Annual Report
Fiscal Year 2018

Department of Pharmacy Services
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Message from the Pharmacy Director

It is my pleasure to present the 2018 Annual Report for Princeton Baptist Medical Center Department of Pharmacy Services. The report highlights the outstanding work of the Central and Clinical Pharmacy Teams. We had a fantastic year of cost savings initiatives. Daily accomplishments have translated into measurable metrics that led our facility to a “B” Leapfrog score and successful Joint Commission, CMS, and SOX financial audit surveys.

In 2018, Princeton Pharmacy chose the phrase: MOVING PHARMACY FORWARD to signify physical and leadership changes. The highpoint was construction of a new 500-square-foot IV room with separate areas for gowning/garbing, hazardous drugs, chemotherapy, and sterile/non-sterile compounding. From March until August 2018, pharmacy staff endured a cramped IV “area” with only a barrier isolator for sterile compounding. Construction crews put in a new air handler, venting and terazzo floor to optimize negative/positive pressure monitoring in compliance with USP <795>, enhanced <797>, and upcoming <800> guidelines. The state-of-the-art room opened in early September.

Pharmaceutical shortages made 2018 a challenging year. IV Fluids and Opioid (Fentanyl, Morphine, Hydromorphone) backorders stretched staffing resources. To facilitate standardized response, a twice weekly pharmacy shortage meeting consisting of Pharmacy Leadership, the on-call clinical pharmacist, and the inventory management specialist was formed. These individuals worked hard to communicate rapidly changing shortage information via a secure Intranet site, Top 10 critical shortage/alternative list, targeted physician emails, and pMD secure text messaging. Based on his efforts, Brandon Roberts, Inventory Management Specialist received the Alabama Society of Health System Pharmacists (AISHP) Technician of the Year Award at the October ALSHP Annual Clinical Meeting.

Auburn and Samford Colleges of Pharmacy sent seven (7) IPPE students and forty-five (45) APPE students to Princeton Baptist to complete challenging rotations in Institutional Pharmacy, General Medicine, Surgical Critical Care and Medical Critical Care. Ten (10) students returned for additional specialty rotations. Two Clinical Pharmacy Specialists opened new rotations: Megan Autrey, PharmD tutored students in medication reconciliation and transitions of care while Natalie Tapley, PharmD, BCPS mentored learners in antimicrobial stewardship. Sarah Blackwell, PharmD, BCPS, BCCCP was nominated for the Princeton Circle of Influence Award in Service. I was honored to win the Princeton Circle of Influence Transparency Award.

Fostering the Accountable, Reliable, & Transparent A.R.T. of Safety involved Medication Safety Committee scorecards, Hospital Improvement Innovation Network (HIIN) Adverse Drug Event trends in Hypoglycemia, Opioid, and Anticoagulation, leadership rounds, pharmacy huddle, medication event drill downs, and “Good Catches”. Six Clinical Pharmacy Specialists and three Pharmacy Residents documented over $8.8 million in FY18 cost avoidance recommendations.

These accomplishments would not be possible without the commitment and personal dedication of the Princeton Baptist Medical Center pharmacy staff members. Each team member showed for their commitment to the pharmacy profession and dedication to the care of Princeton Baptist Medical Center patients. We look forward to another rewarding chapter in 2019!

Best Regards,

Helen E. McKnight, PharmD, DPLA, MBA
Pharmacy Department Overview

The pharmacy leadership team oversees 37 FTEs, which includes staff pharmacists, clinical pharmacy specialists, pharmacy residents, and pharmacy technicians. The team is jointly responsible for insuring regulatory compliance, strategic planning, budget management, scheduling, staff development and accountability, clinical and operational policies and procedures, coordinating patient care activities, medication and patient safety activities, and human resources practices.

Mission

Brookwood Baptist Health Pharmacy Mission is to extend the healing ministry of Christ through holistic, people-centered health care by the core values of Quality, Innovation, Service, Integrity, & Transparency.

Vision

➢ The department will be recognized for the highest quality of pharmaceutical care and compassionate, Christian service
➢ We will provide clinical and operational service, professional leadership, and educational excellence that exceed customer expectations
➢ We will move pharmacy health forward through innovative use of technology, people and passion
➢ Our reputation will be one of collaborative teamwork, employee satisfaction, and superior patient outcomes

Goals

➢ To move pharmacy health forward through people, passion, and vision
➢ To improve patient outcomes through the highest pharmaceutical care standards
➢ To use accountable, reliable, and transparent approaches to medication safety and just culture
➢ To provide a collaborative work environment among health profession disciplines
➢ To prepare the next generation of pharmacy students and residents for excellence through education and preceptorship
➢ To foster a teaching environment for the next generation of healthcare providers
➢ To integrate innovative technology advances that improves drug efficiency, safety, and delivery

