NEWBORN OVERDOSE

Cause Map

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."

- "Neonatal Heparin Overdose--A Multidisciplinary Team Approach to Medication Error Prevention" J Pediatric Pharmacol Ther. 2008 Apr-Jun; 13(2):96-98

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

CAUSE MAPPING

Problem Solving • Incident Investigation • Root Cause Analysis

Step 1 Problem — What's the Problem?

Step 2 Analysis — Why did it happen?

Step 3 Solutions — What will be done?

For a free copy of our Root Cause Analysis Template in Microsoft Excel, used to create this page, visit our web site.

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

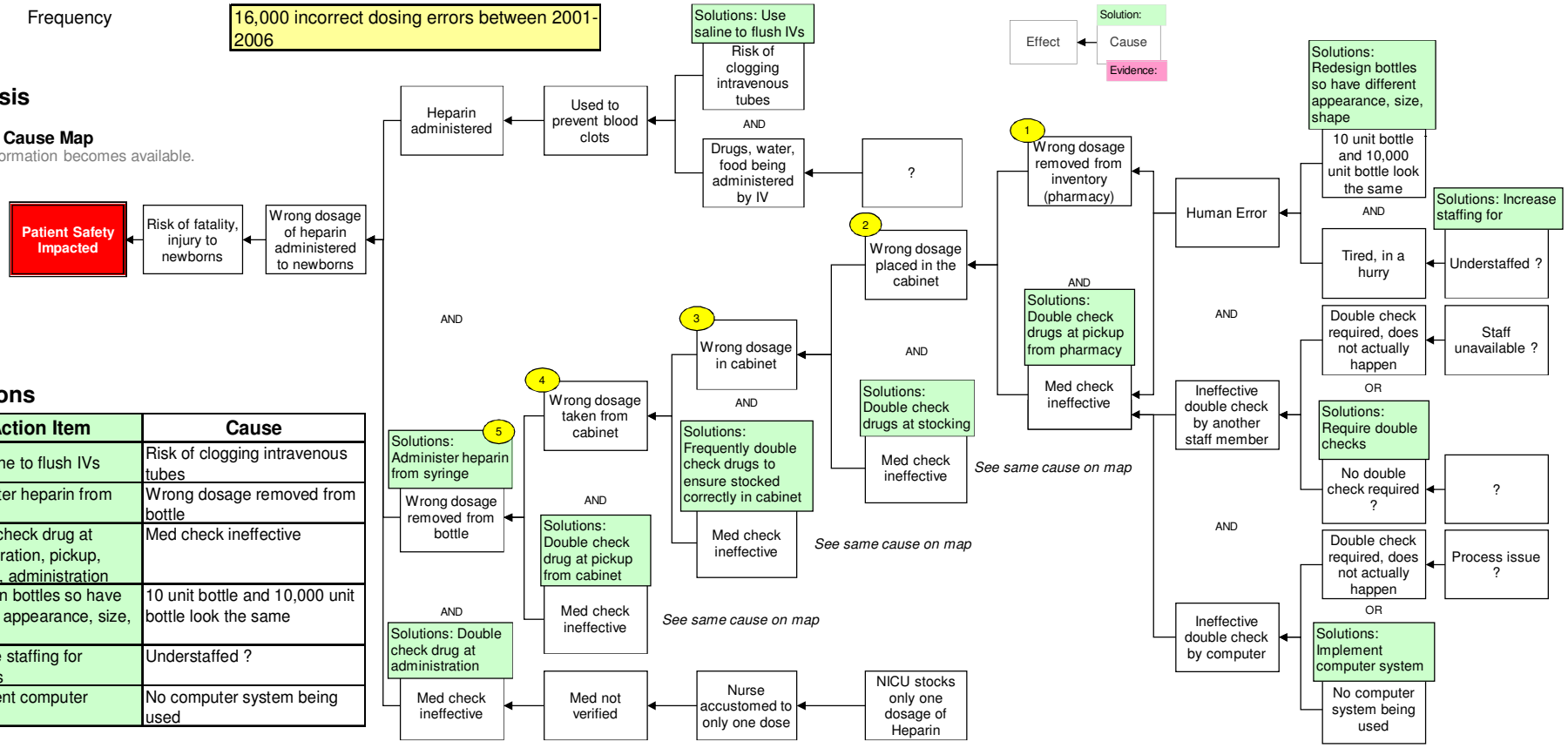
Patient Safety	3 fatalities of premature newborns
	3 critical condition, premature newborns
Employee Impact	Potential for second victim
Compliance	Never event
Organization	
Patient Services	Incorrect drug dose delivery

Frequency	16,000 incorrect dosing errors between 2001-2006

2 Analysis

More Detailed Cause Map

Add detail as information becomes available.



3 Solutions

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