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GREETINGS FROM THE ADMINISTRATOR

I am honored to present the fiscal year 2017 Annual Report for Pharmacy Services. As health care continues to undergo a nationwide transformation, we remain driven to do more in support of our mission to heal, comfort and care for the people of our community. To succeed, we continue to be guided by the Triple Aim, a framework that helps us produce better health, better care and better cost. Pharmacy Services continues to innovate, providing the highest level of pharmacy services to our patients through outstanding clinical services, and a distribution model that provides safety and efficiencies like no other.

This fiscal year on Sept. 1, 2016, we successfully converted our Group Purchasing Organization from Vizient to HealthTrust. On Sept. 16, 2016, Schuylkill Health became part of Lehigh Valley Health Network (LVHN). On Jan. 1, 2017, Pocono Medical Center also became a member of our network. We completed the year by opening the Lehigh Valley Hospital (LVH)–Muhlenberg Family Birth and Newborn Center along with a Center of Inpatient Rehabilitation on June 21, 2017.

Pharmacy Services commands a high number of a very distinct group of pharmacy professionals. These pharmacists are on the leading edge of patient care. The total number of certified pharmacists through the Board of Pharmacy Specialties in Pennsylvania is 992. LVHN has 33 certified pharmacists on staff, representing 3.3 percent of the state. Within the Board of Pharmacy Specialties 30 of our 33 certified pharmacists are Board Certified Pharmacotherapy Specialists (BCPS). The total number of BCPS pharmacists in the state of Pennsylvania is 670; therefore, LVHN represents 4.5 percent of the state’s BCPS pharmacists.

The safety and quality performance across all sites continues to shine as we dispensed over 9,006,537 doses, and our LVHN harmful error rate was two errors per million doses dispensed. We provided clinical interventions on 113,820 orders that resulted in safer care and cost reductions of more than $923,000. Our retail, infusion and specialty pharmacy divisions continue to grow financially while providing high-quality patient care and customer service. In fiscal year 2017, those divisions generated $6.4 million in operating income. Additionally, our alignment with the LVHN Health Plan continues to offer significant savings to the network.

As we begin fiscal year 2018, we look forward to the opening of Health Spectrum Pharmacy Services–Pocono and opening of Health Spectrum Pharmacy Services infusion division’s new location. Thank you for supporting Pharmacy Services, and I look forward to another exciting year ahead.

Best Regards,
Brian D. Lenich
Administrator, Pharmacy Services
LVHN PHARMACY SERVICES

INPATIENT PHARMACIES – ONE AT EACH OF OUR EIGHT HOSPITAL LOCATIONS

3 in Allentown, Pa.
- LVH–Cedar Crest
- LVH–17th Street
- LVHN–Tilghman

1 in Bethlehem, Pa.
- LVH–Muhlenberg

1 in East Stroudsburg, Pa.
- LVH–Pocono

2 in Pottsville, Pa.
- LVH–Schuylkill E. Norwegian St.
- LVH–Schuylkill S. Jackson St.
FISCAL YEAR 2017 STATISTICS

INPATIENT PHARMACY DEPARTMENT VOLUME METRICS FOR
LVH–CEDAR CREST, LVH–MUHLENBERG, LVH–17TH STREET, LVHN–TILGHMAN,
LVH–HAZLETON, LVH–SCHUYLKILL AND LVH–POCONO

DOSES ADMINISTERED
9,006,537

ORDERS VERIFIED
2,781,300

INTERVENTIONS
113,820

HARD COST SAVINGS FROM INTERVENTIONS
$923,000

DRUG EXPENSE
$143,265,266
HEALTH SPECTRUM PHARMACY SERVICES
FISCAL YEAR 2017

RETAIL PHARMACY DIVISION

<table>
<thead>
<tr>
<th>Number of Prescriptions</th>
<th>Number of Bedside Deliveries</th>
<th>Number of Shipped Prescriptions</th>
<th>Board-Certified Pharmacists</th>
<th>Number of Pharmacists Certified to Administer Vaccinations</th>
<th>Certified Diabetic Educator</th>
<th>BOC-Certified Orthotic Fitters</th>
<th>Net Revenue</th>
<th>Operating Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>387,645</td>
<td>595</td>
<td>27,373</td>
<td>1</td>
<td>15</td>
<td>1</td>
<td>5</td>
<td>$53,055,240</td>
<td>$3,728,718</td>
</tr>
</tbody>
</table>

Health Spectrum Pharmacy Services are located at LVH–Cedar Crest, LVH–17th Street and LVH–Muhlenberg. In addition to filling and dispensing LVHN employee prescriptions, we also dispense medication to patients being discharged from our hospitals, our clinic patients and other members of our community. Services we offer include bedside prescription delivery, compliance packaging, free convenience shipping and adult immunization administration.

