

## Reducing Harm Utilizing the Model for Improvement Framework

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## Conflict of Interest Disclosure

Thomas Bates, MBA, BSN, RN, CPHQ, CPHRM, LNCC,  
reported no relevant financial relationships or relationships  
he has with ineligible companies of any amount during the  
past 24 months.



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## Objectives

- Explain why and how fundamental change is necessary when creating action plans that help prevent repeat adverse events
- Analyze why a small-scale test of a proposed action plan is important for successful implementation
- Evaluate the Model for Improvement framework and how it can be integrated into your Root Cause Analysis work

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## Gold Mine!

### Hoard of 700 Civil War-era gold coins unearthed in Kentucky cornfield, collectors say

**Amaris Encinas** USA TODAY

Published 7:28 p.m. ET July 13, 2023 | Updated 11:21 a.m. ET July 14, 2023

*The New York Times*

### *Over 700 Civil War-Era Gold Coins Found Buried on a Kentucky Farm*

“This is the most insane thing ever,” said the man who unearthed the coins in a cornfield, according to a video posted last month.

<https://www.usatoday.com/story/news/nation/2023/07/13/great-kentucky-hoard-gold-found-cornfield/70412118007/>



Mintgov.com

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# What is harm?



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## Adverse Events

Last Updated: 09-07-2023

Every year, millions of Medicare patients experience adverse events and temporary harm events as a result of medical care or in a health care setting. These events can be the result of errors, substandard care, known side effects, or unexpected complications that may not have been preventable. Although most harm events resolve quickly, some have long-term and serious implications for patient health. Despite nationwide efforts to improve patient safety, reducing patient harm remains a challenge for the Department of Health and Human Services (HHS) and our Nation's health care providers. OIG is committed to helping HHS agencies determine the impact of harm events in Federal programs and supports new and existing efforts with recommendations to improve patient safety.

Initially prompted by a mandate in the Tax Relief and Health Care Act of 2006, OIG has produced a body of work related to patient safety and adverse events. This work includes publishing, in 2010, the

<https://oig.hhs.gov/reports-and-publications/featured-topics/adverse-events/>

### Key Terms

**Patient Harm** - Harm to a patient as a result of medical care or in a health care setting, including the failure to provide needed care. Patient harm refers collectively to adverse events and temporary harm events.

**Adverse Event** - An event in

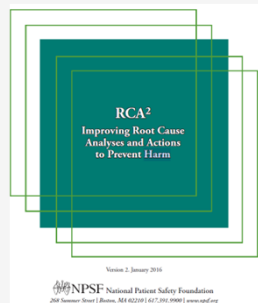
**Adverse Event** - An event in which care resulted in an undesirable clinical outcome-an outcome not caused by underlying disease-that prolonged the patient stay, caused permanent patient harm, required life-saving intervention, or contributed to death.

**Temporary Harm Event** - An event in which care resulted in patient harm and required medical intervention but did not prolong the patient stay, cause lasting harm, or require life-sustaining intervention.

**All-Cause Harm** - Patient harm, regardless of preventability or cause. OIG captures all-cause harm in its adverse event reports.

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# What is harm?



- Close Call/Near Miss: A close call is an event or situation that could have resulted in an adverse event but did not, either by chance or through timely intervention. Sometimes referred to as near miss incidents.<sup>(9)</sup>
- Adverse Event: Untoward incident, therapeutic misadventure, iatrogenic injury, or other occurrence of harm or potential harm directly associated with care or services provided.<sup>(7)</sup>

<https://www.ihi.org/resources/Pages/Tools/RCA2-Improving-Root-Cause-Analyses-and-Actions-to-Prevent-Harm.aspx>

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# What is harm?



In the IHI Global Trigger Tool, the definition used for harm is as follows: unintended physical injury resulting from or contributed to by medical care that requires additional monitoring, treatment or hospitalization, or that results in death.

<https://www.ihl.org/resources/Pages/IHIWhitePapers/IHIGlobalTriggerToolWhitePaper.aspx>

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# What is harm?

## Incidence of Adverse Events and Negligence in Hospitalized Patients — Results of the Harvard Medical Practice Study I

Troyen A. Brennan, M.P.H., M.D., J.D., Lucian L. Leape, M.D., Nan M. Laird, Ph.D., Liesi Hebert, Sc.D., A. Russell Localio, J.D., M.S., M.P.H., Ann G. Lawthers, Sc.D., Joseph P. Newhouse, Ph.D., Paul C. Weiler, LL.M., and Howard H. Hiatt, M.D.

