Reliability Center Inc.

Doing RCA Right!™

Proactive RCA: Turning RCA Into ROI!

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Company: Reliability Center, Inc.

On Today's Agenda…

- Typical RCA Threshold Triggers
- Current TJC FMEA Requirements
- Making the Business Case for RCA
  - FMEA – Risk Assessment
  - Opportunity Analysis – Dollar Costs of Chronic Failures
- Applying RCA to the Significant Few Via the Logic Tree
  - Building a Logic Tree to Tell a Story About an Undesirable Outcome
- Live Exercise with Audience as Analysis Team
- Conclusion

Typical RCA Triggers

Sentinel Event Policies and Procedures

Accessed: June 26, 2012
Based on TJC Update: January 4, 2011

- A sentinel event is an unexpected occurrence involving death or serious physical or psychological injury, or the risk thereof. Serious injury specifically includes loss of limb or function. The phrase “or the risk thereof” includes any process variation for which a recurrence would carry a significant chance of a serious adverse outcome.

- Such events are called “sentinel” because they signal the need for **immediate** investigation and response.

- The terms “sentinel event” and “medical error” are not synonymous; not all sentinel events occur because of an error and not all errors result in sentinel events.

http://www.jointcommission.org/Sentinel_Event_Policy_and_Procedures/

Sentinel Event Examples…

- **Suicide** of any patient receiving care, treatment and services in a staffed, around the clock care setting or within 72 hours of discharge
- Unanticipated **death of a full-term infant**
- Abduction of any patient receiving care, treatment, and services
- Discharge of an **infant to the wrong family**
- **Rape**
- Hemolytic transfusion reaction involving administration of blood or blood products having **major blood group incompatibilities** (ABO, Rh, other blood groups)
- Surgical and nonsurgical invasive procedure on the **wrong patient**, **wrong site, or wrong procedure**
- Unintended **retention of a foreign object** in a patient after surgery or other procedure
- Severe neonatal **hyperbilirubinemia** (bilirubin >30 milligrams/ deciliter)
- Prolonged fluoroscopy with cumulative dose >1,500 rads to a single field or any delivery of **radiotherapy to the wrong body region** or >25% above the planned radiotherapy dose

Are These Reactive or Proactive Conditions?

TJC FMEA Requirement (LD.04.04.05)

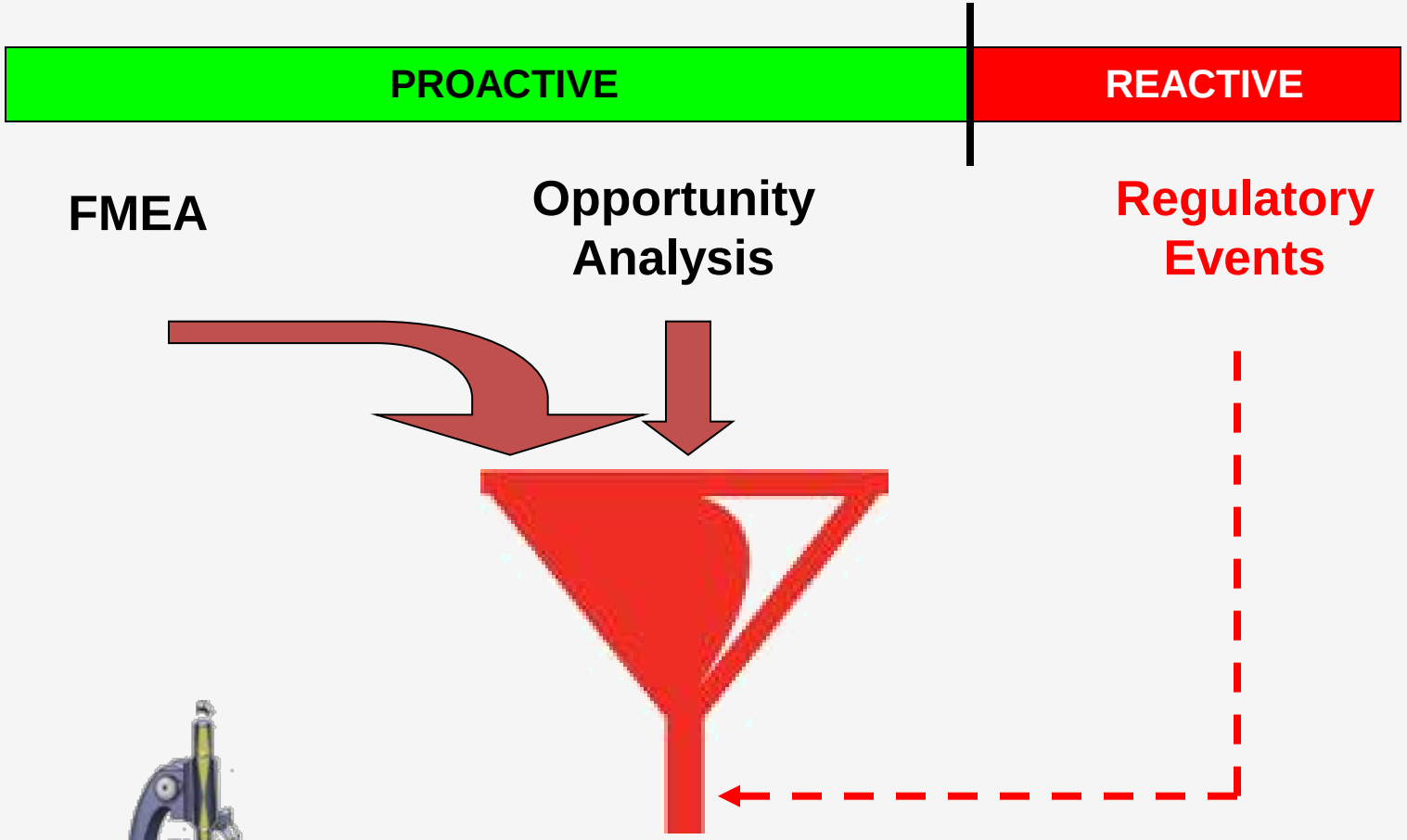
The FMEA standard is LD.04.04.05, element of performance 10. It reads “at least every 18 months, the hospital selects one high-risk process and conducts a proactive risk assessment.”