<table>
<thead>
<tr>
<th>YTD18</th>
<th>AVE/DAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily Statistics</td>
<td></td>
</tr>
<tr>
<td>Total Adult Patients</td>
<td>238</td>
</tr>
<tr>
<td>Inpatient Admissions</td>
<td>56</td>
</tr>
<tr>
<td>Discharges</td>
<td>38</td>
</tr>
<tr>
<td>Emergency Room Visits</td>
<td>112</td>
</tr>
<tr>
<td>Admits from ED</td>
<td>32</td>
</tr>
<tr>
<td>Readmissions (within 30 days)</td>
<td>5</td>
</tr>
<tr>
<td>Active Pharmacy Consults</td>
<td>49</td>
</tr>
<tr>
<td>Number of Vancomycin</td>
<td>32</td>
</tr>
<tr>
<td>Number of Warfarin</td>
<td>8</td>
</tr>
<tr>
<td>Number of AG</td>
<td>1</td>
</tr>
<tr>
<td>Other</td>
<td>4</td>
</tr>
<tr>
<td>Number of TPNs</td>
<td>6</td>
</tr>
<tr>
<td>Number of Chemo doses</td>
<td>1</td>
</tr>
</tbody>
</table>
Pharmacy SWOT 2018

A Strengths–Weaknesses–Opportunities–Threats (SWOT) analysis is a useful graphical tool:

- Prioritization of threats and opportunities are balanced against strengths and weaknesses to help determine whether the Pharmacy is robust or frail to its internal and external environment
- Internal Factors: Pharmacy’s strengths and weaknesses
- External (that is, environmental) Factors: Pharmacy’s opportunities and threats

### STRENGTHS

<table>
<thead>
<tr>
<th>Faith-based values</th>
<th>Technician turnover rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical pharmacy program</td>
<td>Number of FTEs (LEAN)</td>
</tr>
<tr>
<td>9 residency trained pharmacists</td>
<td>Evening shift workload (RPh/Tech)</td>
</tr>
<tr>
<td>7 board certified Clinical Pharmacy Specialists</td>
<td>Internal staff culture (RPh-Tech relationships)</td>
</tr>
<tr>
<td>3 PGY1 residents</td>
<td>USP &lt;795&gt; compliance</td>
</tr>
<tr>
<td>57 pharmacy students/year</td>
<td>Infectious disease support</td>
</tr>
<tr>
<td>Established residency program</td>
<td>Communication ease with providers</td>
</tr>
<tr>
<td>Integrated code response</td>
<td>Internal policy updates/communication</td>
</tr>
<tr>
<td>Balanced scorecard metrics</td>
<td>30-day readmission rate</td>
</tr>
<tr>
<td>Process improvement program</td>
<td>SSI/HAI rates</td>
</tr>
<tr>
<td>Antimicrobial Stewardship program</td>
<td>HCAHPS scores</td>
</tr>
<tr>
<td>Budget management</td>
<td>ED barcode compliance</td>
</tr>
<tr>
<td>ALSHP institutional membership</td>
<td>Lack of storage organization/space</td>
</tr>
<tr>
<td>Professional development funds</td>
<td>Staff Pharmacist handoffs and transitions</td>
</tr>
<tr>
<td>Inventory initiatives</td>
<td>Uncoordinated student program</td>
</tr>
<tr>
<td>Diversion management</td>
<td>Uncoordinated OR workflow/communication</td>
</tr>
<tr>
<td>EPIC initiatives (CPOE review time)</td>
<td>IV room renovation in compliance w/USP &lt;800&gt;</td>
</tr>
</tbody>
</table>

### WEAKNESSES

<table>
<thead>
<tr>
<th>Technician turnover rate</th>
<th>Number of FTEs (LEAN)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evening shift workload (RPh/Tech)</td>
<td>USP &lt;795&gt; compliance</td>
</tr>
<tr>
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<tr>
<td>Internal policy updates/communication</td>
<td>Communication ease with providers</td>
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<tr>
<td>30-day readmission rate</td>
<td>SSI/HAI rates</td>
</tr>
<tr>
<td>ED barcode compliance</td>
<td>HCAHPS scores</td>
</tr>
<tr>
<td>Lack of storage organization/space</td>
<td>ED barcode compliance</td>
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<tr>
<td>Staff Pharmacist handoffs and transitions</td>
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<td>Uncoordinated student program</td>
<td>Uncoordinated OR workflow/communication</td>
</tr>
</tbody>
</table>