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Article Figures/Media

20 References 2879 Citing Articles Letters

### Abstract

#### BACKGROUND

As part of an interdisciplinary study of medical injury and malpractice litigation, we estimated the incidence of adverse events, defined as injuries caused by medical management and of the subgroup of such injuries that resulted from negligent or substandard care.

#### METHODS

February 7, 1991  
N Engl J Med 1991; 324:370-376  
DOI: 10.1056/NEJM199102073240604

#### Related Articles

**CORRESPONDENCE** JUL 18, 1991  
Incidence of Adverse Events and Negligence in Hospitalized Patients

NEJM  
CareerCenter

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# What is harm?



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**HEALTH AND SAFETY CODE - HSC**  
**DIVISION 2. LICENSING PROVISIONS [1200 - 1796.70]** ( Division 2 enacted by Stats. 1939, Ch. 60. )  
**CHAPTER 2. Health Facilities [1250 - 1339.59]** ( Chapter 2 repealed and added by Stats. 1973, Ch. 1202. )

**ARTICLE 3. Regulations [1275 - 1289.5]** ( Article 3 added by Stats. 1973, Ch. 1202. )

**1279.1.** (a) A health facility licensed pursuant to subdivision (a), (b), or (f) of Section 1250 shall report an adverse event to the department urgent or emergent threat to the welfare, health, or safety of patients, personnel, or visitors, not later than 24 hours after the adverse event with applicable law.

(b) For purposes of this section, "adverse event" includes any of the following:

(1) Surgical events, including the following:

- (A) Surgery performed on a wrong body part that is inconsistent with the documented informed consent for that patient. A reportable e the course of surgery or a situation that is so urgent as to preclude obtaining informed consent.
- (B) Surgery performed on the wrong patient.
- (C) The wrong surgical procedure performed on a patient, which is a surgical procedure performed on a patient that is inconsistent with does not include a situation requiring prompt action that occurs in the course of surgery, or a situation that is so urgent as to preclude l
- (D) Retention of a foreign object in a patient after surgery or other procedure, excluding objects intentionally implanted as part of a pla
- (E) Death during or up to 24 hours after induction of anesthesia after surgery of a normal, healthy patient who has no organic, physioki operation is to be performed are localized and do not entail a systemic disturbance.

(2) Product or device events, including the following:

https://leginfo.ca.gov/faces/codes\_displaySection.xhtml?sectionNum=1279.1&lawCode=HSC

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# Sources of harm

World Health Organization Health Topics Countries Newsroom Emergencies

avoidable harm, make error less likely and reduce impact of harm when it does occur."

**Common sources of patient harm**

**Medication errors.** Medication-related harm affects 1 out of every 30 patients in health care, with more than a quarter of this harm regarded as severe or life threatening. Half of the avoidable harm in health care is related to medications (3).

**Surgical errors.** Over 300 million surgical procedures are performed each year worldwide (6). Despite awareness of adverse effects, surgical errors continue to occur at a high rate: 10% of preventable patient harm in health care was reported in surgical settings (2), with most of the resultant adverse events occurring pre- and post-surgery (7).

**Health care-associated infections.** With a global rate of 0.14% (increasing by 0.06% each year), health care-associated infections result in extended duration of hospital stays, long-standing disability, increased antimicrobial resistance, additional financial burden on patients, families and health systems, and avoidable deaths (8).

**Sepsis.** Sepsis is a serious condition that happens when the body's immune system has an extreme response to an infection. The body's reaction causes damage to its own tissues and organs. Of all sepsis cases managed in hospitals, 23.6% were found to be health care associated, and approximately 24.4% of affected patients lost their lives as a result (9).

**Diagnostic errors.** These occur in 5–20% of physician–patient encounters (10,11). According to doctor reviews, harmful diagnostic errors were found in a minimum of 0.7% of adult admissions (12). Most people will suffer a diagnostic error in their lifetime (13).

**Patient falls.** Patient falls are the most frequent adverse events in hospitals (14). Their rate of occurrence ranges from 3 to 5 per 1000 bed-days, and more than one third of these incidents result in injury (15), thereby reducing clinical outcomes and increasing the financial burden on systems (16).

**Venous thromboembolism.** More simply known as blood clots, venous thromboembolism is a highly burdensome and preventable cause of patient harm, which contributes to one third of the complications attributed to hospitalization (17).