Obtained: June 26, 2012 from TJC

Is this placing a priority on ‘proaction’?

FMEA and Opportunity Analysis

Where do candidates for RCA come from now?



Quantifying Risk – Basic Failure Modes and Effects Analysis (FMEA)

Probability X Severity = Criticality

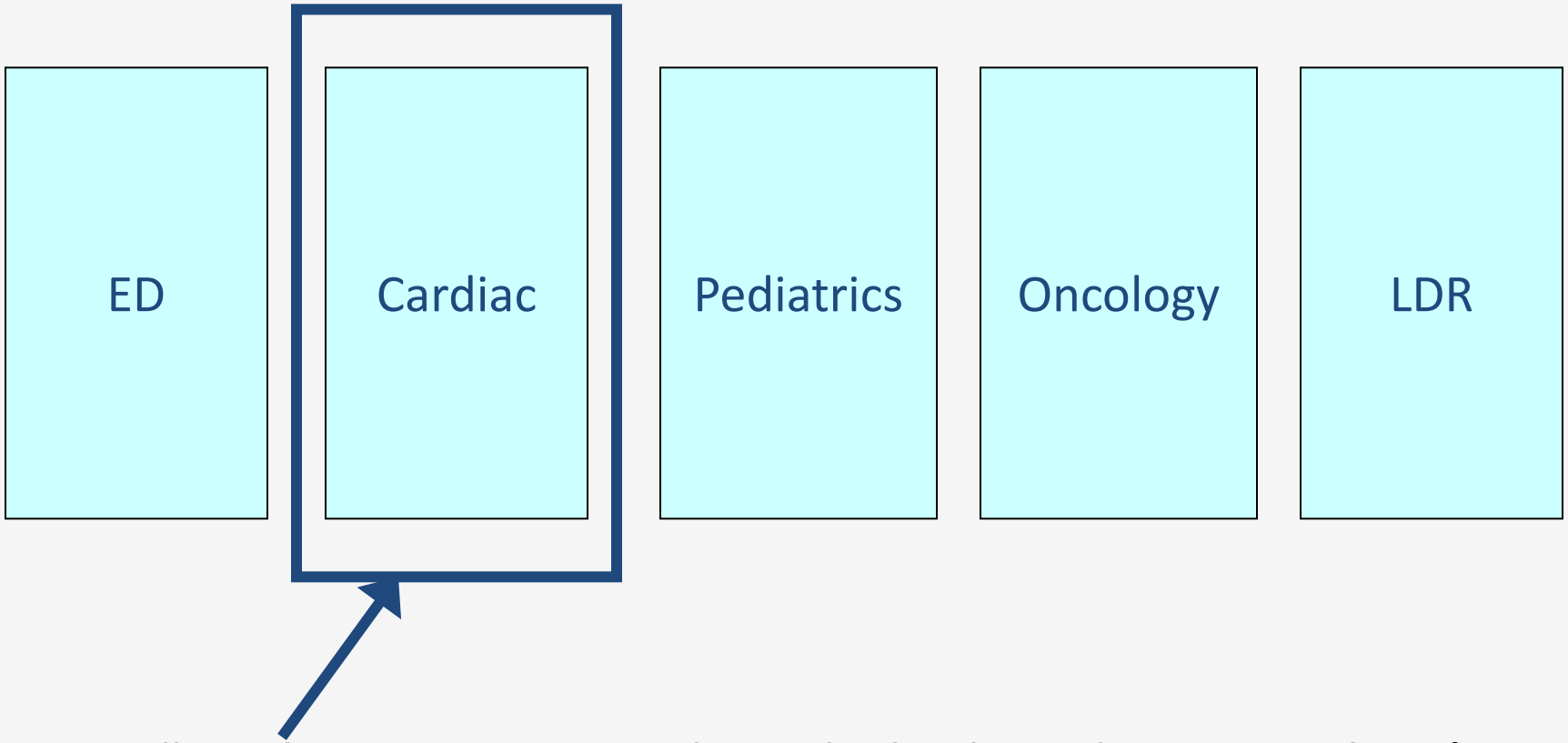
Item	Failure Mode	Effect on Other Items	Effect on Entire System	Severity (S)	Probability (P)	Criticality (C = S x P)
Adverse Events Involving Children	Wrong Dose	Length of Stay	Increased Claims	7	3	21

