses within the FY12 flex budget
- Met DUH and Corporate Finance deadlines and enhanced reporting requirements for annual inventory counts
- Welcomed a new Financial Analyst and Data Entry Clerk to the team

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## **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:

- Calling specific anticoagulation patients 72 hours after discharge to promote proper follow-up laboratory monitoring and patient education.
- Track appropriate anticoagulation teaching for inpatients new to therapy with warfarin.
- Interview patients in the Emergency Department (ED) at Duke University Hospital 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

### **Our Team**

The COC team is currently comprised of a residency trained pharmacist coordinator, 2 full-time pharmacy technicians, and 1 part-time pharmacy technician/student. The COC team is expanding to include more opportunities to involve students in the process and expand the hours covered in the ED.



### **Availability**

The COC team is in the ED interviewing patients Monday through Friday from 8 AM until 6 PM. This will expand in the near future to cover until 10 PM in the evening with future expansion to cover the weekends. 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**

- Awarded the 2012 Cardinal Health Foundation E3 Grant.
- Created an anticoagulation call-back program that has touched more than 600 patients and identified/prevented numerous potential adverse events.
- Developed training materials and competencies for pharmacy technicians hired as a member of the COC team.

- Worked collaboratively with information technology (IT) colleagues to create documentation abilities within the patient's electronic health record (EHR).
- Participated in multidisciplinary teams focused on improving transitions of care.
- Established a patient-pharmacy hotline where patients can reach a member of the COC team with questions or concerns regarding any medication related issue.
- 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 grew in 2010 and continue to attract record numbers of applicants and product talented graduates.

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)   |
| ▪ Byron May and Richard Drew | Internal Medicine/Infectious Diseases/Academia<br>(with Campbell University School of Pharmacy) |
| ▪ Julia M. Hammond           | PGY2 Oncology*  |
| ▪ Julia Lawrence             | PGY2 Pediatrics   |
| ▪ Matthew T. Harris          | PGY2 Solid Organ Transplantation*   |

\* ASHP-Accredited

### **2011-2012 Residency Graduates and Current Positions**

The 2011-2012 residents successfully completed all requirements for graduation from Duke programs and include:

#### **PGY1:**

Mason Bucklin	PGY2 Emergency Pharmacy Medicine Residency, University of Rochester Medical Center
Stefanie Hawkins	Clinical Pharmacist, University of Kansas Medical Center
Alyssa Keating	PGY2 Cardiology Residency, Duke University Hospital
Rachael Waterson	PGY2 Critical Care Residency, Duke University Hospital

#### **PGY1-2 Health-System Pharmacy Administration:**

Joseph Krushinski	PGY2 Health-System Pharmacy Administration, Duke University Hospital
W. Russell Laundon	Coordinator of Pharmacy Informatics, Duke University Hospital

#### **PGY2 Ambulatory Care:**

Holly Causey	Clinical Pharmacist, Duke Outpatient Clinic, Duke University Hospital
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#### **PGY2 Cardiology:**

Jessica Casey	Cardiology Clinical Pharmacist, University of Kansas Medical Center
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#### **PGY2 Critical Care:**

Matthew Felbinger	Clinical Pharmacist, Emergency Department, New Hanover Regional Medical Center
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#### **Drug Information:**

Megan M. Zolman	Senior Medical Information Scientist II, GlaxoSmtihKline
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**Internal Medicine/Infectious Diseases/Academia:**

Steven Johnson                      Assistant Professor of Pharmacy Practice, Internal Medicine and Infectious Diseases, Campbell University College of Pharmacy & Health Sciences

**PGY2 Oncology:**

Melissa Mackey                      Clinical Pharmacist, Duke University Hospital  
Jeryl Villadolid                      Clinical Oncology Pharmacy Specialist, University of Chicago Medical Center

**PGY2 Pediatrics:**

Lyndrick Hamilton                      Neonatal Intensive Care Clinical Specialist, Arnold Palmer/Winner Palmer Hospital for Women and Babies

**PGY2 Solid Organ Transplantation:**

Michael Hurtik                      Clinical Pharmacy Specialist, Heart and Lung Transplantation, Emory University Hospital

**Chief Resident**                      Matthew Felbinger  
**Preceptor of the Year**                      Kimberly Hodulik

**2012-2013 Residents**



The 2012-2013 recruiting campaign successfully filled 13 residency positions offered at Duke. Listed below are the current residents and their College of Pharmacy and/or previous PGY1 residency program:

**PGY1:**

Kristi Beermann                      University of Florida  
Jennifer Cole                      Purdue University  
Lindsey Madures                      Virginia Commonwealth University  
Kathleen Touloupas Cambron                      Duke University Hospital

**PGY2 Ambulatory Care:**

Andrew Bundeff                      PGY1 Pharmacy Residency – Massachusetts College of Pharmacy and Health Sciences and Harvard Vanguard Medical Associates/Atrius Health

