Performing a Medication Safety Gap Analysis in a Pediatric Hospital

Michael C. Dejos, PharmD, BCPS
Medication Safety Officer
Alfred I duPont Hospital for Children
Nemours Children’s Health System
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Objectives

Discuss resources to performing a pediatric medication safety gap analysis

Determine a mechanism for prioritizing gaps identified from the analysis
Overview

Pediatric Medication Safety

ISMP’s Survey on Pediatric Medication Safety Practice

Performing a Medication Safety Gap Analysis
Medication safety is a concern in pediatric care.

As many as 1 in 10 hospitalized children are impacted by a medication error.

Up to 35% of these errors are serious or life threatening.

Three times more likely than adults to experience harm from medication errors and adverse drug reactions.

Part 1: Results of Survey on Pediatric Medication Safety. ISMP. 2015
Part 2: Results of Survey on Pediatric Medication Safety. ISMP. 2015
Medication Errors vs. Adverse Drug Events

Medication Errors
- No Harm

ADEs
- Preventable Harm
- Non-preventable Harm

Contemporary View of Medication-Related Harm. A New Paradigm. NCCMERP. 2015
Why are pediatric patients at an increased risk?

- **Weight-based dosing**
- **Lack of dosage forms and concentrations**
- **Precise dose measurement and appropriate drug delivery systems**
- **Lack of published information and FDA-approved labeling**

Performing a Pediatric Medication Safety Gap Analysis
What is a gap analysis?

Tool used to:

- Compare best practices with processes currently in place in an organization
- Determine “gaps” between organization’s practices and the identified best practices
- Select best practices you will implement in organization
What is a gap analysis?

Allows for organization to have:

An understanding of the differences between current practices and best practice
An assessment of barriers that need to be addressed before successful implementation of best practices
Steps to Performing a Pediatric Medicaion Safety Gap Analysis

1. Identify best practice recommendations related to pediatric medication safety
2. Utilize a structured tool to compare the recommendations with the institution’s practice
3. Determine the differences between the institution’s practice versus the recommendations
4. Prioritize the gaps by calculating a risk priority number using a standard score
5. Share the identified gaps with hospital leadership to determine implementation plans
1. Identify best practice recommendations related to pediatric medication safety
ISMP Survey on Pediatric Medication Safety Practice

Online survey during March and April 2015
Results from 1,463 clinicians
   Mostly nurses (43%), pharmacists (45%), and physicians in both inpatient and outpatient settings
Settings
   Pediatric hospitals (43%)
   General hospitals (41%)
2. Utilize a structured tool to compare the recommendations with the institution's practice
### Agency for Healthcare Research and Quality (AHRQ) Gap Analysis Tool

**Project:**

**Individual Completing This Form:**

<table>
<thead>
<tr>
<th>Column 1</th>
<th>Column 2</th>
<th>Column 3</th>
<th>Column 4</th>
<th>Column 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Best Practice</td>
<td>Best Practice Strategies</td>
<td>How Your Practices Differ From Best Practice</td>
<td>Barriers to Best Practice Implementation</td>
<td>Will Implement Best Practice (Yes/No; why not?)</td>
</tr>
</tbody>
</table>

**Gap Analysis Quality Indicators Toolkit. AHRQ**
3. Determine the differences between the institution’s practice versus the recommendations
4. Prioritize the gaps by calculating a risk priority number using a standard score.
Calculating a Risk Priority Number (RPN)

Likelihood of failure x severity x likelihood for detection

Scores ranging from 1 to 10
Highest score possible = 1000
Lowest score possible = 1
Calculate RPNs: Assign likelihood of failure score

<table>
<thead>
<tr>
<th>Likelihood of failure</th>
<th>Score</th>
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</thead>
<tbody>
<tr>
<td>Remote, failure is unlikely</td>
<td>1</td>
</tr>
<tr>
<td>Low, relatively few failures likely</td>
<td>3</td>
</tr>
<tr>
<td>Moderate, occasional failures likely</td>
<td>5</td>
</tr>
<tr>
<td>High, repeated failures likely</td>
<td>8</td>
</tr>
<tr>
<td>Extremely high, failures almost assured</td>
<td>10</td>
</tr>
</tbody>
</table>

Failure Modes and Effects Analysis Scoring System. Institute for Healthcare Improvement
Calculate RPNs: Assign severity score

<table>
<thead>
<tr>
<th>Severity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>No clinical consequence</td>
</tr>
<tr>
<td>2</td>
<td>Minor annoyance</td>
</tr>
<tr>
<td>3</td>
<td>Moderate effect with full recovery</td>
</tr>
<tr>
<td>4</td>
<td>Significant effect with full recovery</td>
</tr>
<tr>
<td>5</td>
<td>Major effect with full recovery</td>
</tr>
<tr>
<td>6</td>
<td>Permanent effect with minor injury</td>
</tr>
<tr>
<td>7</td>
<td>Permanent effect with moderate injury</td>
</tr>
<tr>
<td>8</td>
<td>Permanent effect with significant injury</td>
</tr>
<tr>
<td>9</td>
<td>Near death event</td>
</tr>
<tr>
<td>10</td>
<td>Death</td>
</tr>
</tbody>
</table>
Calculate RPNs: Assign likelihood of detection

<table>
<thead>
<tr>
<th>Likelihood of Detection</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
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<tr>
<td>4</td>
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<td>10</td>
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5. Share the identified gaps with hospital leadership to determine implementation plans
Summary

There are many medication safety concerns in pediatrics and we can use a gap analysis approach to implement best practice recommendations.

Utilizing a multidisciplinary group and established tools, such as AHRQ’s gap analysis template and IHI’s risk prioritization scoring system, facilitates an institutional gap analysis.

Using a gap analysis approach with the ISMP Survey on Pediatric Medication Safety Practices allows institutions to compare their practices to ISMP’s recommendations.
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References