Introducing FMEA's 'Sister' - Opportunity Analysis (OA)

The Basic OA Analysis Process:

1. Perform preparatory work
2. Collect data
3. Calculate the loss
4. Determine the "Significant Few"

1A - Perform Preparatory Work
Identify The 'Scope' of Analysis



Will one department or process be involved in the Analysis, or Many? Don't try and tackle world hunger in such an analysis, you will lose your team!

1B - Perform Preparatory Work

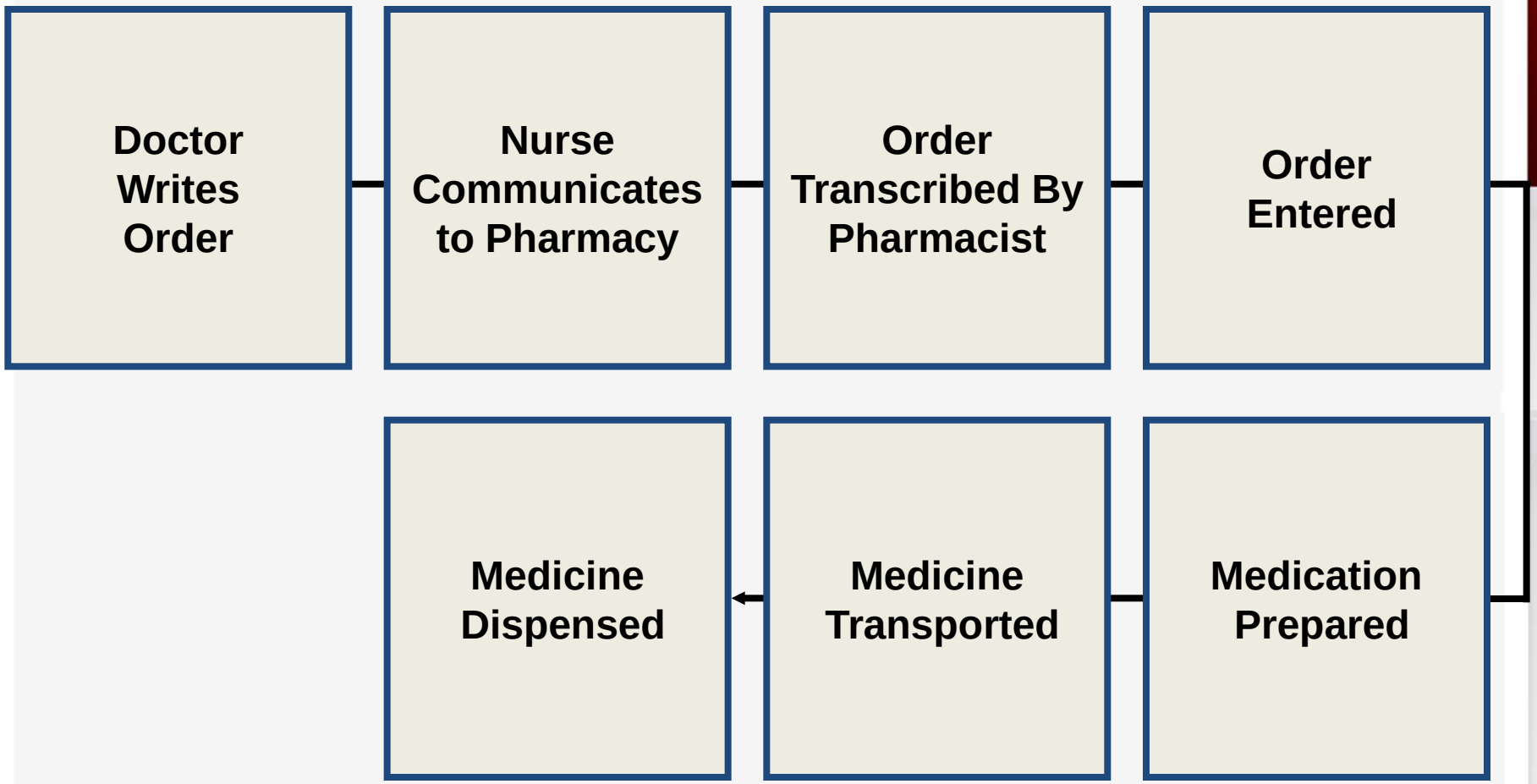
Define 'What is a FAILURE/LOSS in the system you are analyzing?'