**PGY2 Cardiology:**

Alyssa Keating PGY1 Pharmacy Residency – Duke University Hospital

**PGY2 Critical Care:**

Rachael Waters PGY1 Pharmacy Residency – Duke University Hospital

**Drug Information:**

Doug Raiff PGY1 Pharmacy Residency - Metro Health, Cleveland, OH

**Internal Medicine/Infectious Diseases/Academia:**

Paul DiMondi PGY1 Pharmacy Residency – Pitt County, Greenville, NC

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

Kevin Helmlinger (PGY1) University of North Carolina

Joseph Krushinski (PGY2) PGY1 Pharmacy Residency – Duke University Hospital

**PGY2 Oncology:**

Monica Randolph PGY1 Pharmacy Residency – UC Health, Cincinnati, OH

**PGY2 Pediatrics:**

Vacant

**PGY2 Solid Organ Transplant:**

Jennifer Byrns PGY1 Pharmacy Residency – Medical University of South Carolina – Charleston, SC

## VIII. Grants and Publications

### Grants

Cardinal Health Foundation E3 Grant for Continuity of Care Program

Members involved: Joanna Lewis, Kuldip Patel, Evan Frasure, Melissa King

### Publications

**Barbour SY.** Corticosteroids in the treatment of chemotherapy-induced nausea and vomiting. *J Natl Compr Canc Netw.* 2012 Apr;10(4):493-9.

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**Mackey MC**. Intravesicular cidofovir for the treatment of polyomavirus-associated hemorrhagic cystitis. *Ann Pharmacother*. 2012 Mar;46(3):442-6.

**Panosh N, Drew R, Sharpe M**. Effect of closed-loop order processing on the time to initial antimicrobial therapy. *Am J Health Syst Pharm*. 2012 Aug 15;69(16):1423-6.

Rosoff PM, **Patel KR, Scates A, Rhea G, Bush PW**, Govert JA. Coping with critical drug shortages: an ethical approach for allocating scarce resources in hospitals. *Arch Intern Med*. 2012 Oct 22;172(19):1494-9.

**Pleasants R**, et al. Chronic obstructive pulmonary disease and associated health-care resource use - North Carolina, 2007 and 2009. *MMWR Morb Mortal Wkly Rep*. 2012 Mar 2;61(8):143-6.

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## **IX. Strategic Initiatives for FY 2013**

### **Quality and Patient Safety:**

- Prepare for occupancy of the Duke Medical Pavilion
- Implement Maestro Care
- Improve care transitions and coordination of services
- Standardize clinical processes across divisions
- Standardize dosage concentrations and dosage forms
- Develop and implement a centralized order verification center
- Implement dose tracking software system
- Implement carousel inventory management technologies
- Implement pharmacy compounding software
- Expand clinical services on the night shift
- Develop systems to evaluate utilization and compliance with ATI
- Integrate learners into operations, support and clinical services
- Develop a tech check tech program
- Expand and optimize Perioperative Pharmacy Service
- Expand and optimize Emergency Department Pharmacy Services
- Expand the number of pharmacists credentialed as Clinical Pharmacist Practitioners (CPP)
- Implement the pharmacy credentialing process
- Develop department performance tracking (dashboard)
- Establish competency based training for handling chemotherapy orders
- Develop competencies for specialized clinical services
- Re-assess the workload management (Flex) program with a focus on measuring clinical service
- Evaluate compliance and implement process changes to comply with the *NIOSH List of Antineoplastic and Other Hazardous Drugs in Healthcare Settings 2012*

### **Customer Service:**

- Implement a defined process to improve the HCAHPS score for the following questions:
  - Communications about medications (question 17/18)
  - When I left the hospital, I clearly understood the purpose for taking each of my medications (question 25)
- Develop a departmental internal customer service plan
- Improve nursing satisfaction with pharmacy services

### **Work Culture:**

- Continue to develop opportunities for technician advancement
- Expand the student internship program
- Revise competency based orientation (CBO) documents
- Improve the on-boarding and orientation processes
- Describe the patient-centered Duke Pharmacy practice model (clinical and operational services)
- Determine needs and develop processes to enhance communication systems with the department
- Continue to expand the preceptor development program
- Complete transition to the new Sharepoint Intranet site
- Re-initiate the Winter Symposium

### **Finance and Growth**

- Expand medication utilization and cost management capabilities – expand oversight of high-cost/high risk medications
- Identify and implement \$3 million in savings/revenue enhancements (PUMP)
- Work collaboratively with DUHS Procurement to achieve best price for pharmaceuticals
- Develop the business case and implement billing process for ambulatory clinical services
- Evaluate feasibility and begin application to become an accredited Specialty Pharmacy provider
- Implement an Antimicrobial Stewardship Team in collaboration with Infectious Diseases