### OPPORTUNITIES

<table>
<thead>
<tr>
<th>Outpatient infusion (HF clinic, antibiotics)</th>
<th>Diversion/opioid Shortage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crash cart move to Materials Management</td>
<td>Lack of PharMEDium Alabama license</td>
</tr>
<tr>
<td>Discharge counseling</td>
<td>Wholesaler drug shortages</td>
</tr>
<tr>
<td>P&amp;T medical resident participation</td>
<td>Pharmaceutical costs</td>
</tr>
<tr>
<td>Electronic consignment inventory system</td>
<td>Limited technician shortages</td>
</tr>
<tr>
<td>I PASS the BATON implementation</td>
<td>Resources/staff</td>
</tr>
<tr>
<td>Medication reconciliation pharmacy extenders</td>
<td>Budget</td>
</tr>
<tr>
<td>Increased number of pharmacy residents</td>
<td></td>
</tr>
<tr>
<td>OR pharmacist/satellite</td>
<td></td>
</tr>
<tr>
<td>Streamline shortage management</td>
<td></td>
</tr>
<tr>
<td>Samford faculty (Psychiatry, ED, OR)</td>
<td></td>
</tr>
<tr>
<td>United Ability transporters</td>
<td></td>
</tr>
<tr>
<td>Cath lab inventory optimization</td>
<td></td>
</tr>
<tr>
<td>ER culture review process</td>
<td></td>
</tr>
<tr>
<td>Preceptor scholarship plan</td>
<td></td>
</tr>
<tr>
<td>Tech Career Ladder</td>
<td></td>
</tr>
</tbody>
</table>

### THREATS

<table>
<thead>
<tr>
<th>Diversion/opioid Shortage</th>
<th>Lack of PharMEDium Alabama license</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wholesaler drug shortages</td>
<td>Pharmaceutical costs</td>
</tr>
<tr>
<td>Pharmaceutical costs</td>
<td>Limited technician shortages</td>
</tr>
<tr>
<td>Resources/staff</td>
<td>Budget</td>
</tr>
</tbody>
</table>
Pharmacy Department Structure

Director of Pharmacy
Helen McKnight

Clinical Pharmacy Specialists
- Sarah Blackwell, Medical Critical Care, PGY1 Residency Director
- Mary Katherine Stuart, Cardiology
- Natalie Tapley, Surgical Critical Care, Infectious Disease
- Kenda Germain, Internal Medicine
- Hillary Holder, Neuro Critical Care
- Megan Autrey, Transition of Care, Palliative Care

Auburn Faculty Members
- Jessica Starr Kim, Staff Med
- Nathan Pinner, Staff Med

Pharmacy Manager
TBD
- Pharmacy Supervisor, Rebekah Neal
- Pharmacy Supervisor, Linda Howard
- Staff Pharmacists
- Pharmacy Technicians

Inventory Management Specialist
Brandon Roberts
Meet Our Pharmacy Team

Pharmacy Supervisors

Rebekah Neal, RPh  Linda Howard, RPh

Staff Pharmacists

Lauren Bradford, PharmD  Mandy Burleson, PharmD  Greg Gotshall, PharmD  Anne Hession, PharmD

Laney Savage, PharmD  Matt Skelton, PharmD  Molly Weinstock, PharmD  Michael Woodard, PharmD

Not pictured:
George Whorton, RPh

Marissa Rozman, PharmD,
Meenu Kaur, RPh,
Lauren Robinson, PharmD
Pharmacy Technicians

*Left to right:* Wilhelmina Jones, Marie Arnold, Marcita Harris, Whitney Kutsch, Kristy Sanders, Diane Griffin

*Not pictured:* Ariel Banks, LaKeitha Dunham, Patricia Scott, Janay Johnson, Shanice Walker, Indeeya Webster, Christina Latham, Calvin Jackson

Clinical Pharmacy Specialists

*Left to right:* Back row: Sarah Blackwell, Kenda Germain, Megan Autrey
Front row: Hillary Holder, Natalie Tapley, Mary Katherine Stuart
Inventory Management

Goals
➢ Ensure adequate stock of formulary medications
➢ Optimize patient care through inventory control
➢ Budget stewardship

2018 Activities
• Compliance with Tenet National Formulary
• Therapeutic interchanges saving over $22,000
• Drug cost monitoring to capture accurate charges
• Outsourcing strip packing saving ~$14,000
• Ongoing inventory management with BD CareFusion Pharmogistics™
  o Quarterly review of usage levels to optimize MIN/MAX levels
  o IV room added resulting in a decrease in on-hand IV medications by over $8,000
• NDC substitution program
  o Program monitors at risk medications that may experience price fluctuations due to contract changes or shortages in the market

Future Goals
• Reduce pharmaceutical spend by 5%
• Use Pharmogistics to manage inventory
• Increase the number of inventory turns to 12
## Cost Saving Initiatives