What is The Definition of a "LOSS"?

It Depends on Your Perspective:

1. Any event or condition that results in a Sentinel Event (Risk Management Perspective)
2. Any event or condition that results in an Adverse Drug Event (Risk Management Perspective)
3. Any event or condition that results in a "Near Miss" (Quality Management Perspective)
4. Any event or condition that results in an Extended Length of Stay (Claims Perspective)
5. **Any event or condition that results in a Medication Order Process Error (Claims Perspective)**

1C- Perform Preparatory Work/Draw a Block Diagram Basic Medication Order Process Example



1C- Perform Preparatory Work (OA)

Example - Medication Order Process

Sub System	Event	Mode	Freq.	Impact/Occurrence (Preventable=$2595 Non-Preventable=$4685)	Total Annual Loss
Doctor Writes Order	ADE	Prescribing Error	130[1]	$3,640[2]	$473,200
		Transcribing Error	40	$3,640	$145,600
		Dispensing Error	38	$3,640	$138,320

1 - JAMA, 1995 Vol. 274 Jul 05:Systems Analysis of Adverse Drug Events

2- JAMA, 1997 Vol.277 Jan 22/29: The Costs of Adverse Drug Events in Hospitalized Patients (avg. between non-preventable and preventable ADE's)

Measuring 'Loss" – Impact Per Occurrence

Sub System	Event	Mode	Freq.	Impact Per Occurrence	Total Annual Loss

Regulatory Scrutiny

Litigation $$

Labor Costs

Materials

Cost of Investigation

Unexpected Hospitalization

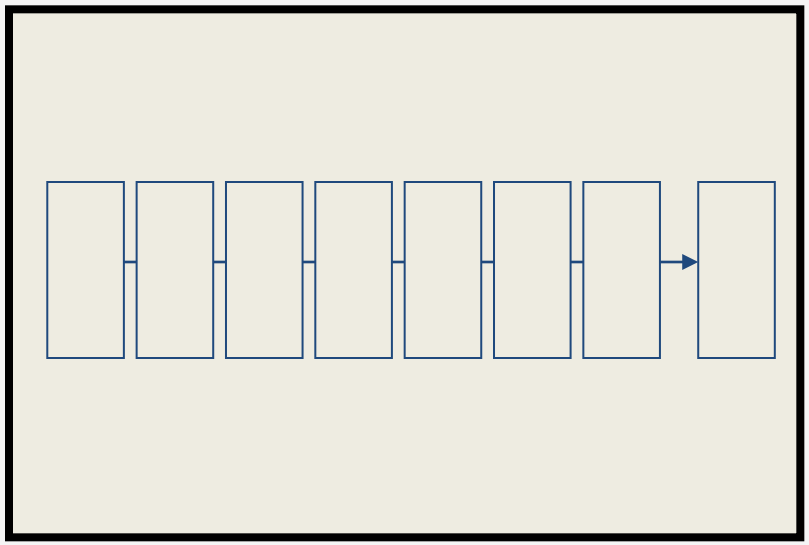
Loss of Reputation ($$)

JCAHO $$

Extended Length of Stay

2- Collecting the Raw Data

The 3 Necessary Tools to Collect Data



Block Diagram

"Any Event, Occurrence or Condition that Results in an ADE (Wrong Type, Frequency or Dose of Medication)"

Loss Definition

Sub System	Event	Mode	Freq.	Impact Per Occurrence	Total Annual Loss
			OA Worksheet		

3 - Calculate the Loss (OA)

Sub System	Event	Mode	Frequency	Cum. Impact Per Occurrence	Total Annual Loss
Medicine Order Process	ADE	Wrong Medicine	20 per Year	$2,182	$43,640
	Patient Death	Allergic Reaction	2 per Year	$439,200	$878,400

Apply Loss Formula:

Frequency X Sum of Impacts = Total Annual Loss

4 - Determine the "Significant Few"
Significant Few Examples

- 20% or less of the patients, require 80% or more of the care
- 20% or less of the types of medication errors account for 80% or more of the costs
- 20% or less of the staff require 80% or more of your attention

