Patient Safety: Root Cause Analysis

Lisa Ayoub-Rodriguez M.D.
Credit to: Heidi Lyn M.D.

Session time: 1:40pm – 2:25pm

Objectives

- Become familiar with the use of Root Cause Analysis in evaluating adverse outcomes in patient care
- Identify root cause/contributing factors in a given case.
- Categorize the root causes/identifying factors
- Suggest an action plan based on the factors identified.

Root Cause Analysis

- Root Cause Analysis is a process by which adverse patient outcomes are analyzed.
- An RCA Team consists of a small group of providers and hospital staff.
- It is a multidisciplinary approach.
- After an incident has occurred ideally ASAP.

Sentinel Event

- An unexpected occurrence involving death or serious psychological or physical injury, signaling the need for immediate investigation and response.

Process for Root Cause Analysis

- Step 1 – Investigate the Occurrence
- Step 2 – Identify Proximate Causes
- Step 3 – Identify the Root Cause
- Step 4 – Identify Previous Missed Opportunities
- Step 5 – Develop Corrective Actions

Investigate the Occurrence

- Interview staff / physicians involved.
- Determine the sequence of events.
- Contrast the sequence of events with the process as intended to identify inappropriate acts.
- Review all relevant policies, procedures, protocols, and guidelines that are intended for use by physicians and staff.
- If equipment or devices are involved, evaluate whether they malfunctioned, review maintenance records, and assure that the device is sequestered by Clinical Engineering.

Identify Proximate Causes

- Qualify, validate, and verify all information collected in the investigation.
- Conduct a literature review of evidence-based practice and best practices. Include a search for Sentinel Event Alerts on the Joint Commission website.

Identify the Root Cause

- The process is the focus, not individual performance.
- The event or combination of events that initiate a failure.
- Consider WHY the individual committed the inappropriate act.
- Determine HOW the system influenced the individual's thinking.
- Root Cause
  - Event or events that initiate failure
- Contributory Cause
  - Did not initiate the failure, but contributed to the outcome

Examples of Root Causes

- Communication
- Training
- Fatigue/scheduling
- Environmental
- Rules/ policy
- Barrier factors