**Pressure ulcers.** Pressure ulcers are injuries to the skin or soft tissue. They develop from pressure to particular parts of the body over an extended period. If not promptly managed, they can have fatal complications. Pressure ulcers affect more than 1 in 10 adult patients admitted to hospitals (18) and, despite being highly preventable, they have a significant impact on the mental and physical health of individuals, and their quality of life.

**Unsafe transfusion practices.** Unnecessary transfusions and unsafe transfusion practices expose patients to the risk of serious adverse transfusion reactions and transfusion-transmissible infections. [Data](#) on adverse

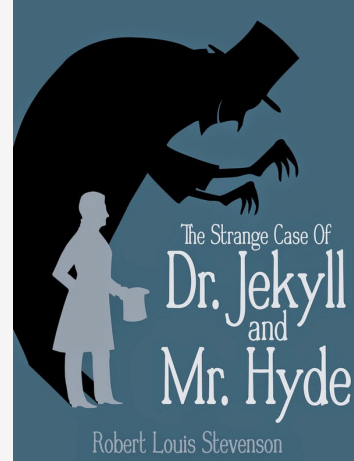
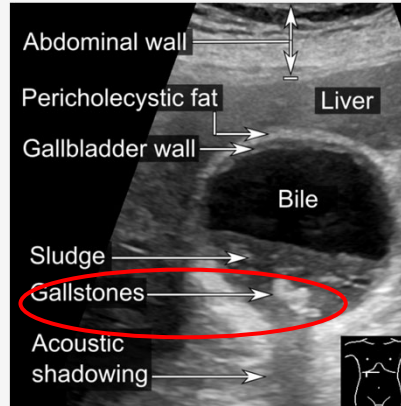
https://www.who.int/news-room/fact-sheets/detail/patient-safety

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# Latency

"the fact of being present but needing conditions to become active, obvious, or completely developed".

-Cambridge Dictionary



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# Latent conditions in healthcare

TRANSLATE INTO ERROR-PROVOKING CONDITIONS IN THE WORKPLACE

- Time pressures
- Understaffing
- Inadequate equipment
- Fatigue
- Inexperience

AND/OR

CREATE LONGLASTING HOLES OR WEAKNESSES IN THE DEFENSES

- Untrustworthy safety "flags" and indicators
- System deficiencies
- Unworkable procedures
- Unworkable designs

Often results in disengagement, leadership, staff and faculty turnover. "I didn't get into healthcare for this"

CAN BE IDENTIFIED AND REMEDIED BEFORE AN ADVERSE EVENT OCCURS

BY ANALYZING NEAR MISS EVENTS!

Reason, J. "Human error: Models and management." *BMJ*, vol. 320, no. 7237, 2000, pp. 768-770, <https://doi.org/10.1136/bmj.320.7237.768>.

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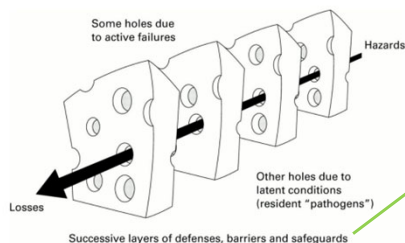
# Defenses and barriers

## Open School

### Patient Safety 101: From Error to Harm (Formerly "Fundamentals of Patient Safety")

#### Lesson 1: The Swiss Cheese Model

- The Swiss cheese model is a useful way to think about errors in complex organizations.



Open School image from [www.education.ihl.org](http://www.education.ihl.org)

#### Examples of defenses, barriers, safeguards:

- Two identifiers (Name and DOB)
- Bar Code Medication Administration
- Two RNs double-checking insulin dose
- IV pump safeguards
- Surgical timeout
- RFID system for counting sponges
- Good handoff communication technique
- Bed alarms
- Appropriate alarm limits
- Critical value communication policy
- Critical thinking – Does this make sense?
- Your “gut” (something doesn’t feel right)
- Giving people permission to hold you accountable for safety and quality
- Leaving your personal life at home
- Being “present” at work
- Owning safety and quality in your work area
- Unit and System goals centered on safety and quality
- Leadership engagement
- Just Culture

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# The essential role of leadership

## Sentinel Alert Event

A supplementary publication of The Joint Commission  
Issue 57, March 1, 2017 Revised: June 18, 2021 (in red)

Published for Joint Commission-accredited organizations and interested health care professionals. Sentinel Alert identifies specific types of sentinel and adverse events and high risk conditions, describes their common underlying causes, and recommends steps to reduce risk and prevent future occurrences.