4 - Determine the "Significant Few"
The Pareto Split

Sub System	Event	Mode	Frequency	Impact Per Occurrence or Severity	Total Loss/Yr

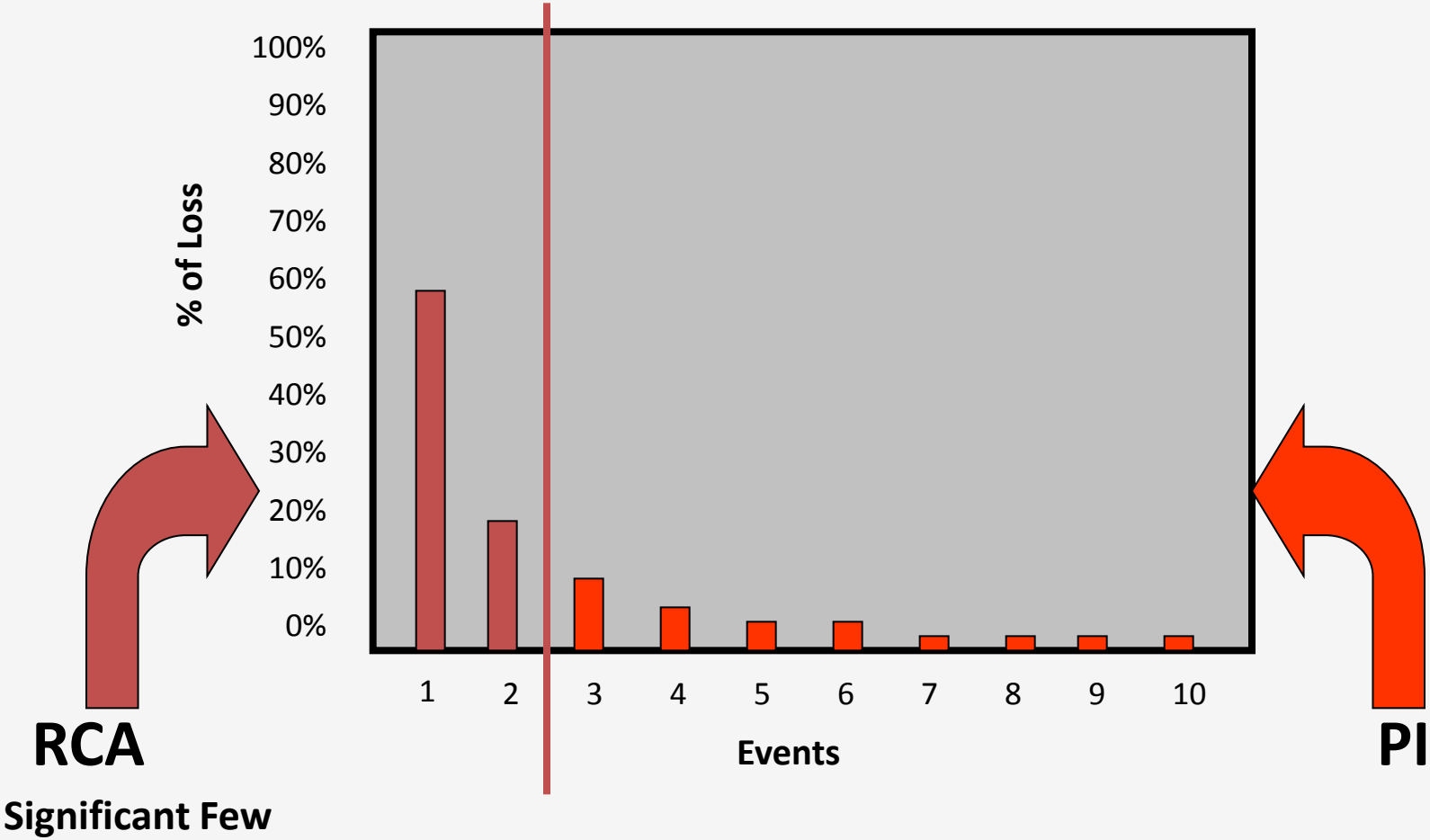
Grand Total	=		$1000
Pareto Cut	=	x	.80
Significant Few	=	$	800

The Pareto Split

80 / 20 (or less)

% $$$ % EVENTS

4 - Determine the "Significant Few"
The Business Case!



