(Management Case Study) Formulary Development for an Off-Site Freestanding Emergency Department (FSED)

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Disclosures

All planners, presenters, reviewers, and ASHP staff of this session report no financial relationships relevant to this activity.
Learning Objectives

• Describe the freestanding emergency department model at OhioHealth.
• Discuss our comprehensive approach to formulary development.
• Explain lessons learned through this project that could be applied to other facilities.
Self-Assessment Questions

1. (True or False) In OhioHealth’s 8-bed freestanding emergency departments, pharmacy support is virtual.

2. Which of the following strategies were included in the comprehensive approach to formulary development?
   a. Leveraging 503B outsourcing facilities
   b. Review of emergency medicine physician preference lists in the EHR
   c. Examination of drug strength and dosage form
   d. All of the above

3. (True or False) Utilizing a thoughtful multidisciplinary approach to remote facility formulary creation can lead to safe and cost effective care.
Background

• 8-bed emergency departments
• On-site staff:
  – 1 provider
  – 2 registered nurses
  – 1 radiology technician
  – 1 registration/patient safety personnel
• Remainder of services are virtual
Determining a Formulary for Five FSEDs

Balancing Clinical Needs with Operational Processes
Input from Stakeholders & Resources
Physical Space

A Finalized Formulary
### Example - Medical Director Prioritization

<table>
<thead>
<tr>
<th>Must have</th>
<th>Highly desirable</th>
<th>If space available</th>
</tr>
</thead>
<tbody>
<tr>
<td>acetaminophen [TYLENOL] 325 mg tablet</td>
<td>amiodarone [CORDARONE] 50 mg/mL [3 mL] injectable</td>
<td>amLODIPine [NORVASC] 5 mg tablet</td>
</tr>
<tr>
<td>acetaminophen [TYLENOL] 650 mg Suppository</td>
<td>albuterol [PROVENTIL] 2.5 mg/0.5 mL nebul</td>
<td>azithromycin [ZITHROMAX] 250 mg tablet</td>
</tr>
<tr>
<td>adenosine [ADENOCARD] 3 mg/mL (2 mL) vial</td>
<td>albuterol 0.083% [PROVENTIL] 2.5 mg/mL nebul</td>
<td>ciprofloxacin [CIPRO] 500 mg capsule</td>
</tr>
<tr>
<td>albuterol [PROVENTIL] 2.5 mg/0.5 mL nebul</td>
<td>amiodarone [CORDARONE] 360 mg/200 mL [CORDARONE] bag</td>
<td>amoxicillin (AMOXIL) 500 mg capsule</td>
</tr>
<tr>
<td>amiodarone [CORDARONE] 50 mg/mL [3 mL] injectable</td>
<td>aspirin [ASA] 325 mg tablet</td>
<td>amoxicillin-clavulanate 500-125mg [AUGMENTIN] tablet</td>
</tr>
<tr>
<td>aspirin [ASA], chewable 81 mg tablet</td>
<td>aspirin, chewable 81 mg tablet</td>
<td>amoxicillin-clavulanate 875-125mg [AUGMENTIN] tablet</td>
</tr>
<tr>
<td>atropine 0.1 mg/mL [10 mL] syringe</td>
<td>atropine 0.1 mg/mL [10 mL] syringe</td>
<td>azithromycin [ZITHROMAX] 250 mg tablet</td>
</tr>
<tr>
<td>amoxicillin (AMOXIL) 500 mg capsule</td>
<td>amoxicillin (AMOXIL) 500 mg capsule</td>
<td>amLODIPine [NORVASC] 5 mg tablet</td>
</tr>
<tr>
<td>amoxicillin-clavulanate 500-125mg [AUGMENTIN] tablet</td>
<td>amoxicillin-clavulanate 875-125mg [AUGMENTIN] tablet</td>
<td>dicyclomine [BENTYL] 10 mg capsule</td>
</tr>
<tr>
<td>amoxicillin-clavulanate 875-125mg [AUGMENTIN] tablet</td>
<td>azithromycin [ZITHROMAX] 250 mg tablet</td>
<td>insulin lispro, subcutaneous [Humalog] 100 units/mL (3 mL) vial</td>
</tr>
<tr>
<td>azithromycin [ZITHROMAX] 250 mg tablet</td>
<td>ciprofloxacin [CIPRO] 500 mg capsule</td>
<td>itopride [IMODIUM] 2 mg capsule</td>
</tr>
<tr>
<td>amLODIPine [NORVASC] 5 mg tablet</td>
<td>acetaminophen-codeine 300-30mg [TYLENOL #3] tablet</td>
<td>ALPRAZolam [XANAX] 0.25 mg tablet</td>
</tr>
<tr>
<td>diclofenac [FLEX bev] 75 mg tablet</td>
<td>ALPRAZolam [XANAX] 0.25 mg tablet</td>
<td>aspirin 300 mg Suppository</td>
</tr>
</tbody>
</table>

### Don’t need
- aspirin 300 mg Suppository
Product Selection – Oral Medications

List of oral medications compiled (duplicates removed)

Reviewed dosages and formulation to consolidate number of medications

Final Product List
Product Selection – Intravenous (IV) Medications

List of IV medications compiled (duplicates removed)

Premade product
- Available through the manufacturer

Products that require compounding
- Available through a 503b outsourcing facility
- Must be traditionally compounded
- Can be compounded through a vial-mate adapter device
Physical Storage Space Considerations

- All medications stored in automated dispensing cabinet (ADC)
- Utilized projected volumes for initial PAR development
- 2 deliveries/site/week
  - Minimal FTE support in LEAN environment
Challenges to Overcome: Extended Dating

• Low volume facilities can lead to increased waste from short dated products
• Vial-mate assembly on-site
  – Individually packed IV solution bags
  – Vial and IV bag stored separately in ADC
• Concerns:
  – How does a provider order in the EHR to support operation?
  – Ability for ADC to dispense multiple components per order?

piperacillin-tazobactam (ZOSYN) 4.5 g in sodium chloride (NS) 0.9% 100 mL IVPB (vialmate) (FSED)
Challenges to Overcome: Nurse Compounding

• Limited number of medications that require compounding
• Pharmacy-led on-site training during each go-live
• Virtual health technology for high risk high alert (HRHA) compounds
End Result of Initial Formulary

249 products = $39,821.02 per site
Where are we now?

- The drug inventory at each site is assessed at minimum every 90 days for additions and removals
  - In Summer 2018, our PAR assessment led to $8,757.27 in one time savings
- Living formulary
  - Pharmacy holds a lot of autonomy in the decision making
  - Controversial items come to medical directors for approval
    - Example: Prothrombin complex concentrate and idarucizumab
Self-Assessment Questions

(True or False)

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Self-Assessment Questions

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TRUE
KEY TAKEAWAYS

1) ENGAGE ALL MEMBERS OF THE HEALTHCARE TEAM
   A comprehensive approach to formulary management can lead to cost containment while maintaining high quality patient care

2) LEVERAGE INNOVATIVE STRATEGIES
   Challenge your technology to go outside of existing processes and build something new

3) COST IS NOT THE ONLY DECISION POINT
   High dollar medications often have an appropriate clinical use even in a low acuity setting