<table>
<thead>
<tr>
<th>Initiative</th>
<th>YTD Cost Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fosfomycin Medication Use Evaluation</td>
<td>$28,000</td>
</tr>
<tr>
<td>Invega Reimbursement Program</td>
<td>$30,000</td>
</tr>
<tr>
<td>Isoproterenol IV Room Compounding</td>
<td>$160,00</td>
</tr>
<tr>
<td>Inflectra Cost Analysis</td>
<td>$71,000</td>
</tr>
<tr>
<td>Indomethacin Suppository Pricing Correction</td>
<td>$38,000</td>
</tr>
<tr>
<td>MedSource Free Drug Replacement</td>
<td>$53,000</td>
</tr>
<tr>
<td>Safecor Compounding for UD cups/tablets</td>
<td>$14,000</td>
</tr>
<tr>
<td>Pyxis/Pharmogistics Optimization</td>
<td>$89,000</td>
</tr>
<tr>
<td>Formulary Standardization</td>
<td>$75,000</td>
</tr>
</tbody>
</table>
IV Room Renovation

From March 2018 to August 2018, pharmacy personnel endured construction crews, dust and drills as the pharmacy’s 500 square foot IV room was transformed into a state-of-the-art facility. On September 4, 2018, the IV crew left their temporary barrier isolator behind and began working in the new space.

Clean Room Features

- USP <797> and <795> compliant construction
  - Positive pressure sterile compounding admixture area
  - Negative pressure chemotherapy compounding
  - Negative pressure hazardous storage area
- High air exchange and filtration control to reduce particulates
- No touch door access
- LED lighting
- Seamless floor construction
- Medium and high risk personnel validation
- EPIC Dispense Prep barcode scanning of compounded ingredient
- EPIC barcode checking of final admixture
- Electronic batch compounding records
- Electronic documentation of cleaning, pressure and temperature values
- Pass through refrigerator
Hospital Improvement Initiative Network (HIIN)

- **Goal:** To reduce all-cause inpatient harm by 20 percent by 2019
- **Data collection involves chart review and root cause analysis for:**
  - INR >5 for any patient on warfarin
  - Naloxone administration for any patient receiving an opioid
  - Blood glucose level <50 for randomly selected patients on insulin

### Hospital Improvement Innovation Network (HIIN) Score Card

<table>
<thead>
<tr>
<th>Facility</th>
<th>Measure</th>
<th>Baseline Period</th>
<th>Baseline (Rate in %)</th>
<th>Threshold (20% reduction)</th>
<th>Target (40% reduction)</th>
<th>State Average</th>
<th>National Average</th>
<th>2017 Final (%)</th>
<th>2018 YTD (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Princeton</td>
<td>ADE Anticoagulant</td>
<td>7/1/2015 to 6/30/2016</td>
<td>3.88</td>
<td>3.11</td>
<td>2.33</td>
<td>3.97</td>
<td>3.72</td>
<td>4.2</td>
<td>3.2</td>
</tr>
<tr>
<td>Princeton</td>
<td>ADE Hypo</td>
<td>1/1/2017 to 5/31/2017</td>
<td>11.15</td>
<td>8.92</td>
<td>6.69</td>
<td>11.90</td>
<td>4.25</td>
<td>13.6</td>
<td>9.2</td>
</tr>
<tr>
<td>Princeton</td>
<td>ADE Opioid</td>
<td>7/1/2015 to 6/30/2016</td>
<td>0.98</td>
<td>0.78</td>
<td>0.59</td>
<td>0.82</td>
<td>0.48</td>
<td>0.42</td>
<td>0.49</td>
</tr>
</tbody>
</table>

### Interventions
- A. Pharmacist ordered PT/INR
- B. Pharmacist follows all warfarin patients

### Future Directions
- A. Mandatory pharmacy consult
**Interventions**

A. Pharmacist-led ED medication history
B. Opioid shortage began
C. EPIC changes
   - IV auto-substitution
   - Oral opioid optimization
   - 24 hour stop-date for post-op morphine
D. Pain scales added to all opioid orders
E. Pharmacy staff education
F. Pre-operative multimodal analgesia optimized

**Future Directions**

A. Policy and procedure changes
   - Opioid dose reduction per patient request
B. Pain medications reduced in all order sets

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**Interventions**

A. Medical leave for 2 clinical pharmacists
B. Education and EPIC changes
   - Insulin admin instructions updated
   - Hospitalist education
   - BMI cutoffs removed from insulin order set
C. NPO MAR alert added
D. Mixed insulins removed
E. Department of Medicine education
F. RN education West floors
G. TPN linked to D10W infusion
H. Long-acting insulin conversion
I. Policy and procedure changes
   - Insulin pump advisory on admission and pharmacy consult
   - Correctional scale insulin reduced

**Future Directions**

A. Nutrition interruption protocol
B. Ambulatory insulin pump policy

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Hillary Holder, PharmD, BCPS

Kenda Germain, PharmD, BCPS

Megan Autrey, PharmD
# Medication Safety Metrics

<table>
<thead>
<tr>
<th>Automated Dispensing Cabinets</th>
<th>Goal</th>
<th>YTD 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Override Rate (RX Auditor)</td>
<td>&lt;1%</td>
<td>0.48%</td>
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</tbody>
</table>