SPECIALTY PHARMACY DIVISION**

<table>
<thead>
<tr>
<th>Number of Prescriptions</th>
<th>Specialty Patients Enrolled in Therigy</th>
<th>Net Revenue</th>
<th>Gross Margin</th>
</tr>
</thead>
<tbody>
<tr>
<td>17,397</td>
<td>1,012</td>
<td>$34,602,983</td>
<td>$4,335,511</td>
</tr>
</tbody>
</table>

** Specialty numbers are broken out of retail data.

SPECIALTY PHARMACY DIVISION

Our specialty pharmacy team works closely with LVHN specialists to obtain high-cost, high-touch medications for patients. Services offered by our specialty team include but are not limited to: prior authorization, appeal and financial assistance support, monthly patient compliance phone calls, on-site self-injectable teaching and compliance packaging. Our team utilizes a care management system called TherigySTM to track patients’ clinical outcomes. In fiscal year 2017, we added one new FTE. We were successfully able to obtain more limited distribution drugs, and expanded our relationship with LVHN Rheumatology, Hematology Oncology, and the MS Center.

HOME INFUSION DIVISION

<table>
<thead>
<tr>
<th>Number of Patients</th>
<th>Number of Deliveries</th>
<th>Number of Miles Driven</th>
<th>Net Revenue</th>
<th>Operating Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,098</td>
<td>9,864</td>
<td>97,281</td>
<td>$10,564,981</td>
<td>$2,670,352</td>
</tr>
</tbody>
</table>

Health Spectrum Pharmacy Services home infusion division services patients in 13 counties in Pennsylvania and two counties in New Jersey. Therapies provided include but are not limited to: TPN, anti-infectives, chemotherapy, immunoglobulin, hemophilia factors, pain management and corticosteroids. Our team consists of pharmacists, nurses, financial coordinators, pharmacy technicians and delivery technicians, all with the goal of delivering high-quality, cost-effective services to patients in the comfort of their homes. Partnering with Lehigh Valley Home Care and other agencies, Health Spectrum’s home infusion division provides the most up-to-date services and infusion devices to allow patients the freedom to continue their recovery and take charge of their care in the comfort of their homes.
LVH–CEDAR CREST,
LVH–17TH STREET
AND LVHN–TILGHMAN

Lehigh Valley Hospital license includes LVH–Cedar Crest, LVH–17th Street and LVHN–Tilghman. These locations combined have 890 licensed beds.

LVH–CEDAR CREST is a Level 1 Trauma Center and offers a complete continuum of care from emergency services to surgery, to acute and sub-acute care, to rehabilitation. LVH–Cedar Crest offers the region’s only children’s emergency department and also offers outpatient care services. For the 21st consecutive year, Lehigh Valley Hospital–Cedar Crest ranked among the nation’s top Hospitals on U.S. News & World Report’s Best Hospitals list.

LVH–17TH STREET hosts these services and more: emergency room, short-stay hospital (elective and ambulatory surgery), Fairgrounds Surgical Center, Community Health and Wellness Center, community clinics, HIV/AIDS and hepatitis care, hospice, Breast Health Services, Sleep Disorders Centers and the Fleming Memory Center. LVH–17th Street is a hub of community wellness.

LVHN–TILGHMAN: The Center of Orthopedic Medicine–Tilghman includes a state-of-the-art orthopedic campus.

LVH–MUHLENBERG

LVH–MUHLENBERG has 196 licensed beds and features all-private inpatient rooms and a vast array of health care services. Services include: Breast Health Services, LVH–Muhlenberg Cancer Center, heart and vascular care, diagnostic services, rehabilitation, dental clinic, pediatric ambulatory surgery unit, adolescent psychiatry, Behavioral Health Science Center, emergency room and critical care. LVH–Muhlenberg is ranked No. 10 in the state by U.S. News & World Report’s Best Hospitals list.

LVH–HAZLETON

LVH–HAZLETON, formerly Hazleton General Hospital, has 150 beds and provides inpatient acute care, rehab care at Gunderson Rehabilitation Center, emergency care, maternity and home care. It was the first accredited Primary Care Stroke Center in northeast Pennsylvania. LVH–Hazleton is also an accredited Chest Pain Center and a Bariatric Surgery Center of Excellence.

LVH–SCHUYLKILL

LVH–SCHUYLKILL comprises two hospitals formerly known as Schuylkill Health System in Pottsville, Pa. LVH–Schuylkill E. Norwegian Street (126-bed acute care) and LVH–Schuylkill S. Jackson Street (179-bed general acute care) are undergoing a campus integration to better align inpatient and outpatient services. The hospitals provide a broad range of inpatient and outpatient services including surgical services, maternal/child health, acute inpatient rehabilitation, geriatric, adult and adolescent behavioral health units as well as emergency department care, cardiac rehab, advanced wound care, interventional radiology, PET-CT and digital mammography.

LVH–POCONO

In January 2017, POCONO HEALTH SYSTEM merged with Lehigh Valley Health Network. Its 239-bed acute care hospital cares for critically ill and injured at the Mattioli level 3 Trauma and Emergency Center, and cancer patients at the Dale and Frances Hughes Cancer Center. The hospital and physician practices offer maternal and child care, orthopedic care and heart care through the ESSA Heart and Vascular Institute.
Outpatient infusion services encompasses three locations, each with its own pharmacy. The multipurpose area (MPA) pharmacy at LVH–Cedar Crest operates with four pharmacists and three technicians Monday–Friday and one pharmacist and one technician on Saturday. During fiscal year 2017, the total visits for the MPA area were 28,244. The multipurpose satellite (MPS) at LVH–Muhlenberg operates with two pharmacists and two technicians Monday–Friday and is closed on Saturday. The MPS area had total visits of 13,370. The multipurpose area at Bangor (MPB) operates with one pharmacist and one technician Monday–Friday and is closed on Saturday. The total visits for MPB equaled 2,551. The outpatient infusion center's total visits increased by percent from the previous fiscal year.