Accredited organizations should consider information in a Sentinel Alert when designing or redesigning processes and consider implementing relevant suggestions contained in the alert or reasonable alternatives.

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[www.jointcommission.org](http://www.jointcommission.org)

**The essential role of leadership in developing a safety culture**  
In any health care organization, leadership's first priority is to be accountable for effective care while protecting the safety of patients, employees, and visitors. Consistent and thoughtful leaders contribute to improvements in safety and organizational culture.<sup>1,2</sup> They understand that systemic flaws exist and each step in a care process has the potential for failure simply because humans make mistakes.<sup>3</sup> James Reason compared these flaws – latent hazards and weaknesses – to holes in Swiss cheese. These latent hazards and weaknesses must be identified and solutions found to prevent errors from reaching the patient and causing harm.<sup>4</sup> Examples of latent hazards and weaknesses include poor design, lack of supervision, and manufacturing or maintenance defects.

The Joint Commission's Sentinel Event Database reveals that leadership's failure to create an effective safety culture is a contributing factor to many types of adverse events – from wrong site surgery to delays in treatment.<sup>5</sup>

In addition, through the results of its safety initiatives, The Joint Commission Center for Transforming Healthcare has found inadequate safety culture to be a significant contributing factor to adverse outcomes. Inadequate leadership can contribute to adverse events in various ways, including but not limited to these examples:

- Insufficient support of patient safety event reporting<sup>6</sup>
- Lack of feedback or response to staff and others who report safety vulnerabilities<sup>7</sup>
- Allowing intimidation of staff who report events<sup>8</sup>
- Refusing to consistently prioritize and implement safety recommendations<sup>9</sup>
- Not addressing staff burnout<sup>10,11</sup>

In essence, a leader who is committed to prioritizing and making patient safety visible through every day actions is a critical part of creating a true culture of safety.<sup>12</sup> Leaders must commit to creating and maintaining a culture of safety; this commitment is just as critical as the time and resources devoted to revenue and financial stability, system integration, and productivity. Maintaining a safety culture requires leaders to consistently and visibly support and promote everyday safety measures.<sup>13</sup> Culture is a product of what is done on a consistent daily basis. Hospital team members measure an organization's commitment to culture by what leaders do, rather than what they say should be done.

<sup>1</sup>The Joint Commission accreditation manual glossary defines a leader as: "an individual who sets expectations, develops plans, and implements procedures to create and improve the quality of the organization's governance, management, and clinical and support functions and processes. At a minimum, leaders include members of the governing body and medical staff, the chief executive officer and other senior managers, the nurse executive, clinical leaders, and staff members in leadership positions within the organization."<sup>14</sup>

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*"In any health care organization, leadership's first priority is to be accountable for effective care while protecting the safety of patients, employees, and visitors."*

*"...latent hazards and weaknesses must be identified and solutions found to prevent errors from reaching the patient and causing harm."*

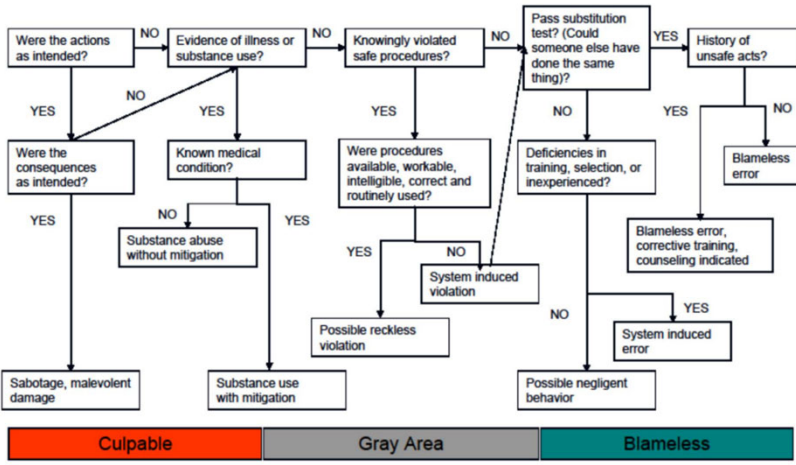
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<https://www.jointcommission.org/resources/sentinel-event/sentinel-event-alert-newsletters/sentinel-event-alert-57-the-essential-role-of-leadership-in-developing-a-safety-culture/>

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Execute Just Culture . . . UNSAFE ACTS ALGORITHM



Adapted from James Reason. (1997). *Managing the Risks of Organizational Accidents*.