## Order Verification Time

<table>
<thead>
<tr>
<th></th>
<th>Goal</th>
<th>YTD 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Medication Orders</td>
<td>&gt;67,000</td>
<td>68,275</td>
</tr>
<tr>
<td>Average Time to Verify</td>
<td>&lt;20min</td>
<td>23 min</td>
</tr>
<tr>
<td>Average Time to Verify High Priority</td>
<td>&lt;10min</td>
<td>4 min</td>
</tr>
<tr>
<td>Average Time to Administer High Priority</td>
<td>&lt;40 min</td>
<td>4 min</td>
</tr>
</tbody>
</table>

## Barcode Medication Verification

<table>
<thead>
<tr>
<th></th>
<th>Goal</th>
<th>YTD 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total # of Doses Administered</td>
<td>&gt;144,000</td>
<td>140,162</td>
</tr>
<tr>
<td>% Medications Scanned (Total)</td>
<td>≥ 95%</td>
<td>96%</td>
</tr>
<tr>
<td>% Medications Scanned (ED)</td>
<td>≥95%</td>
<td>90%</td>
</tr>
<tr>
<td>% Patient Scanned (Total)</td>
<td>≥95%</td>
<td>97%</td>
</tr>
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</table>

## Controlled Substance Discrepancies

<table>
<thead>
<tr>
<th></th>
<th>Goal</th>
<th>YTD 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total # of Controlled Substance Discrepancies</td>
<td>183</td>
<td></td>
</tr>
<tr>
<td>CS Discrepancies unresolved within 24 hours (%)</td>
<td>&lt;5%</td>
<td>19.0%</td>
</tr>
<tr>
<td># of users with &gt;5 standard deviations above mean</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td># of users with &gt;4 standard deviations above mean</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td># of users with &gt;3 standard deviations above mean</td>
<td>50</td>
<td></td>
</tr>
</tbody>
</table>

## Smart Pump Utilization (Alaris CareFusion)

<table>
<thead>
<tr>
<th></th>
<th>Goal</th>
<th>YTD 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total # of Infusions</td>
<td>13,000</td>
<td>12,634</td>
</tr>
<tr>
<td>% Guardrails Library Compliance</td>
<td>90%</td>
<td>87.7%</td>
</tr>
<tr>
<td># Cancelled Due to Alert</td>
<td>337</td>
<td></td>
</tr>
<tr>
<td># Reprogrammed Due to Alert</td>
<td>232</td>
<td></td>
</tr>
<tr>
<td># High Risk Overrides</td>
<td>61</td>
<td></td>
</tr>
</tbody>
</table>

## Medication Events Reported

<table>
<thead>
<tr>
<th></th>
<th>Goal</th>
<th>YTD 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total # MIDAS Reports</td>
<td>&gt;50</td>
<td>67</td>
</tr>
<tr>
<td>Total # with Harm (E and greater)</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

## Adverse Drug Event (HIIN-20%/40% baseline reduction)

<table>
<thead>
<tr>
<th></th>
<th>Goal</th>
<th>YTD 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excessive Anticoag w/ Warfarin - Inpatients (Rate)</td>
<td>3.11/2.33</td>
<td>3</td>
</tr>
<tr>
<td>Hypoglycemia in Inpatients Receiving Insulin (Rate)</td>
<td>8.92/6.69</td>
<td>9.1</td>
</tr>
<tr>
<td>ADE due to Opioids (Rate)</td>
<td>0.78/0.59</td>
<td>0.55</td>
</tr>
</tbody>
</table>
Transitions of Care

In March 2018, a Clinical Pharmacy Specialist established a new position on an internal medicine floor (4 West).

Goals
➢ Obtain accurate medication histories
➢ Reconcile medications on admission
➢ Provide discharge patient counseling

Daily Activities

- Attend rounds with medical staff to discuss discharge status
- Obtain medication history upon admission
- Medication reconciliation at admission and discharge
- Convert intravenous medications to oral products
- Coordinate with outpatient infusion companies for home antibiotics
- Counseling for adherence and newly prescribed medications
- Identifying appropriate patients for free nebulizer program
- Discharge counseling for patients returning home
- Serve as pharmacy resource to nurses and providers on the unit

2018 Achievements

- 545 medication histories obtained
- 204 medication lists reconciled
- 76 discharge counseling sessions

Future goals

- Post-discharge phone calls for patients with target diagnoses
- Outpatient infusion coordination for uncomplicated cellulitis and heart failure exacerbations
- Expansion of services onto other medical floors with pharmacy extenders
Emergency Medicine Program

Beginning in January 2017 the pharmacy department placed pharmacists in the Princeton Baptist Medical Center Emergency Department (ED) from 10:30 AM to 6:00 PM. In February of 2018 an additional pharmacist was hired to staff the ED from 5:00 PM to 1:30 AM.