Pharmacists at infusion locations review each patient’s treatment regimen for allergies, laboratory results and other diagnostic tests required for certain medications. They then make recommendations based on these factors to ensure the appropriate treatment regimen and dose is being safely administered to patients. Pharmacists are also a vital source of drug education for both the nursing and physician staffs. Their on-site availability also provides patients with the opportunity to have drug-related questions/concerns answered face to face. The pharmacy is involved in more than 100 clinical trials, for which we are responsible for preparation, storage and accountability of medication. Our outpatient infusion pharmacy staff is a vital part of the patient’s treatment team, ensuring appropriateness of therapy, correct dosing and sterile preparation of medications, and follow-up throughout the treatment regimen for adverse reactions, side effects and continuity of care from cycle to cycle and from site to site. In October 2016, the outpatient infusion services transitioned to EPIC, so all information is now available in one medical record.
EDUCATION

PGY1 RESIDENCY PROGRAM
The LVHN program has been accredited by ASHP since 2007. Our program prepares pharmacists for clinical, teaching and entry-level management positions, or for PGY2 training in a community hospital setting. The program currently has 14 preceptors covering a broad range of required and elective learning experiences.

We would like to congratulate our 2016 graduates:
- Aubrey A. Goertel, Pharm.D. – PGY2 pharmacy residency in ambulatory care at Kaiser Permanente, Denver, Colo.
- Breana K. Goscicki, Pharm.D. – PGY2 pharmacy residency in pediatric oncology at Memorial Sloan Kettering Cancer Center, New York, N.Y.

We matched both residency positions for the upcoming year:
- Elizabeth Shober, Thomas Jefferson University, Philadelphia, Pa.

PHARMACY STUDENTS
LVHN serves as a clinical and hospital rotation site for five colleges of pharmacy – total of 20 student rotations in FY17.

- University of the Sciences Philadelphia
- Wilkes University
- Thomas Jefferson University
- Temple University
- University of Rhode Island

In this last academic year, 12 clinical specialists and administrators precepted 17 student rotations. Rotations offered included critical care, hospital/institutional, infectious diseases, internal medicine, medication safety, oncology, and pediatric oncology/infectious diseases. Twenty pharmacy student interns were employed in the department in FY17, with two graduating from pharmacy school and one entering a pharmacy residency program.

Health Spectrum Pharmacy Services offered two student rotations in specialty pharmacy and home infusion. Six pharmacy interns were employed in FY17.

ACCREDITATION COUNCIL FOR PHARMACY EDUCATION (ACPE)
The Pharmacy Department fulfilled the accreditation requirements set forth by the Accreditation Council for Pharmacy Education (ACPE) and was accredited as a Provider of Continuing Pharmacy Education through Jan. 31, 2022.

- LVHN Pharmacy Department sponsored three ACPE sessions accounting for 140 certificates and 24.7 CEU or 247 continuing education credit hours for pharmacy staff.
- LVHN Pharmacy Department co-sponsored four ACPE sessions accounting for 59 certificates and seven CEU or 70 continuing education credit hours for pharmacy staff.

CONTINUING EDUCATION CREDIT HOURS FOR PHARMACY STAFF
MEDICATION SAFETY AND MEDICATION RECONCILIATION

LVHN has a dedicated medication safety officer who assists all health care professionals in the safe, efficient delivery of health care. The medication safety officer works with nursing, health care informatics, providers and ancillary health care professionals to keep the chance of hurting a patient due to medication error to about two in a million.

RECENT SAFETY IMPROVEMENTS THAT CONTRIBUTE TO THIS SAFETY LAYER INCLUDE:

- Begun Opioid Stewardship with the LVHN Department of Medicine
- Implemented Beacon module for Epic for the network Cancer Centers
- New waste stream for the management of controlled substance waste
- Continual quality management of hospital system to ensure safety of our information systems
- Cooperation with senior leadership and Board of Trustees that propels LVHN's commitment to safety forward
- Surveillance of controlled substance administration to strive for a system that prevents diversion and maintains the highest standard of medication availability
- Supports the network's role in research as chairman of the Institutional Review Board.

Medication reconciliation continues to challenge the hospital every day. Patients enter our network with fragmented medication lists that challenge our providers. In one audit, we determined that 98.5 percent of our patients enter the network with at least one error in their medication information. Nursing struggles to combat this misinformation on a daily basis. When discrepancies arise, staff uses primary source verification as a tool to address these discrepancies. While it takes MRTs on average 18 minutes to complete the process, their error rate of 0.9 percent is much lower than a national benchmark of 54 percent published in 2010. LVHN's six MRTs performed reconciliations on approximately 10,500 patients in FY17.