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Version 2, January 2016

NPSF National Patient Safety Foundation  
268 Summer Street | Boston, MA 02210 | 617.391.9900 | www.npsf.org

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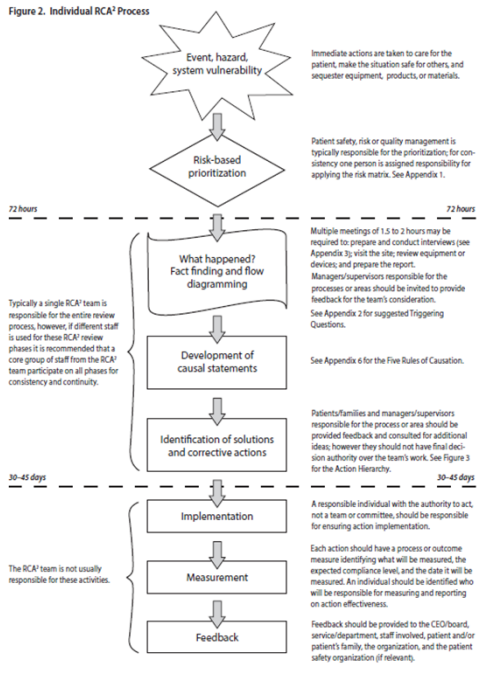


# Individual RCA<sup>2</sup> Process



<https://www.ihl.org/resources/Pages/Tools/RCA2-Improving-Root-Cause-Analyses-and-Actions-to-Prevent-Harm.aspx>

Figure 2. Individual RCA<sup>2</sup> Process

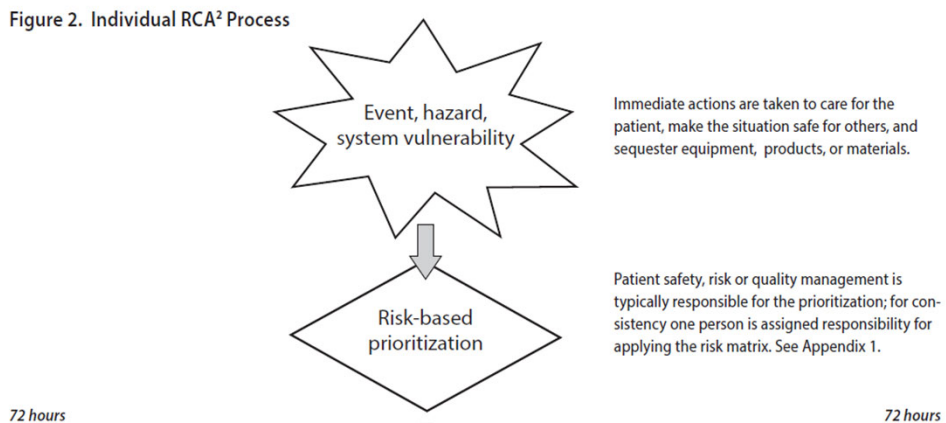


# Individual RCA<sup>2</sup> Process



<https://www.ihl.org/resources/Pages/Tools/RCA2-Improving-Root-Cause-Analyses-and-Actions-to-Prevent-Harm.aspx>

Figure 2. Individual RCA<sup>2</sup> Process

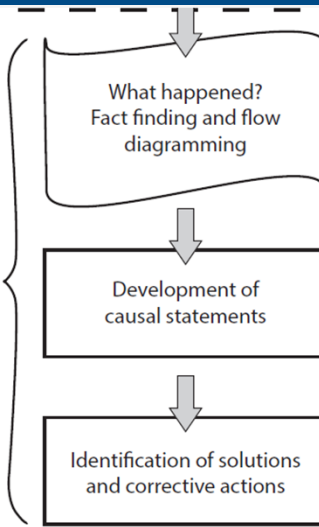


# Individual RCA<sup>2</sup> Process



Typically a single RCA<sup>2</sup> team is responsible for the entire review process, however, if different staff is used for these RCA<sup>2</sup> review phases it is recommended that a core group of staff from the RCA<sup>2</sup> team participate on all phases for consistency and continuity.

30–45 days



Multiple meetings of 1.5 to 2 hours may be required to: prepare and conduct interviews (see Appendix 3); visit the site; review equipment or devices; and prepare the report. Managers/supervisors responsible for the processes or areas should be invited to provide feedback for the team's consideration. See Appendix 2 for suggested Triggering Questions.

