Show Me the Money!
Approaches to Cost Savings and Revenue Generating Initiatives
Jason Orr, Pharm.D., MBA
Sara Stahle, Pharm.D., BCPS

The speakers have no actual or potential conflict of interest in relation to this activity.

Learning Objectives for Pharmacists
• List methods to identify variation in drug utilization and potential opportunities through internal and external resources.
• Describe specific cost savings/revenue generating initiatives that were implemented and key lessons learned through the process.
• Review examples of how electronic drug cost awareness tools that may guide providers to cost effective medication selections at the point of order entry.

Learning Objectives for Pharmacy Technicians
• List methods to identify differences in drug usage and potential opportunities.
• Describe specific cost savings/revenue generating initiatives and key lessons learned during the implementation process.
• Review examples of how electronic order entry can be used to guide providers to cost effective medication sections.

Jason Orr, Pharm.D., MBA
Director of Pharmacy, Comer Children's Hospital
The University of Chicago Medicine

University of Chicago Medicine Patient Care Facilities
• Bernard A. Mitchell Hospital
• Comer Children’s Hospital
• Duchossois Center for Advanced Medicine
• Center for Care & Discovery

Hospital System Stats:
• Licensed Beds: 811
• Admissions: 29,000/yr
• Patient Days: 180,000/yr
• ED Visits: 78,000/year
• OR Cases: 21,000/year

UCM Department of Pharmacy Facts

<table>
<thead>
<tr>
<th>Total FTE = 250</th>
<th>Inpatient FTE = 154</th>
<th>Residents = 21</th>
</tr>
</thead>
<tbody>
<tr>
<td>Board Certified Pharmacists = 21</td>
<td>Labor Expense = $20M</td>
<td>Drug Expense = $126M</td>
</tr>
<tr>
<td>Investigational Drug Protocols = 470</td>
<td>Inpatient Doses = 4,500</td>
<td>Outpatient Rx's = 95,000</td>
</tr>
</tbody>
</table>
Case Study: Rounding on a Patient

How expensive is methylmitoglybumycin? That's not a drug. But if it were, it would be expensive.

For those of you who work in an inpatient setting, what is the primary resource at your institution for frontline providers to obtain drug cost information?

A. At the point of order entry in CPOE prior to submitting the order
B. By viewing patient charges in CPOE after placing the order
C. Through drug cost chart prepared for the hospital
D. By calling Pharmacy
E. Looking up AWP in a drug resource
F. Other

Why Can't This Be Like Pizza?

Drug Class Cost Comparison Chart

<table>
<thead>
<tr>
<th>Drug Class</th>
<th>Cost Estimation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dobutamine</td>
<td>$500</td>
</tr>
<tr>
<td>Dopamine</td>
<td>$150</td>
</tr>
<tr>
<td>EPINEPHrine</td>
<td>$1,000</td>
</tr>
<tr>
<td>Esmolol</td>
<td>$5,000</td>
</tr>
<tr>
<td>Isoproterenol</td>
<td>$10,000</td>
</tr>
<tr>
<td>Milrinone</td>
<td>$2,500</td>
</tr>
<tr>
<td>Nicardipine</td>
<td>$3,000</td>
</tr>
<tr>
<td>Nitroglycerin</td>
<td>$500</td>
</tr>
<tr>
<td>Nitroprusside</td>
<td>$1,000</td>
</tr>
<tr>
<td>Norepinephrine</td>
<td>$2,000</td>
</tr>
<tr>
<td>Phenylephrine</td>
<td>$3,000</td>
</tr>
<tr>
<td>Vasopressin</td>
<td>$5,000</td>
</tr>
</tbody>
</table>

Legend:
- $ < $ X
- $$ $X-X
- $$$ $XX-XX
- $$$$$ $XX-XXXX
- $$$$$ $XXX-XXXX

Lessons Learned:
- Likely saved as PDF which require a web link.
- Medical staff locating the web link.
- When a link is placed in CPOE the staff rarely clicked to open it.
- Updates needed frequently (i.e., annually).
- Decision needed if you are basing cost comparison on a drip vs. drip comparison or daily average use in a patient.
- How do you use these to apply to an infant compared to an adult.

Visualizing the Concept

• What UCM entry looks like currently:

Challenges?
Challenges – CPOE Build

• With our CPOE, entering drug costs requires manual data entry

Challenges – Ever Changing Environment

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dobutamine</td>
<td>0.6</td>
<td>$</td>
</tr>
<tr>
<td>Dopamine</td>
<td>0.5</td>
<td>$</td>
</tr>
<tr>
<td>Epinephrine</td>
<td>0.5</td>
<td>$</td>
</tr>
<tr>
<td>Esmolol</td>
<td>0.5X</td>
<td>$</td>
</tr>
<tr>
<td>Isoproterenol</td>
<td>0.5XX</td>
<td>$</td>
</tr>
<tr>
<td>Milrinone</td>
<td>0.5XX</td>
<td>$</td>
</tr>
<tr>
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</tr>
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<td>0.5XXX</td>
<td>$</td>
</tr>
<tr>
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<td>0.5XXXX</td>
<td>$</td>
</tr>
<tr>
<td>Norepinephrine</td>
<td>0.5XXXXX</td>
<td>$</td>
</tr>
<tr>
<td>Phenylephrine</td>
<td>0.5XXXXX</td>
<td>$</td>
</tr>
<tr>
<td>Vasopressin</td>
<td>0.5XXXXX</td>
<td>$</td>
</tr>
</tbody>
</table>

Legend

$ < X
$$ X–X
$$$ XX–XX
$$$$ XX–XX
$$$$$ XXX–XXX
$$$$$$ XXXX–XXXX
$$$$$$$ > XXXX

Pricing estimations in this slide are being used for illustration purposes only and are not reflective of actual pricing.