LEHIGH VALLEY HOSPITAL HOME INFUSION PROGRAM ELIMINATED 4,755 INPATIENT DAYS, AND SAVED $1,034,589 IN HOSPITAL EXPENSE.

FINANCIAL COORDINATOR OBTAINED OVER $861,907 IN MEDICATIONS FROM MANUFACTURES FOR INDIGENT LVHN CLINIC PATIENTS.

CLINICAL SERVICES

CLINICAL PHARMACISTS

- Inpatient pharmacists rotate team responsibilities in a decentralized setting on patient care units
- Satellite pharmacies in operating suite
- Outpatient infusion centers

LVHN pharmacists continued to increase presence in various direct patient care activities. Rounding services with pharmacist participation include an internal medicine teaching service, hospitalist rounding service, intensive cardiac care, trauma intensive care, burn intensive care, medical intensive care, pediatric intensive care, neonatal intensive care, pediatric infectious diseases, adult oncology and family medicine. As part of clinical rounds, order verification review/clarification and responses to drug information requests, pharmacists documented 113,820 interventions this past year. All totaled, these interventions translated into hard cost savings of more than $923,000. Further cost minimizations were realized in the cardiology and oncology service lines through the combined efforts of pharmacy and providers. In cardiology, use of mutually agreed upon patient selection criteria has resulted in
significant reduction in bivalirudin. Similarly, this same team was able to reduce overall clopidogrel costs utilizing an innovative method for providing the ‘loading dose’ of this medication. In adult oncology, a pharmacy lead initiative to administer “mab” drugs in the outpatient clinic whenever possible through use of electronic order entry protocols has resulted in total drug cost savings in excess of $230,000 since November 2016. In addition to cost reduction measures, LVHN pharmacists continue to be engaged in multiple network-wide care initiatives including ongoing efforts to improve VTE prophylaxis, sepsis care and antimicrobial stewardship. New network initiatives in COPD management and a novel program for managing elective cardiac intervention patients were facilitated with pharmacist participation. In the continued effort to help ensure that safe, effective medications are available for our patients, the pharmacy and therapeutics committee reviewed more than three dozen medications for formulary addition, removal or substitution and presented numerous policy updates and medication use reviews.

As has been the trend, drug shortages once again presented a challenge with shortages ranging from antibiotics to chemotherapeutics to vasopressors to even IV fluids. On average of 10-20 drugs at any given time were on shortage with the potential to impact care provided at LVHN. Pharmacy staff worked to identify potential patient populations affected, identify and secure therapeutic alternatives, provide timely education on new products, and ensure appropriate systems were instituted to minimize potential safety issues that drug formulation and/or therapeutic alternatives might pose. As we enter our third year of EPIC, pharmacy continues to identify and work collaboratively with the EPIC team to help ensure optimized drug and order set builds.

Joining the efforts of our nursing and provider colleagues, LVHN pharmacists have been increasingly focused on patient medication counseling prior to discharge to help ensure patients better understand their medication therapy with goals to improve outcomes and prevent readmission. Likewise, a new pharmacy consult service was implemented to provide comprehensive medication reviews to geriatric trauma patients. Beyond inpatient efforts, LVHN pharmacists provide service to numerous outpatient clinics including a children’s complex care clinic, pediatric cystic fibrosis clinic, pediatric hematology/oncology clinic, adult infectious diseases clinic and assist in the management of a growing number of medication research trials. Moreover, pharmacists have expanded their ambulatory services by augmenting community care coverage of geriatric patients. Here, pharmacist interventions, including home visits and medication reviews, have exceeded $7,000 in cost avoidance in the first 6 weeks of the program.

LVHN pharmacy’s strive for improved pharmaceutical care is reflected in its own staff’s desire to improve. LVHN commands a high percentage of a very distinct group of pharmacy professionals. These pharmacists are on the leading edge of patient care. The total number of certified pharmacists through the Board of Pharmacy Specialties in Pennsylvania is 992. LVHN has 33 certified pharmacists on staff, representing 3.3% of the state. Within the Board of Pharmacy Specialties 30 of our 33 certified pharmacists are Board Certified Pharmacotherapy Specialists (BCPS). The total number of BCPS pharmacists in the state of Pennsylvania is 670; therefore, LVHN represent 4.5% of the state’s BCPS pharmacists.

At LVH–Cedar Crest, several new pharmacists have joined the counseling team, and we have begun counseling patients on the transitional open-heart unit (TOHU). First visits are made the day after admission, and patients are introduced to the program and given a pamphlet explaining their medications. (Why, when, what are the ADRs?) A card with information about outpatient pharmacy services at Health Spectrum Pharmacies also is provided. Pharmacists write the PILL line phone number on patients’ white boards so they know what number to call with questions. A pharmacist monitors the PILL line Monday–Friday, 8 a.m.–4 p.m. and returns all messages within 24 hours. Pharmacists then make visits on the second day and as needed after that. HCAHPS scores have continued to improve since the program’s inception. Monthly scores are above or near goals, and year-to-date averages are rising as well.