Case 1: Joint Study with RCI Client

- 324 Bed Acute Care Facility
- Teaching Hospital
- Pulled all Cases from June 2007 to July 2008 Where Patient's Treated for Decubitus Ulcers
- Separated Out Cases Not Present on Admission (NPOA) from Present on Admission (POA)
- Reviewed Each Case and Pulled Out Costs for Treating Only the DU as opposed to the overall DRG

Preliminary Findings

Gross Patient Revenues for 2007:	$409,818,662[1]
Medicare Revenue:	$162,363,151
Total Medicare/Medicaid Contribution:	40%
Cost of DU-NPOA - 12 Month Period	**$6,994,004[2]**

1 'Never Event' Impact (DU)	**1.7% of Gross Patient Revenues**
1 'Never Event' Impact (DU)	4.3% of Total Medicare/Medicaid Contr.

[1] AHP reference information
[2] Facility OA results

Case 2: Joint OA Study with RCI Client

- 225 Bed Acute Care Facility
- Review of Blood Drawing Process in ER
- Analysis Triggered by CFO Review of Opportunities for Cost Reductions
- Business Case Desired for Hiring Phlebotomist Team

OA Conclusions

Number of Redraws for 1 Yr Period	10,013
Average Cost of a Redraw	$300 (provided by in-house data analyst)
Total Annual Cost of Redraws	**$3,003,900**
Total Potential Returns	$2,838,629/Yr (98% Reduction)
Total Initial Investment	$ 697,400/Yr (25 FTE Phlebotomists)
Potential ROI	407%
Estimated Payback Period	3 Months

What About 30-Day Readmissions?

- Couldn't we use these approaches to determine the 20% of the readmission failure modes accountable for 80% of total number of 30-day readmissions (either using dollars or risk)?
- Couldn't we then focus our RCA effort on those 'Significant Few' failure modes?

The Hidden Hospital Within the Hospital

Income Statement Summary
REVENUES
Inpatient Revenue
Outpatient Revenue
Total Patient Revenue
Contractual Adjustments
Charity Care
Other Adjustments
Total Deductions from Revenue
Net Patient Service Revenue
Other Operating Revenue
Tax Revenue
Total Operating Revenue
OPERATING EXPENSES
Salaries and Benefits
Employee Benefits
Professional Fees
Supplies
Purchased Services - Utilities
Purchased Services - Other
Depreciation
Rentals and Leases
Insurance
License and Taxes
Interest
Bad Debts
Other Direct Expenses

"+"

Outpatient Revenue

"-"

Salaries and Benefits

Supplies

Purchased Services

Insurance

Bad Debt

Potential Impact on Financial Bottom-Line

Time Check!

FMEA/OA → **Prioritization**

Preserving Event Data → **Collect Evidence**

Ordering the Analysis Team → **Dampen Bias**

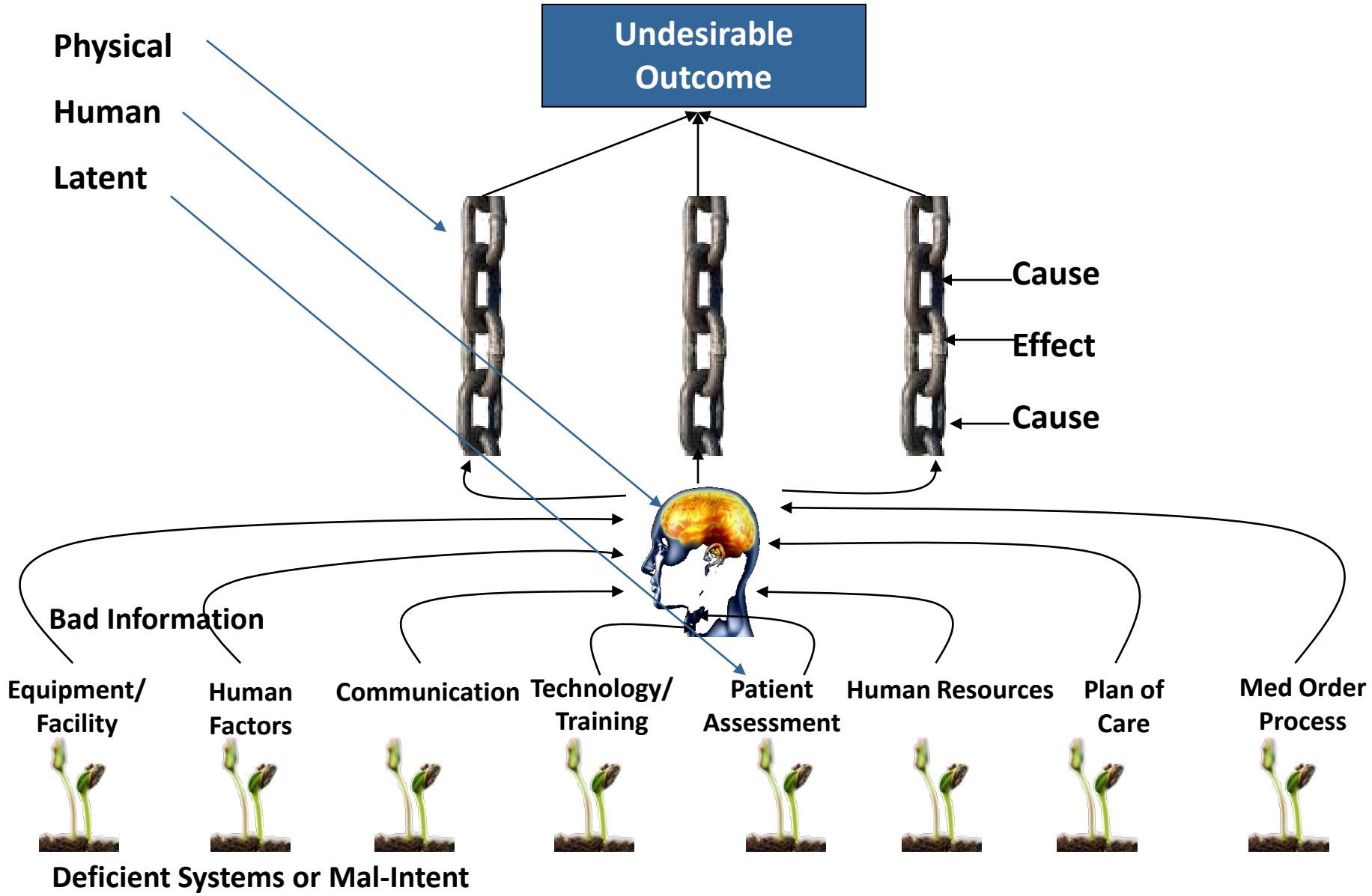
Analyzing Event Data → **Determine Causation**