See Appendix 6 for the Five Rules of Causation.

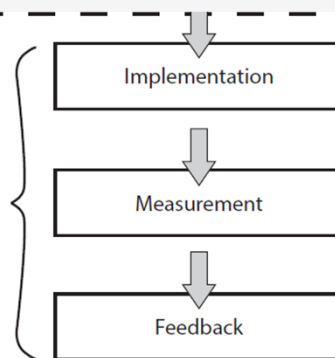
Patients/families and managers/supervisors responsible for the process or area should be provided feedback and consulted for additional ideas; however they should not have final decision authority over the team's work. See Figure 3 for the Action Hierarchy.

30–45 days

# Individual RCA<sup>2</sup> Process



The RCA<sup>2</sup> team is not usually responsible for these activities.



A responsible individual with the authority to act, not a team or committee, should be responsible for ensuring action implementation.

Each action should have a process or outcome measure identifying what will be measured, the expected compliance level, and the date it will be measured. An individual should be identified who will be responsible for measuring and reporting on action effectiveness.

Feedback should be provided to the CEO/board, service/department, staff involved, patient and/or patient's family, the organization, and the patient safety organization (if relevant).

# The most important step – The Action Plan



*"The most important step in the RCA<sup>2</sup> process is the identification and implementation of actions to eliminate or control system hazards or vulnerabilities that have been identified in the contributing factor statements."*

<https://www.ihj.org/resources/Pages/Tools/RCA2-Improving-Root-Cause-Analyses-and-Actions-to-Prevent-Harm.aspx>

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# Action Plan Items



1. "...Identify actions that prevent the event from recurring..."
2. "...if that is not possible, reduce the severity or consequences if it should recur"
3. "Teams should identify at least one stronger or intermediate strength action for each RCA<sup>2</sup> review."
4. "In some cases it may be necessary to recommend actions classified as weaker...as temporary measures until stronger actions can be implemented"

<https://www.ihj.org/resources/Pages/Tools/RCA2-Improving-Root-Cause-Analyses-and-Actions-to-Prevent-Harm.aspx>

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## Action Items

Less  
Human  
Involvement

More  
Human  
Involvement

Figure 3. Action Hierarchy

	Action Category	Example
Stronger Actions <small>(these tasks require less reliance on humans to perform the task correctly)</small>	Architectural/physical plant changes	Replace revolving doors at the main patient entrance into the building with powered sliding or swinging doors to reduce patient falls.
	New devices with usability testing	Perform heuristic tests of outpatient blood glucose meters and test strips and select the most appropriate for the patient population being served.
	Engineering control (forcing function)	Eliminate the use of universal adaptors and peripheral devices for medical equipment and use tubing/fittings that can only be connected the correct way (e.g., IV tubing and connectors that cannot physically be connected to sequential compression devices or SCDs).
	Simplify process	Remove unnecessary steps in a process.
	Standardize on equipment or process	Standardize on the make and model of medication pumps used throughout the institution. Use bar coding for medication administration.
	Tangible involvement by leadership	Participate in unit patient safety evaluations and interact with staff; support the RCA process; purchase needed equipment; ensure staffing and workload are balanced.
Intermediate Actions	Redundancy	Use two RNs to independently calculate high-risk medication dosages.
	Increase in staffing/decrease in workload	Make float staff available to assist when workloads peak during the day.
	Software enhancements, modifications	Use computer alerts for drug-drug interactions.
	Eliminate/reduce distractions	Provide quiet rooms for programming PCA pumps; remove distractions for nurses when programming medication pumps.
	Education using simulation-based training, with periodic refresher sessions and observations	Conduct patient handoffs in a simulation lab/environment, with after action critiques and debriefing.
	Checklists/cognitive aids	Use pre-induction and pre-incision checklists in operating rooms. Use a checklist when reprocessing flexible fiber optic endoscopes.
	Eliminate look- and sound-alikes	Do not store look-alikes next to one another in the unit medication room.
	Standardized communication tools	Use read-back for all critical lab values. Use read-back or repeat-back for all verbal medication orders. Use a standardized patient handoff format.
Enhanced documentation, communication	Highlight medication name and dose on IV bags.	
Weaker Actions <small>(these tasks require more reliance on humans to remember to perform the task correctly)</small>	Double checks	One person calculates dosage, another person reviews their calculation.
	Warnings	Add audible alarms or caution labels.
	New procedure/memorandum/policy	Remember to check IV sites every 2 hours.
	Training	Demonstrate correct usage of hard-to-use medical equipment.