Daily Activities

- Perform medication histories for hospital admissions from the ED
- Act as a resource for all drug information questions from nurses, physicians, and any ED staff
  - Antibiotic recommendations
  - IV/PO conversion
  - IV compatibility questions
  - Drug interaction management
  - Critical shortage management
  - Protocol education
- Pyxis assistance
- Medication procurement from central pharmacy
- Code Sepsis participation (i.e. antibiotics, fluids, labs)
- Code Stroke participation (i.e. home anticoagulant review, patient weight verification)
- Mentor rotating 4th year pharmacy students
- Warfarin counseling (i.e. indication, side effects, INR monitoring, dietary considerations, and drug interactions)

2018 Achievements

- Established a new pharmacist position that extended pharmacist presence by 40 hrs/week
- Created an system-wide antidote inventory list to ensure access to emergency medications
- Initiated active participation in all Code Sepsis events to ensure compliance with CMS requirements

Future Goals

- Coverage in the ED 24 hours a day for medication history taking
Antimicrobial Stewardship

Daily Activities

- Assist with empiric antimicrobial selection
- Target therapy to specific pathogens
- Optimize antimicrobial dosing
- Shorten duration of antimicrobials
- Convert intravenous antimicrobial to oral administration
- Coordinate with infectious disease physician
- Review restricted antimicrobials

2018 Accomplishments

- Publication of annual antibiogram
- Formalization of restricted antimicrobial process
- Update of *C. difficile* order set and microbiology reporting
- Development of vancomycin education and revision of administration instructions
- Participation in Antibiotic Awareness Week
- Medication Usage Evaluations
  - Levofloxacin
  - Fosfomycin
  - Procalcitonin

Antibacterial Utilization

<table>
<thead>
<tr>
<th>Time (Quarter-Year)</th>
<th>Days of Therapy/1000 Days at Risk</th>
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<tbody>
<tr>
<td>Q4-16</td>
<td>650</td>
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<tr>
<td>Q1-17</td>
<td>640</td>
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<tr>
<td>Q2-17</td>
<td>630</td>
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<tr>
<td>Q3-17</td>
<td>620</td>
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<tr>
<td>Q4-17</td>
<td>610</td>
</tr>
<tr>
<td>Q1-18</td>
<td>600</td>
</tr>
<tr>
<td>Q2-18</td>
<td>590</td>
</tr>
<tr>
<td>Q3-18</td>
<td>580</td>
</tr>
</tbody>
</table>

Formulary Additions

- Fidaxomicin
- Fosfomycin

Guidelines for Use

- Ceftazidime/avibactam
- Ceftolozane/tazobactam
- Tigecycline
- Daptomycin
- Intravenous minocycline
- Ceftazidime
- Tigecycline
- Ceftaroline
- Fidaxomicin

Estimated cost savings: 1.6 million*

1429 antimicrobials narrowed or discontinued
7181 vancomycin consults
459 antimicrobials escalated
104 aminoglycoside consults
The purpose of our PGY1 Pharmacy Practice Residency Program is to educate and train pharmacists with the primary emphasis on the development of practice skills in a number of specialized pharmacy practice areas. A pharmacist completing this program will be a competent generalist who can function in multiple roles within a pharmacy system.

**Program Facts**
- Annually, 3 licensed pharmacists commit to a yearlong program
- Currently training the 11th residency class
- Emphasis on frontline practice with concentrated internal medicine and critical care exposure
- Ample opportunities to teach student pharmacists and other professionals
- Contributions to the pharmacy department via operations, administration, drug information, and research

2018 Achievements
- 3 year accreditation extension
- Expanded preceptor development program
- Realigned operations rotation
- New preceptor handoff process
- Interview process enhancements for 2019

2018 Midyear Clinical Meeting (left to right): Alston Poellntiz, PharmD, Elizabeth Wood, PharmD, Emily Johnson, PharmD, Sarah Blackwell, PharmD, BCPS, BCCCP
Dr. Kathryn Chappell is completing an Internal Medicine PGY2 at Methodist University Hospital in Memphis, TN
Dr. Liz Ezell is working as a decentralized clinical pharmacist at Mobile Infirmary in Mobile, AL
Dr. Jonathan Gray is working as a decentralized clinical pharmacist in the medical ICU at DCH Regional Medical Center in Tuscaloosa, AL

2017-2018 residents and preceptors at the annual Hello-Goodbye Party in June:
(front row, left to right) Natalie Tapley, Kathryn Chappell, Mary Katherine Stuart, Liz Ezell, Jessica Starr, Hillary Holder, (back row, left to right) Helen McKnight, Megan Autrey, Kenda Germain, Sarah Blackwell, Jonathan Gray, Nathan Pinner