Communicating Findings & Recommendations → **Link Attribution**

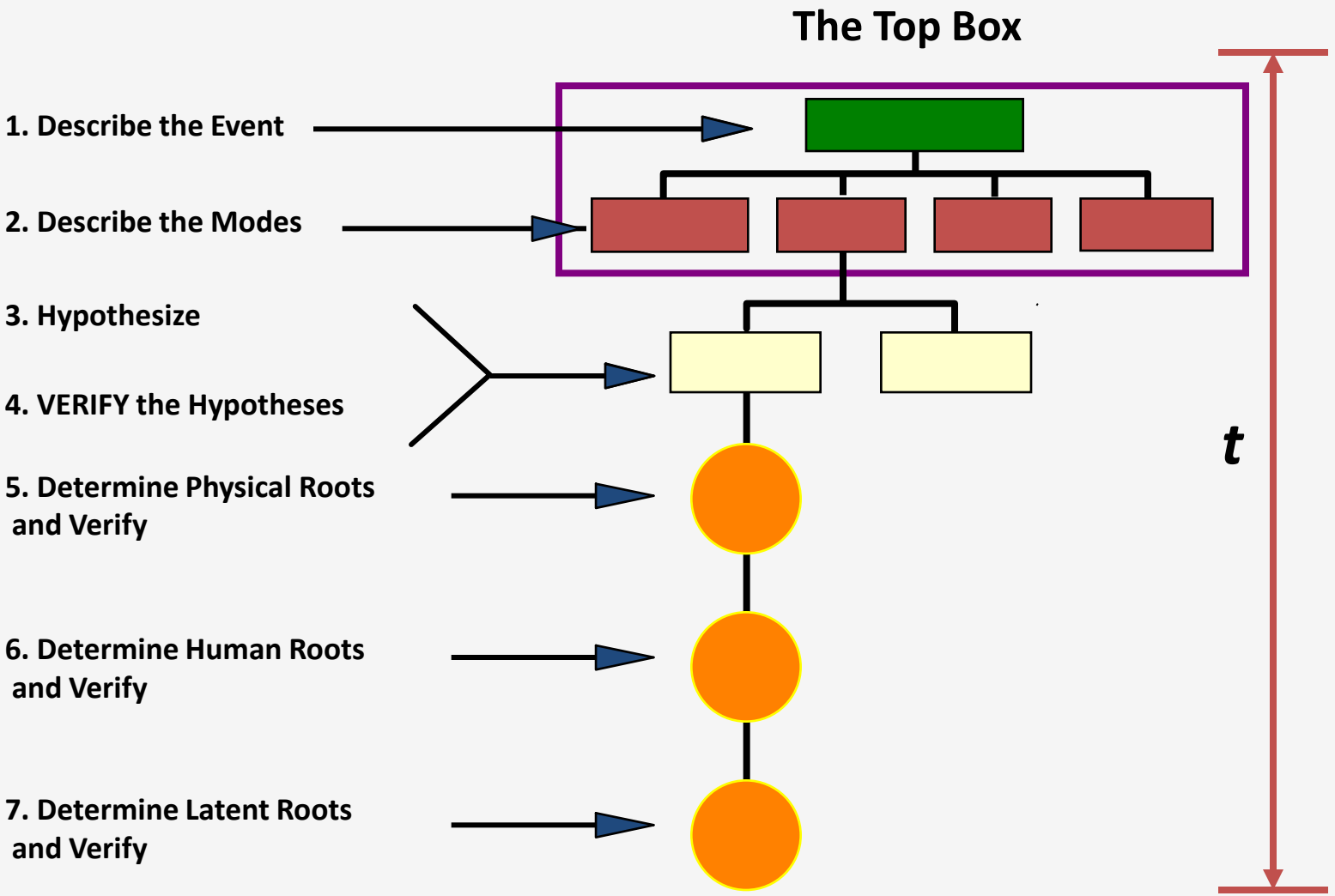
Tracking For Bottom-Line Results → **Quantify Impact**