Action Hierarchy levels and categories are based on Root Cause Analysis Tools, VA National Center for Patient Safety, [http://www.patientsafety.va.gov/locations/rca\\_tools\\_7\\_15.pdf](http://www.patientsafety.va.gov/locations/rca_tools_7_15.pdf). Examples are provided here.

<https://www.ih.org/resources/Pages/Tools/RCA2-Improving-Root-Cause-Analyses-and-Actions-to-Prevent-Harm.aspx>

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## Measuring Action Implementation and Effectiveness

<https://www.ih.org/resources/Pages/Tools/RCA2-Improving-Root-Cause-Analyses-and-Actions-to-Prevent-Harm.aspx>

- Assign an individual with authority, not a committee. Why?
- Set a date by which the action must be completed
- Each action should have either a process measure or outcome measure – **ideally both**

Process Measure:

*Processes measure activity supporting the outcome measure*

Outcome Measure:

*Outcomes are measures of the performance of the system under study*

Confirm the action has been implemented

Determine if the action was effective

<https://www.ih.org/resources/Pages/Tools/RCA2-Improving-Root-Cause-Analyses-and-Actions-to-Prevent-Harm.aspx>

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# Donabedian Model



<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2690293/>

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# Action Implementation and Effectiveness Example



**Process Measure:**  
Processes measure activity supporting the outcome measure.

Observe 100 staff-patient encounters over a 7-day period with an expected compliance rate of 95%

Confirm the action has been implemented

**Outcome Measure:**  
Outcomes are measures of the performance of the system under study.

Reduce rate of CLABSI by 10% by end of FYXX QX

Determine if the action was effective

<https://www.jhi.org/resources/Pages/Tools/RCA2-Improving-Root-Cause-Analyses-and-Actions-to-Prevent-Harm.aspx>

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# Examples of Personal Measures

TYPE OF MEASURE	Face-to Face Family Time	Increase Personal Cash Flow	Become More Romantic	Lose Weight
<b>Outcome</b>	Increase the number of hours per week of face-to-face family time by end of December 20XX	Increase balance in checking account by \$5,000 a month for next 6 months	Increase spousal satisfaction with level of romance in marriage as measured on a Likert scale survey given every 2 weeks	Lose ten pounds so I can have the summer body I always wanted over the next 180 days
<b>Process</b>	Cut off all family computer use for a period of 6 months	Watch 10 Instagram "side-hustle" videos in the next 2 weeks and choose side-hustle with the most likes	Give spouse flowers 3x per week for 3 weeks	Go the gym twice a day every day for the next 180 days
<b>Balancing ("Side-Effect")</b>	Percentage of homework completed and turned in by son on Google Classroom	Presence of neck soreness from time spent on mobile phone watching Instagram videos	Spouse's perception of the value of receiving flowers	# of injuries leading to immobility and required rest and inability to go to gym

Metrics health system must track to ensure an improvement in one area is not negatively impacting another area

\*Don't forget to use SMART goals

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# Examples of Work Measures

TYPE OF MEASURE	Reduce the rate of falls with injuries	Adverse Drug Events	Reduce the Average Length of Stay	Increase Admissions	Reduce MRSA Bacteremia
<b>Outcome</b>	Reduce Falls with injury per 1000 patient days	Reduce the number of adverse drug events per 100 admissions	Reduce the average length of stay by 10%	Increase admissions by 5%	Reduce current SIR to target benchmark SIR
<b>Process</b>	Compliance with completion of Fall Risk Scale; Compliance with hourly rounding	Percent of unreconciled medications	Percentage of patients discharged before 1100; Delays in clinicians ordering diagnostic testing	Institute a "no-diversion" policy in the ER	Compliance with contact precautions; Compliance with hand hygiene observations
<b>Balancing ("Side-Effect")</b>	Timely RN availability for all assigned patients	Physician burnout from spending too much time in the EHR	Patient satisfaction	Time in minutes to admit to an inpatient bed once order written	Increasing SIR for other HAIs

Metrics health system must track to ensure an improvement in one area is not negatively impacting another area

\*Don't forget to use SMART goals

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## Common Frustrations with RCAs

- Difficulty identifying stronger action plans due to the nature of healthcare
- Obtaining local unit/departmental input to action plans
- Action plan compliance engagement “drop-off” over time
- Poor engagement from leadership
- Leadership turnover
- Inability to cohesively identify systemic trends
- Low reporting of near misses/close calls
- Not enough resources to effectively perform RCAs