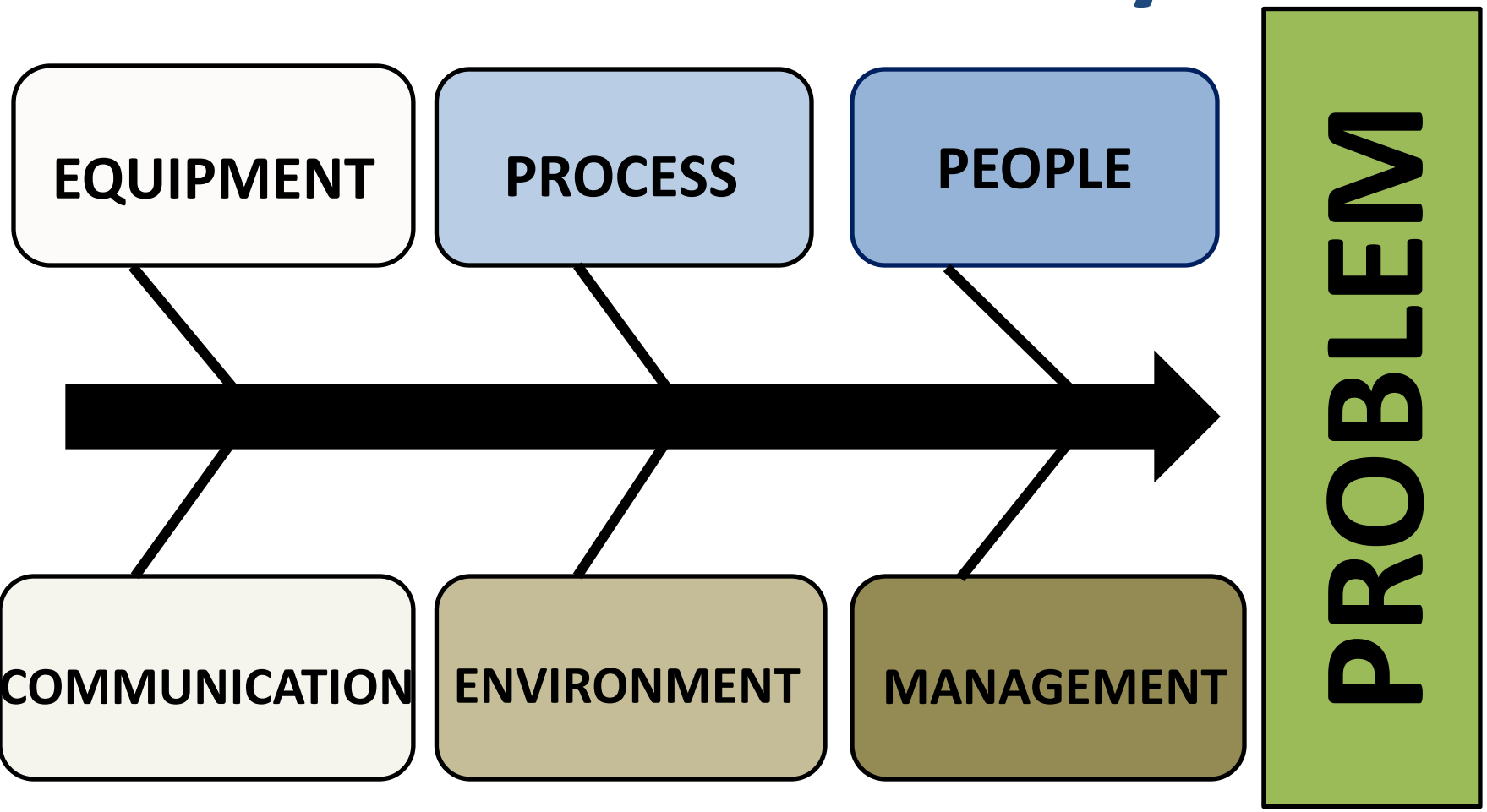
Identify Previous Missed Opportunities

- Determine whether previous similar occurrences have happened in the past
- Evaluate the effectiveness of corrective actions for these events

Develop Corrective Actions

- Include remedial and interim actions to reduce the risk of occurrence during the short term
- Assure robust corrective actions that address the Root Cause(s) and Latent Factors

Root Cause Analysis



Example

- A patient in a locked ward was found on the floor in his room with 3rd degree burns to his chest and arm. The patient had last been seen requesting a cigarette. A partially burned restraint was still attached to the patient's wheelchair.

Brief Timeline

- Patient in locked ward
- Patient in wheelchair
- Restraint used to maintain position in wheelchair
- Patient requests cigarette and lighter
- Staff provide smoking materials
- Short staffed
- Patient left unattended
- Patient uses lighter to ignite restraint
- Restraint burns and patient slips out of chair
- Patient found burned, laying on floor

Root Cause/Contributing Factors

- Lack of staff competency in restraint use led to patient being tied in his chair, decreasing his ability to escape in an emergency
- Lack of restraint alternative devices resulted in patient being tied into his wheelchair
- Policy of providing lighters to patients increased likelihood that patient or others could be injured by fire
- Inadequate staffing resulted in unsupervised smoking increasing the likelihood that patients could be injured by fire
- The highly combustible nature of the restraint increased the likelihood that the restraint would ignite and burn.

Guidelines for Corrective Action Plans

- RCA Corrective Action Plans are based on investigation findings. Action items should address:
  - System weaknesses that are most directly associated with the event.
  - Steps in the process that are susceptible to failure or breakdown.

Hierarchy of Corrective Actions

Weaker Impact	Intermediate Impact	Stronger Impact
Training / education	Workload or staffing changes	Engineering controls
Change of a form	Reduction of interruptions and / or distractions	Physical and / or structural changes to the environment
Utilization of a label	Checklists	Standardization and hardwiring of a process
Additional study	Cognitive aids	Cultural change
New procedures	Double-checks and / or read-backs	Software changes
	Redundancy	Simplification of the process (reduce or change number of steps)
	Communication structure	

Corrective Action for each Type of Error

Skill-based	Rule-based	Knowledge-based
Limiting memory requirements	Training by subject matter experts in specific area(s)	Oversight by more experienced individuals
Standardization of the process	Accountability measures	Creation of assignments with understanding of individuals' previous knowledge
Reducing distractions during critical parts of a process	Establishment of rule-based procedures that are also evidence based	Problem solving training
Reducing time constraints when appropriate	Scripting of communication	Familiarization with work process
Structure communication (SBAR)		Orientation training and validation (testing) of knowledge
Close supervision		
Safety culture training		

Effectiveness of Error-Prevention Strategies

Most Effective

Least Effective

1. Design process for minimum error: "*Mistake-Proof*" it.
2. Control errors with active safety devices.
3. Provide warning devices for manual actions.
4. Use procedures for reduction of error and control.
5. Use administrative controls for reduction of error.
6. Rely on knowledge and skill of staff.

Type of SERIOUS SAFETY EVENT:
List the Latent Weaknesses that contributed to the event (Inappropriate acts; system failures; equipment/device issues; etc.):
State the Root Cause(s):
List Corrective Action(s) for each Root Cause and Contributing Factor:

#	Corrective Actions	Person(s) Responsible	Due Date

Example Case

- Review case (5 mins)
- Discuss contributing and root causes in a group (5 mins)
- Share causes (5 mins)
- Discuss action plans (5 mins)
- Share action plan (5 mins)

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