Getting to the 'True' Root Causes

The Germination of a Failure

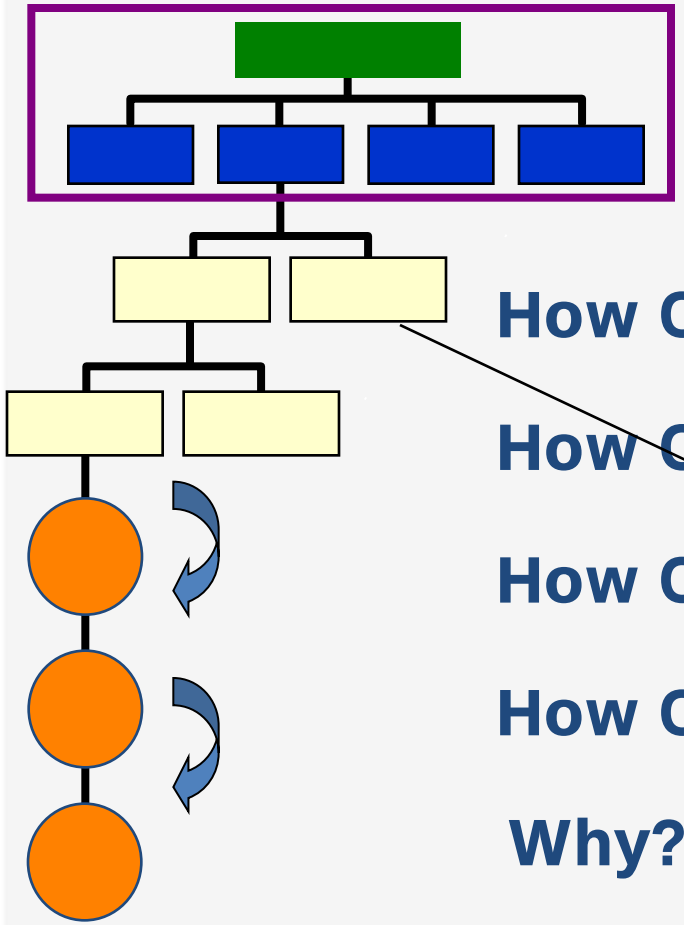


The Basic Logic Tree Construction



RCA Tool Check!

Root Cause Analysis: The establishing of logically complete, evidence-based, tightly coupled chains of factors from the least acceptable consequences to the deepest significant underlying causes (www.rootcauselive.com)



HOW COULD? vs WHY?

Categorical vs Cause-and-Effect

How Could?

How Could?

How Could?

How Could?

Why?

Verification Log

Verification Method –

Verification Outcome –

Responsibility –

Due Date -

Exercise Time!

Conclusions

- Use RCA proactively with FMEA/OA to fund other proactive projects…RCA should be self-funding!
- Measure RCA ‘effectiveness’ across the system based on Quality and Patient Safety as opposed to compliance alone.

Parting Tip on 'Effective' Communication – Living With Engineers (Left Brainers)

Engineering Logic

A wife asks her engineer husband to buy one carton of milk, and if they have eggs, get 6."

A short time later the husband comes back with 6 cartons of milk.

The wife asks him, "Why the heck did you buy 6 cartons of milk?"

He replied, "They had eggs."

Food for Thought…

"We Never Seem to Have the Time and Budget to do Things Right, But we Always Seem to Have the Time and Budget to do them Again!"

THANK YOU!

If you would like me to email you the Excel File shown earlier to help you conduct an Opportunity Analysis (OA) or the Blood Redraw OA Report, please let me know at:

blatino@reliability.com
www.reliability.com

Given What We Have Learned in This Session About Using RCA Proactively, What is Preventing Us From Doing So?

VAHQ Bonus:
RCA Video on 'Why Some RCA Efforts Are Ineffective"
http://www.reliability.com/rca2.html