NEWBORN OVERDOSE

Adult dose of heparin delivered to premature infants

“As frequently occurs, all of these heparin-associated medication errors happened when a number of system failures occurred simultaneously. System failures included: 1) failure to carefully and accurately read the label on the medication vial prior to administering the drug to the patient; 2) inaccurate filling of automated drug-dispensing cabinets; 3) non-distinct “look-alike” labels on the heparin vials; 4) similar size of the heparin vials as both were 1-mL vials; and 5) “factor of ten” dosing errors.”


Problem Mapping is a Root Cause Analysis method that captures basic cause-and-effect relationships supported with evidence.

1 Problem

What

Problem(s)
Adult heparin dose given to 6 newborns

When
Date
September 16, 2006
Different, unusual, unique
Saturday; dose 1000x higher

Where
State, city
Indianapolis, IN
Facility, site
Hospital
Unit, area, equipment
NICU
Task being performed
Administration of heparin (blood thinner)

Impact to the Goals
Patient Safety
3 fatalities of premature newborns
3 critical condition, premature newborns
Employee Impact
Potential for second victim
Compliance
Never event
Organization
Incorrect drug dose delivery
Patient Services
Frequency
16,000 incorrect dosing errors between 2001-2006

2 Analysis

More Detailed Cause Map
Add detail as information becomes available.

3 Solutions

<table>
<thead>
<tr>
<th>No.</th>
<th>Action Item</th>
<th>Cause</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Use saline to flush IVs</td>
<td>Risk of clogging intravenous tubes</td>
</tr>
<tr>
<td>2</td>
<td>Administer heparin from syringes</td>
<td>Wrong dosage removed from bottle</td>
</tr>
<tr>
<td>3</td>
<td>Double check drug at administration, pickup, stocking, administration</td>
<td>Med check ineffective</td>
</tr>
<tr>
<td>4</td>
<td>Redesign bottles so have different appearance, size, shape</td>
<td>10 unit bottle and 10,000 unit bottle look the same</td>
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<tr>
<td>5</td>
<td>Increase staffing for hospitals</td>
<td>Understaffed ?</td>
</tr>
<tr>
<td>6</td>
<td>Implement computer system</td>
<td>No computer system being used</td>
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</tbody>
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