The LVH–Muhlenberg inpatient pharmacy also is focused on improving the “Communication About Medications” domain of HCAHPS. In addition to pharmacists visiting patients, we have reached out to our volunteers to develop a point person to greet patients and explain the importance of an accurate home medication list. Volunteers inform patients about Health Spectrum Pharmacy Services’ ability to deliver discharge medications right to their rooms prior to discharge, and offer that an inpatient pharmacist is available to stop by to answer questions about medications. Volunteers are excited to work with pharmacy, and have been meeting with patients since March 2016. The PILL line is also available at LVH–Muhlenberg. While we know we are not the only departments trying to make strides in this domain, we are glad to be part of the team helping to improve our patients’ satisfaction with LVHN. The new tower at Muhlenberg has also kept us busy, we added new drugs to our stock, and educated pharmacists and technicians on common orders for expectant mothers and newborns.
TECHNOLOGY

Since July 2016, the inpatient pharmacies have implemented 12 Pyxis Medstation™ 4000 systems in various patient care areas, and three Pyxis™ Anesthesia 4000 systems in hospital operating rooms and procedural areas at LVH–Cedar Crest, LVHN–Tilghman, and LVH–Muhlenberg. Having these systems in place in these areas will help maximize medication safety, security and workflow. Through a combination of innovative hardware and software capabilities, the systems help support hospital compliance efforts with The Joint Commission and regulatory requirements for secure medication management.

Along with Pyxis 4000 systems, we also continued to roll out Codonics Safe Label Systems™ throughout operating rooms and procedural areas. Codonics Safe Label System is a complete solution that improves patient safety and labeling compliance in operating rooms (OR) or anywhere syringes are prepared. It prints full-color labels including a 2-D barcode that can be enabled for electronic documentation of medication in patients’ health or anesthesia records. This helps reduce common drug errors made in the OR during medication preparation and administration. We added seven Codonics printers in the LVHN–Tilghman OR areas this past year.

Another project the team at Cedar Crest is currently working on is implementation of DoseEdge in our IV room. DoseEdge, a Pharmacy Workflow Manager system, is an enterprise solution that automates the process of routing, preparing, inspecting, tracking and reporting on IV doses. This is the first true technology system we are introducing to our IV room workflows that will utilize bar-code scanning and preparation photos to verify accuracy of the preparation. This system will help to promote safety, reduce waste and enhance productivity. The go-live for this system is set for early fall 2017.

Lastly, our SwissLog robots located at both LVH–Cedar Crest and LVH–Muhlenberg have been implemented for 10 years or more. We are in the process of working with SwissLog to update some of our equipment so we can guarantee longer life of our dispensing robots. This project will take place over the next three years.
MEDICAL SUPPLIES DIVISION

Our medical supplies division assists patients with items such as Jobst® vascular garments, diabetic supplies, post-mastectomy products, and wound, ostomy and breastfeeding supplies. As a Board of Certification/Accreditation (BOC)-accredited facility, our certified fitters ensure our patients’ orthotic products fit properly.

BILLING AND ACCOUNTS RECEIVABLE

The billing department of Health Spectrum Pharmacy Services consists of five dedicated employees who have taken ownership of billing and collection responsibilities. The past fiscal year has been the strongest to date. Using cash collections as a barometer for success, the billing department has not disappointed. This year the billing department collected 75 million dollars in receivables. Another nationally accepted standard for measurement is average DSO (days sales outstanding). In this category, the department falls below the national average for this business type. Home infusion DSO is currently at 52.13 with industry average between 84 and 88. Retail, which includes HME (home medical equipment), is as low as 6.59 at LVH–Cedar Crest and as high as 21.82 at LVH–17th Street. There is no published industry average for this type of hybrid combination of retail and HME, but compared to what we know about HME, it also falls below industry average.
COMMUNITY CARE TEAM – POPULATION HEALTH

Over the past year, the population health clinical pharmacists have moved from a practice-based model to a centralized model in order to enhance access and be successful with our many initiatives. We have been welcomed into our new spaces at Health Spectrum Pharmacy–Cedar Crest and Muhlenberg Express Care. These centralized locations are easy to access and patient-familiar, which allow for continued face to face, telephonic and video encounters.

We continue to provide comprehensive medication management to high-risk patients with chronic conditions such as diabetes, heart failure and COPD. Our clinical interventions between Jan. 1, 2016 and Feb. 28, 2017 showed an avoided health care cost of approximately $659,000. These interventions include managing an untreated diagnosis, reducing duplication of therapy, discontinuing drugs no longer indicated, adjusting doses, and preventing or managing an adverse drug event. In fiscal year 2017, our 2.8 FTE clinical pharmacists received 1,013 referrals and initiated 2,738 patient outreach encounters, both as face-to-face appointments and over the phone. An additional FTE was recently approved, and we are happy to welcome Jen Cicconetti to our team.