2018 Graduates

• Dr. Kathryn Chappell is completing an Internal Medicine PGY2 at Methodist University Hospital in Memphis, TN
• Dr. Liz Ezell is working as a decentralized clinical pharmacist at Mobile Infirmary in Mobile, AL
• Dr. Jonathan Gray is working as a decentralized clinical pharmacist in the medical ICU at DCH Regional Medical Center in Tuscaloosa, AL

Current Residents

• Dr. Emily Johnson, graduate of Samford University
• Dr. Alston Poellnitz, graduate of Auburn University
• Dr. Elizabeth Wood, graduate of Samford University
Auburn University Harrison School of Pharmacy Faculty

Clinical Activities

- Dr. Nathan Pinner and Dr. Jessica Starr provide clinical pharmacy services to patients admitted to the general medicine house-staff team
- Services provided
  - Services resulted in a total of 3244 clinical interventions in 2018 representing $121,879 of cost-savings

Educational Activities

- Dr. Starr provides an Evidence Based Medicine Rotation for the second- and third- year Internal Medicine Medical Residents
  - Goals
    - For the medical residents to gain experience in understanding and applying evidence-based medicine to patient-specific care
    - To obtain experience in clinical trial critique/literature evaluation
    - To review key guidelines and clinical trials
- Topics presented to the medical residents on a rotating basis several times each residency year to the internal medicine medical residents.
  - Acute Coronary Syndromes
  - Acute Decompensated Heart Failure
  - Antifungal Agents
  - Antimicrobial Review – Bugs and Drugs
  - Antithrombotic Therapy and Stroke
  - Atrial Fibrillation
  - Cirrhotic Liver Disease
  - DKA and Inpatient Glycemic Control
  - Enteral Nutrition
  - Epilepsy/Status Epilepticus
  - Ischemic Stroke
  - Opioid Pain Management
  - Pain, Agitation, and Delirium in the ICU
  - Pneumonia – CAP/HAP/VAP
  - Sepsis
  - Statistics for Medical Residents
  - HFrEF/ADHF
  - Venous Thromboembolism
## Committee Involvement

<table>
<thead>
<tr>
<th>Committee Involvement</th>
<th>Description</th>
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<tbody>
<tr>
<td>Princeton Heart Institute</td>
<td>Code Blue Committee</td>
</tr>
<tr>
<td>Medication Safety Committee</td>
<td>Stroke Committee</td>
</tr>
<tr>
<td>Readmissions Team</td>
<td>Medicine Baptist Physicians Alliance</td>
</tr>
<tr>
<td>BBH Pharmacy Standardization Committee</td>
<td>Pharmacy and Therapeutics Committee</td>
</tr>
<tr>
<td>Hospital Acquired Infection Committee</td>
<td>Pharmacy Residency Advisory Committee</td>
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<tr>
<td>Surgical Site Infection Committee</td>
<td>Core Sepsis Committee</td>
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<td>ED Sepsis Task Force</td>
<td>Special Care Committee</td>
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<tr>
<td>Performance Improvement Council</td>
<td>Tenet AL/TN Pharmacy Group</td>
</tr>
<tr>
<td>Pharmacy Director Council</td>
<td>Nursing Council</td>
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<tr>
<td>HCAHPS Patient Experience Committee</td>
<td>Critical Care Task Force</td>
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<td>Diversion Team</td>
<td>Patient Safety Committee</td>
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<td>The Joint Commission Preparation Committee</td>
<td>Antimicrobial Stewardship Committee</td>
</tr>
<tr>
<td>Infection Control Committee</td>
<td>Bariatric Committee</td>
</tr>
<tr>
<td>Tenet Home Office Pharmacy ADM Steering Committee</td>
<td>Facility Research Committee</td>
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<tr>
<td>Department of Medicine</td>
<td>Medical Executive Committee</td>
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<tr>
<td>Patient Safety Rounds</td>
<td>Rapid Response/Event Analysis</td>
</tr>
<tr>
<td>Director Level Meeting</td>
<td>Management Level Meeting</td>
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2019 Theme and Strategic Plan

### 2019 Theme

**Move Pharmacy Forward**

**Chapter II**

### 2019 Strategic Plan

<table>
<thead>
<tr>
<th>Quarter I</th>
<th>Quarter II</th>
</tr>
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<tbody>
<tr>
<td>• Stabilize workforce</td>
<td>• Hire pharmacy clerk/transporter</td>
</tr>
<tr>
<td>• Rehire night pharmacy technician (1 FTE)</td>
<td>• Re-configure OR anesthesia drawers</td>
</tr>
<tr>
<td>• Complete USP 800 risk assessments</td>
<td>• Complete failure mode effect analysis</td>
</tr>
<tr>
<td>• Optimize Pharmogistics PAR levels</td>
<td>• Switch OR workflow/vials to syringes</td>
</tr>
<tr>
<td>• Standardize technician training</td>
<td>• Complete technician manual</td>
</tr>
<tr>
<td>• Review and optimize Pyxis inventory</td>
<td>• Create PGY2 Administration Resident plan</td>
</tr>
<tr>
<td>• Cath lab optimization</td>
<td>• ER culture review process follow-up</td>
</tr>
<tr>
<td>• Heparin drip MUE</td>
<td></td>
</tr>
<tr>
<td>• Preceptor scholarship plan</td>
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</table>