Challenges – What Cost Do You Use?

1. = $251 each vial

2. Patient 1: Sildenafil 2.5mg IV = $63, 3mg IV = $75, 5mg IV = $125, 10mg IV = $251
   Patient 2: Sildenafil 2.5mg IV = $63, 3mg IV = $75, 5mg IV = $125, 10mg IV = $251

Average Cost = $153/dose

Pricing estimations in this slide are being used for illustration purposes only and are not reflective of actual pricing.

Challenges – Inpatient vs Outpatient

in ... out

AWP
340B / WAC
GPO / Contracts

Opportunities
Lab
CPOE solutions
Pricing
Antibiotics
Outpatient

Sara Stahle, Pharm.D., BCPS
Chief Pharmacy Quality & Medication Safety Officer
The University of Chicago Medicine
Initiative Goals

- Reduce variation in care
- Reduce costs
- Maintain or improve patient outcomes
- Maximize value

Value = Outcomes / Cost

Outcome and Cost Considerations

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meaningful to stakeholders (i.e., patient, institution)</td>
<td>Perspective Variation</td>
</tr>
</tbody>
</table>

Outcome and Cost Considerations

Data Sources

- Electronic health records
- Accounting databases
- Benchmarking databases
- Purchasing reports
- Stakeholders

Benchmarking Report Example

<table>
<thead>
<tr>
<th>Hospital</th>
<th>Denominator Cases (n)</th>
<th>Numerator Cases (n)</th>
<th>Percentage of Cases (%)</th>
<th>Mean Days Resource Used (n)</th>
<th>Case Mix Index</th>
<th>Mean Length of Stay</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focus Hospital</td>
<td>81</td>
<td>13</td>
<td>16.05</td>
<td>4.0</td>
<td>0.8947</td>
<td>3.83</td>
</tr>
<tr>
<td>Comparator Group 1</td>
<td>6974</td>
<td>419</td>
<td>6.01</td>
<td>3.6</td>
<td>0.8961</td>
<td>4.35</td>
</tr>
<tr>
<td>Comparator Group 2</td>
<td>1589</td>
<td>125</td>
<td>7.87</td>
<td>3.4</td>
<td>0.8966</td>
<td>4.59</td>
</tr>
</tbody>
</table>

Common Themes

- Transition to outpatient setting
- Protocol revisions
- Alternative products
- Broadening the scope

Which data source do you currently utilize most frequently when evaluating drug utilization and cost opportunities?

A. Electronic health records
B. Accounting databases
C. Benchmarking databases
D. Purchasing reports
E. Stakeholder feedback
Isoproterenol Utilization

- Over $700,000 purchased per year
- Greater than 50% of purchases at wholesale acquisition cost (WAC)

Objectives:
- Determine inpatient and outpatient usage of isoproterenol
- Determine root cause of high percentage of WAC purchases

Isoproterenol Dispensing Cabinet Changes

- No change: 13%
- Per Reduced: 48%
- Removed: 47%

Isoproterenol Utilization Assessment

Outcomes and Lessons Learned

- Things are not always what they seem
- Look for (quick) wins
- Assess impact of charging mechanisms and impact to purchasing
- Evaluate impact of expiring medications and waste

Bone Marrow Transplant (BMT)

- Variation identified through benchmarking
  - Mean cost per case
  - Medication utilization

- Objectives:
  - Evaluate ability to transition chemotherapy regimens to outpatient setting
  - Reduce length of stay and overall costs while maintaining or improving patient satisfaction

Proposed BMT Process

Outpatient
Phase I: Chemotherapy and Stem Cell Infusion

Inpatient
Phase II: Recovery
Proposed BMT Calendar

- Allogeneic BMT

<table>
<thead>
<tr>
<th>Outpatient</th>
<th>Inpatient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day 1</td>
<td>Day 2</td>
</tr>
<tr>
<td>Day 3</td>
<td>Day 4</td>
</tr>
<tr>
<td>Day 5</td>
<td>Day 6</td>
</tr>
<tr>
<td>Day 7</td>
<td>Day 8</td>
</tr>
<tr>
<td>Day 12+</td>
<td></td>
</tr>
</tbody>
</table>

- Autologous BMT

<table>
<thead>
<tr>
<th>Outpatient</th>
<th>Inpatient</th>
</tr>
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<tbody>
<tr>
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<td>Day 8</td>
</tr>
<tr>
<td>Day 12+</td>
<td></td>
</tr>
</tbody>
</table>

Length of Stay and Financial Impact

<table>
<thead>
<tr>
<th>Length of Stay Evaluation</th>
<th>Savings and Reimbursement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Six regimens evaluated</td>
<td>Four regimens evaluated</td>
</tr>
<tr>
<td>Assumption of 60% transition to outpatient</td>
<td>Inpatient cost savings: &gt; $1,000,000</td>
</tr>
<tr>
<td>Anticipated LOS reduction annually: 296</td>
<td>Outpatient reimbursement: &gt; $750,000</td>
</tr>
</tbody>
</table>

Outcomes and Lessons Learned

- Established criteria for outpatient BMT
- Involve all stakeholders in process and considerations
- Organization and communication are key
- Develop formalized metrics to measure progress

What is the most important aspect to consider when evaluating and implementing a cost savings/revenue generating initiative?

A. Finding quick wins
B. Obtaining and presenting useful data
C. Identifying and involving key stakeholders
D. Organization and communication
E. Developing metrics and measuring outcomes

Any Questions?