In addition to our referral-based work from providers and colleagues, our team is now providing insurance-based medication therapy management (MTM) to qualifying Highmark Medicare Advantage patients as part of a pilot. Selection for enrollment is based on specific criteria from the insurance company (i.e., number of medications prescribed, specific disease states and total drug expenditures). These patients are offered a comprehensive medication review (CMR) in-person, via telephone or through video conferencing. Clinical pharmacists work closely with providers and, unlike insurance companies, have access to patients’ charts to review allergies, progress notes, lab work, consults from specialists, etc. MTM may result in adjusting medications to reach therapy goals, discontinuing unnecessary medications to decrease pill burden, managing drug-drug and/or drug-disease interactions, adding a medication to meet evidence-based quality metrics, ensuring vaccinations are up-to-date, etc. A total of 24 patient MTM encounters have been completed since May 2017.

With the assistance of inpatient pharmacy leadership, clinical pharmacy services have now expanded as part of the CCT’s Geriatric Workforce Enhancement Program (GWEP) pilot. Pharmacy services have been approved by the GWEP grant for fiscal year 2018 due to success of the pilot, and we look forward to continued collaboration.
STRATEGIC PLAN FOR FISCAL YEAR 2018

Pharmacy Services remains driven to do more in support of our mission to heal, comfort and care for the people of our community. To succeed, we continue to be guided by the Triple Aim, a framework that helps us produce better health, better care and better cost.

Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS)
- Increase pharmacist patient visibility
- Focus on Improving “medication-related scores”

DoseEdge
- Successful implementation
- Successful integration into the LVH–Cedar Crest IV room workflow

Muhlenberg Inpatient Pharmacy Cleanroom Expansion
- Expand Muhlenberg inpatient pharmacy to maintain compliance with new USP 797/800 regulations
- Continue operations during construction

Integration/Expansion
- Work with Hazleton, Schuylkill, Pocono and other new or existing entities
- Convert Schuylkill and Pocono to HealthTrust
- Complete integration work including early wins team and savings identification within established timeframes
- Redirect referrals to Health Spectrum Pharmacy Services (HSPS)

AllSpire Group Purchasing Organization
- Utilize HealthTrust and AllSpire Pharmacy Collaborative to drive savings
- Utilize AllSpire Pharmacy Clinical Collaborative meetings to continue sharing best practices

Specialty Pharmacy
- Expand Specialty Pharmacy into oncology
- Relocate to office space at HSPS-Cedar Crest and onboard two FTEs
- Increase gross margin income over fiscal year 2017 by $250,000

LVH Conversion to Rural Hospital Designation and Expansion of 340B
- Engage a consultant and develop a plan
- Hire the 340B team
- Implement the plan by Jan. 1, 2018

Expansion of Retail Pharmacies
- HSPS–Pocono
- HSPS–Hazleton
- HSPS–17th and Chew

Wholesaler Conversion
- Convert from AmerisourceBergen to Cardinal
- Generate $4 million in savings per year for the next four years
- Implementation on July 11, 2017

Children’s Hospital
- Expansion, relocation and consolidation to centralize inpatient pediatric services within Jaindl Pavilion including a complete renovation of the fifth floor of Jaindl Pavilion to accommodate pediatric inpatient units located in Pool 4B and 4C units.
- Design a full-service pediatric pharmacy with unit dose and clean room capabilities to service the Children’s Hospital

Future Scan 2017-2022
- Utilize the American College of Healthcare Executives tool Future Scan to spur conversation and strategic thinking about the future
- Invite senior leadership to join pharmacy management and discuss their area of expertise from a network perspective
PHARMACY SERVICES STAFF

Inpatient Pharmacy – LVH–Cedar Crest, LVH–17th Street and LVHN–Tilghman

- Total full-time employees (FTEs) = 122.7
  - Pharmacists = 48.4
  - Clinical specialists = 5.5
  - Pharmacy technicians = 50.5
    (57 certified pharmacy technicians)
  - Additional staff = 17
  - Pharmacy interns = 1.3 (11 interns)

Inpatient Pharmacy – LVH–Muhlenberg

- Total FTEs = 31.88
  - Pharmacists = 12.12
  - Pharmacy technicians = 12.95
    (17 certified pharmacy technicians)
  - Additional staff = 6.16
  - Pharmacy interns = 0.65 (6 interns)

Inpatient Pharmacy – LVH–Hazleton

- Total FTEs = 20.3
  - Pharmacists = 9.3
  - Pharmacy technicians = 11
    (10 certified pharmacy technicians)

Inpatient Pharmacy – LVH–Schuylkill

- Total FTEs = 22.54
  - Pharmacists = 11.1
  - Pharmacy technicians = 9.4
    (6 certified pharmacy technicians)
  - Additional staff = 2
  - Pharmacy interns = 0.04 (4 interns)

Inpatient Pharmacy – LVH–Pocono

- Total FTEs = 36.94
  - Pharmacists = 18.9
  - Pharmacy technicians = 16
    (9 certified pharmacy technicians)
  - Additional staff = 2
  - Pharmacy interns = 0.04 (4 interns)

Outpatient Infusion Centers (MPA/MPS/MPB)

- Total FTEs = 12.86
  - Pharmacists = 7.55
  - Pharmacy technicians = 5.31
    (5 certified pharmacy technicians)