<table>
<thead>
<tr>
<th>Quarter III</th>
<th>Quarter IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Review Pyxis inventory optimization</td>
<td>• Bloodless protocol</td>
</tr>
<tr>
<td>• Antibiotic dosing – B-Lactams</td>
<td>• Aggrastat Bridge-Stent</td>
</tr>
<tr>
<td>• Heart Failure Clinic</td>
<td>• AFib/AC appropriateness</td>
</tr>
<tr>
<td>• Alcohol withdrawal protocol</td>
<td>• Ketamine indication</td>
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</tbody>
</table>
Words of Support

I always try to listen to the clinical pharmacists when they are teaching their students and residents in the unit. They have such a breadth of knowledge about so many topics. It doesn't matter how many times I've heard the same discussion; I learn something new each time.
- India Allen, RN MICU

Clinical pharmacists are essential to the functioning of the ICUs
- Josh Smith, MD

The clinical pharmacists intuitively know when I am going to need their help. They are at the bedside alongside me caring for critically ill patients day after day. We are truly in the trenches together to best care for our patients.
- Terri Womack, RN MICU

I know when I see a pharmacist help is on the way.
- RN on 4 Medical

Pharmacists are some of the best advocates for patient safety.
- Tarun Kapoor, MD

As medical residents, pharmacists are the biggest. They are always available and reach out when they have a patient care question. They are a very integral part of the team.
- Santosh Subramanyam, MD

The pharmacy technicians always keep my unit well stocked.
- Gloria Bennett, CICU Unit Secretary

The hospitalist service heavily relies on the Pharmacy Department to maintain accuracy in the medication reconciliation process during hospitalization of our patients. Pharmacy has also proved indispensable in catching and correcting medication errors.
- Faheem Shaikh, MD
Posters, Presentations and Awards

Posters

Local Presentations/Education
• Noon conference presentations for Medical Education
  o MDR Bacterial Infections
  o Corticosteroids
  o Complications of Cirrhosis
  o Heparin-induced Thrombocytopenia
  o Management of Infective Endocarditis
  o Pneumonia
  o Pain, Agitation, and Delirium: Operationalizing the ABCDEF Bundle
  o Sepsis Management: Pharmacologic Considerations
  o Medication History Taking and Medication Reconciliation
• Hypoglycemia Rates and Action Plan – Department of Medicine Meeting
• Opioid Shortage Management Plan – Department of Medicine Meeting
• HIT review and proposal - Department of Medicine
• Monthly Pharmacy Clinical Staff Meetings
• Preceptor Development
  o Balancing Act: Precepting Learners Simultaneously
  o Delivering Effective feedback in Experiential Training
  o Incorporating Residents into your Workflow
Local Presentations/Education

- Patient education
  - Cardiac Rehabilitation – Medications for the Heart
  - Pulmonary Rehabilitation – Using Inhalers
- Tamiflu dosing guide for ER providers
- Critical Care Nursing Orientation
- Medical Surgical Nursing Orientation
- ED Culture Review Initiative Proposal

Regional Presentations

- Chappell K. Assessment of the transition from intravenous insulin to subcutaneous insulin in the critically ill: A retrospective study. Southeastern Residency Conference, Athens, GA. April 2018.
- Blackwell S. It Begins Now: Preparing for Post Graduate Residency Training McWhorter School of Pharmacy, Samford University, Birmingham, AL. March 2018.

Awards

- Blackwell S. Circle of Influence: Princeton Baptist Service Value Award.
- McKnight H. Circle of Influence: Princeton Baptist Transparency Value Award.
- Roberts B. ALSHP Technician of the Year.
- Blackwell S. ALSHP Service Award: in recognition of service to the organization and a strong interest in health system pharmacy.
- Pinner NA. 2018 Excellence in Teaching Award, Auburn University Harrison School of Pharmacy.

P&T Accomplishments

- Apixaban in ESRD
- Antimicrobial Guidelines for Use
- Levofloxacin MUE
- ED discharge antibiotics MUE
- Fosfomycin monograph and MUE
- Propofol versus dexmedetomidine MUE
- Inflectra® cost analysis
- Sugammadex MUE
- Therapeutic interchanges
- Updated IV to PO policy
- Retacrit® formulary addition
- Renal dose adjustment policy