**High-Alert Medication Safety**
Standard safe practices to prevent harm from use of specific powerful medications—anticoagulants, insulin, opiates, and sedatives.

**Domain**

**Patient Care Processes:**
Clinical processes that ensure delivery of high-quality care to individual patients

**Aims**

**Safe:**
Delivery of care in a manner that minimizes any risk of harm to a patient

**Process Attributes**

<table>
<thead>
<tr>
<th>$</th>
<th>Cost to Implement</th>
</tr>
</thead>
<tbody>
<tr>
<td>The monetary resources required to implement this process</td>
<td></td>
</tr>
<tr>
<td><strong>Moderate:</strong> In addition to the improvement effort, relies on additional personnel and/or technology</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>☕️</th>
<th>Time to Implement</th>
</tr>
</thead>
<tbody>
<tr>
<td>The amount of time, from months to years, it will take on average to establish this process</td>
<td></td>
</tr>
<tr>
<td><strong>More than 2 years</strong></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>🧠</th>
<th>Difficulty to Implement</th>
</tr>
</thead>
<tbody>
<tr>
<td>The challenges of implementing this process</td>
<td></td>
</tr>
<tr>
<td><strong>Moderately Challenging:</strong> Either involves multiple units or disciplines OR requires a substantial shift in culture and/or operations, but not both of these</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>📚</th>
<th>Level of Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>The degree to which the actions in this process are supported by research and experience; based on the Cochrane scale</td>
<td></td>
</tr>
<tr>
<td><strong>Some Evidence:</strong> Level III — Studies published with some control included</td>
<td></td>
</tr>
</tbody>
</table>

**Details**

**Elements**

- Determine which high-alert medications are used in your organization

- Determine rate of errors and harm using reported events, IHI Trigger tools, and FMEA to identify the areas of highest risk to focus on first

- For each high-alert medication:
  - Identify gaps in use of standardized processes and concentrations/dosage strengths
  - Use multidisciplinary approach to developing any missing protocols, order sets, and standard work processes
  - Develop reliable monitoring and mitigation steps

- Use teach-back and show-back techniques to ensure appropriate literacy levels and understanding by patient and families
Outcomes

- **Mortality (HSMR):** Decreased mortality (hospital standardized mortality ratio, or HSMR)
- **Harm:** Decreased harm to patient (e.g., Harms per 100 patient days, as measured by the IHI Global Trigger Tool)
- **Cost of Care:** Decreased cost per inpatient case
- **Readmissions within 30 Days:** Decreased readmissions within 30 days

Service Lines and Critical Functions

- Applies in All Patient Settings
- Medication Management
- Nursing

Key Measures

- **Adverse Drug Events**
  - Adverse Drug Events (harm) associated with high-alert medication per patient days or per doses of high-alert medication
- **Percent of patients on high-alert medications for whom standardized process used**

Reasons and Implications

Importance for Patients and Families

High-alert medications are powerful medications such as anticoagulants, insulin, opiates, and sedatives. Patients and families can play an important role in reducing errors and harm to the patient when they understand what medications the patient is taking and why.

Requirement, Standards, Policies, and Guidelines

- [Agency for Healthcare Research and Quality (AHRQ)](http://www.ahrq.gov)
- [American Society of Health-System Pharmacists (ASHP)](http://www.ashp.org)
- [Centers for Medicare & Medicaid Services (CMS)](http://www.cms.gov)
- [National Priorities Partnership (NPP)](http://www.nationalprioritiespartnership.org)
  - Safety
- [National Quality Forum (NQF)](http://www.qualityforum.org)
  - Safe Practice for Better Healthcare—2009 Update
  - Safe Practice 18: Pharmacy Leadership Structures and Systems
  - Safe Practice 29: Anticoagulation Therapy
- [The Joint Commission (TJC)](http://www.jointcommission.org)
  - Sentinel Event Alert Issue 11: High-Alert Medications and Patient Safety

Financial Implications

- Expense reduction can occur due to decrease in costs associated with adverse drug events.
- Expense increase can occur due to technology and protocol maintenance.

Prerequisites

Implementation of standard processes (such as protocols and checklists) and standard concentrations
Additional Resources

- Institute for Safe Medication Practices (ISMP)
  High-Alert Medication Feature:
  Anticoagulant safety takes center stage in 2007
- National Initiative for Children’s Healthcare Quality (NICHQ)
  Pediatric How-to Guide: High-Alert Medications
- Agency for Healthcare Research and Quality (AHRQ)
  Anticoagulant resources
- American Society of Health-System Pharmacists (ASHP)
  High-alert medications
- US Department of Health and Human Services
  Partnership for Patients
- Centers for Disease Control and Prevention (CDC)
  Medication Safety
- Institute for Safe Medication Practices (ISMP)
  List of high-alert medications
- Institute for Safe Medication Practices (ISMP)
  HIGH ALERT Medication Feature
  Reducing patient harm from opiates
- Institute for Safe Medication Practices (ISMP)
  Paralyzed by Mistakes
  Preventing Errors with Neuromuscular Blocking Agents
- The Joint Commission (TJC)
  Sentinel Event Alert:
  Preventing errors relating to commonly used anticoagulants

Information Compiled By

IHI