Health Spectrum Pharmacy Services – Retail Pharmacy Division

- Total FTEs = 44.91
  - Pharmacists = 14.82
  - Pharmacy technicians = 26.4
    (18 certified pharmacy technicians)
  - Pharmacy interns = 0.09 (9 interns)
  - Medical supply specialists = 3.6

Health Spectrum Pharmacy Services – Specialty Pharmacy Division

- Total FTEs = 3
  - Pharmacists = 1
  - Pharmacy technicians = 2
    (2 certified pharmacy technicians)

Health Spectrum Pharmacy Services – Infusion Division

- Total FTEs = 16.4
  - Pharmacists = 4
  - Pharmacy technicians = 2.1
    (1 certified pharmacy technician)
  - Nurse clinicians = 2
  - Pharmacy interns = 4 (4 interns)
  - Delivery technicians = 3.9
  - Additional staff = 4

Health Spectrum Pharmacy Services – Patient Billing

- Total FTEs = 7.1

BOARD CERTIFIED PHARMACISTS

33

PHARMACISTS CERTIFIED TO ADMINISTER IMMUNIZATIONS

60

CERTIFIED PHARMACY TECHNICIANS

120
COMMUNITY ACTIVITIES

- Adopted Christmas family
- Allentown Rescue Mission
- American Diabetes Association
- Animals in Distress
- Awsom (Animal Welfare Society of Monroe)
- Bethlehem Medical Reserve Corps
- Big Brothers Big Sisters
- Cub Scout Pack 76, Nazareth
- Cetronia Ambulance volunteer
- Food pantry at Jordan Lutheran Church (serving local Parkland families in need)
- Girls on the Run Lehigh Valley
- Jordan Lutheran Church Call Committee
- Lehigh Valley Special Olympics Polar Plunge Fundraiser
- LVHN Community Flu Campaign 2016
- LVHN Senior Expo
- Meals on Wheels
- Michael J. Fox Foundation
- Musikfest
- Nazareth Area Food Bank
- Operation Christmas – Rivers of Life Seibert Church
- Outreach/Street Medicine
- Parkland Boys Basketball Booster Club
- Pediatric Cancer Foundation of Lehigh Valley bake sale
- Perfect Fit (YWCA affiliation) of Allentown
- Sanctuary at Haafsville
- Snack stand donations this year included the adopted Christmas family and Cookies for the Troops (Girl Scouts)
- Stack the Pack – school supplies
- The Truth House
- Upper Macungie Township Parks & Recreation Board
- Via Marathon volunteer

DEPARTMENT COMMUNITY/VOLUNTEER SERVICE

WALKS/RUNS PARTICIPATION

- Jaindl's leukemia and lymphoma festival on the farm
- 5K walk/run
- March of Dimes Walk
- Jaindl's leukemia and lymphoma festival on the farm
- Relay for Life
- Save the Wild Horses 5K
- Via Marathon

AWARDS/NOMINATIONS

- Leroy Kromis – Chairman, Lehigh Valley Institutional Review Boards 1 and 2
- Rhonda Thomas – Member at large, Mid Eastern Chapter, Pennsylvania Society of Health Systems Pharmacy
- Jennifer Cicconetti – Secretary, Mid Eastern Chapter of the Pennsylvania Society of Health Systems Pharmacy
- Jarrod Kile – Co-Chair, Antimicrobial Stewardship Committee, Credentialed within the Department of Medicine and USF Associate Professorship Designation
- Kelly Robb – Member, Education Committee, National Home Infusion Association
- Misty Davis - Friends of Nursing award
- Joseph Ottinger – Friends of Nursing nominee
PRESENTATIONS

Aubrey Goertel
Vaxchora, education to LVPG Nursing Staff, Sept. 20, 2016
Pulmonary Rehab provided education on medications and inhaler technique, Sept. 22, 2016
Vaxchora, education and background to LVPG Infectious Disease Physicians to establish use in the Keystone Travel Clinic, Nov. 1, 2016
Geriatrics/Beers Criteria Review to NHCLV providers and residents, Nov. 24, 2016
Insulin Best Practices of Safety Standards and Policies for Safe Use of Insulin within the hospital, Dec. 9, 2016
Hepatitis C overview of disease and treatment modalities, Internal Medicine, January, 2017
Opportunistic Infections in HIV Patients, case review and newly diagnosed HIV patient and OIs encountered, June 2017
Presentation of Final Research Project at Eastern States in Hershey, Pa., May, 2017
Presentation of Final Research Project at Night of the Residents MEPSHP, May 2017

Breana Goscicki
The Role of High Dose IL-2 in Renal Cell Carcinoma, Sept. 21, 2016
Merthotrexate Induced Neurotoxicity in ALL, Jan. 17 2017 – pediatric oncologists, Jan. 16, 2017 – pharmacists
Medications for Constipation at NHCLV, Feb. 20, 2017
Antimicrobials II Lecture at DeSales, April 27, 2017
TTA in Adult Oncology Pts w/Fever, May 2, 2017 – Eastern States, May 18, 2017 – Night of the Residents
Opportunistic Infections in HIV Patients (with Aubrey Goertel), June 14, 2017
Pediatric Order Entry Resident Presentation, June 20, 2017 – to pediatric residents

Lauren Grantz
Specialty Pharmacy, Wilkes University, April 25, 2017.

Kristin Held Wheatley
Corticosteroids, NSAIDs, and antihistamines – Pediatric Medical Residents PediaPred lecture series, Sept. 14, 2016.
Antivirals, antiparasitics, and antifungals – Pediatric Medical Residents PediaPred lecture series, April 12, 2017
ACPE Pharmacy Presentation – Therapeutic Drug Monitoring in Patients with Cystic Fibrosis – Focus on Aminoglycosides, June 28, 2016
Viral Infections in HCT, Beyond Fundamentals of Hematopoietic Cell Transplantation training course, American Society for Blood and Marrow Transplantation Annual Meeting, Orlando, Fla., Feb. 22, 2017

Jarrod Kile
July 25, 2016, Internal medicine intern survival series-Antimicrobial stewardship, Nov. 1, 2016, FP grand rounds
May 19, 2017, FP grand rounds, Stump the ID chump – pharmacist presentations
June 5, 2017, Antimicrobial Stewardship DeSales PA program

Jason Laskosky
Management of Intracerebral Hemorrhage – Pharmacist Perspective, Nov. 17, 2016
TPA in the Management of Severe Frostbite, Dec. 29, 2016
Update/review of the newly published 2016 sepsis guidelines, March 3, 2017
Update on TPA for PEA/PE in cardiac arrest, May 11, 2017
Update on Recent literature in ICU/ED (Management of Calcium Channel Blocker Poisoning in Adults, Corticosteroids for Prevention of Post-Extubation Stridor, Lipid Rescue), May 18, 2017
Joseph Ottinger
Pain Management review presented to dental residents
Antibiotic Review presented to dental residents.
New Oral Anticoagulants – Present and Future Challenges presented at a Family Medicine Grand Rounds
Medication Safety presented to USF students as part of Medication Safety Forum
Philosophy and the Checklist Approach to Teaching presented to the clinical specialist

WRITTEN MATERIALS
Part 1 of CHF Home study module for staff education, 0.2 CEUs attached
Part 2 of CHF Home study module for staff education, 0.2 CEUs attached

Jessica Price
Treatment of Chronic Pain and Agitation in Patients with Substance Abuse, Presentation: 1.0 contact hour CE accredited by American Nurses Credentialing Center, Greater Lehigh Valley Chapter #117 of the Academy of Medical Surgical Nurses, Sept. 20, 2016
Treatment of Chronic Pain and Agitation in Patients with Substance Abuse, Presentation: Fleming Trauma Lecture Series, Lehigh Valley Health Network, Feb. 6, 2017
Short and Sweet: Concentrated Insulins and Safe Transitions, Presentation: ACPE 0.5 contact hour, March Madness 2017, Educational Symposium; Conshohocken, Pa., March 17, 2017
Concentrated Insulins and Safe Transitions. Presentation to Hospitalist physicians, Internal Medicine residents, and Family Medicine residents Lehigh Valley Health Network, Allentown and Bethlehem, Pa., Feb. 21, 2017; Feb. 22, 2017; March 1, 2017; and April 26, 2017
Short and Sweet: Concentrated Insulins and Safe Transitions, Presentation to Pharmacists, Lehigh Valley Health Network, Allentown and Bethlehem, Pa.; March 22, 2017; April 28, 2017

PUBLICATIONS
Kristin Held Wheatley
Wheatley KH. Viral Infections (HSV, VZV, CMV, BK, EBV, Adenovirus, HHV6, Hepatitis and Respiratory Viruses) Chapter, Beyond Fundamentals of Hematopoietic Cell Transplantation training course, 2017

POSTERS
Breana Goscicki
Time to Antibiotic Administration in Adult Oncology Patients with Fever that Present to the ED and Infusion Centers – Las Vegas, Nev., ASHP Midyear, December, 2016

Kristin Held Wheatley
Mangla S, Wheatley KH, Villalobos-Fry T. Rate of detection of multiple organisms with multiplex PCR gastrointestinal panel in pediatrics. ID Week 2016 Meeting, New Orleans, La., October, 2016

JOURNAL CLUB
Breana Goscicki
Liraglutide and CV Outcomes in Type 2 Diabetes, Oct. 6, 2016
Idelalisib or placebo in combination with bendamustine and rituximab in patients with relapsed or refractory CLL, April 10, 2017

CLINICAL PEARLS
Aubrey Goertel
Vaxchora, Sept. 20, 2016
Comparison of Cardiovascular Outcomes between celecoxib, naproxen and ibuprofen, January, 2017
Lithium Intoxication, January, 2017
Breana Goscicki
SGLT2 Inhibitor Effects on Kidneys Mini Pearl, July 22, 2016
Lyme Disease Meningitis Mini Pearl, Aug. 8, 2016
FDA Approval of Generic Tamiflu Mini Pearl, Aug. 5, 2016
Review of MS and Ocrevus, April 21, 2017
Miscellaneous Pearls for Staff
Strategies to Improve Communication, Oct. 25, 2016
Geriatric Prescribers – Dec. 15, 2016
Pulmonary Hypertension – Dec. 20, 2016