**SAME EVENTS OCCUR AGAIN AND AGAIN**



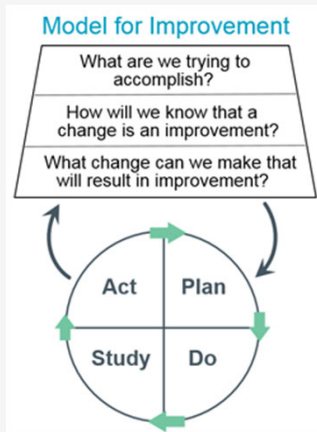
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## Model for Improvement

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# What is the Model for Improvement?

Developed by Associates in Process Improvement and adopted by the Institute for Healthcare Improvement as the framework to guide improvement work.

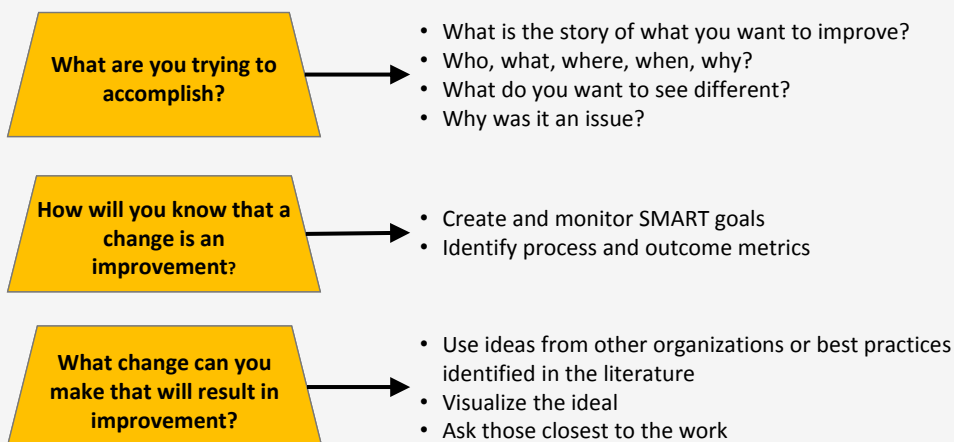


*Three fundamental questions* that guide improvement work AND the *PDSA Cycle*

<https://www.ihl.org/resources/Pages/HowtoImprove/default.aspx>

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# Three Fundamental Questions



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# PDSA/(PDCA) Cycle-Testing proposed changes

## PLAN

- What is the question you are trying to answer?
- What are your predictions?
- What is the theory behind the change?
- Plan to carry out the PDSA cycle (who, what, where and when)
- Plan for data collection

## DO

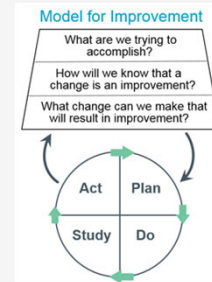
- Put the plan into action
- Document problems and unexpected observations
- Begin analysis of the data

## STUDY

- Complete the analysis of the data
- Compare data to predictions
- Take time to review and summarize what was learned
- Actions that follow will be based on knowledge from the test

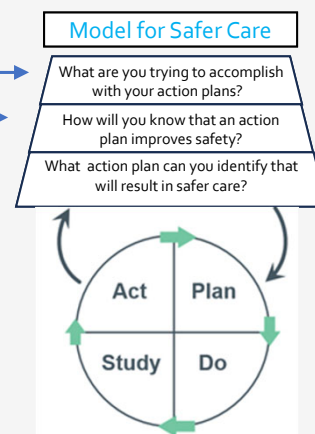
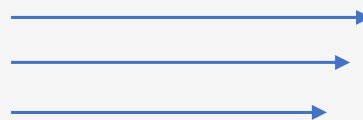
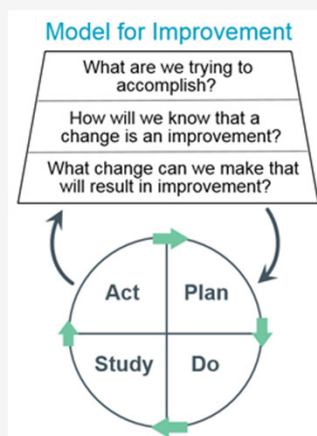
## ACT

- Decide what action is warranted – Implement?
- Refine the change and test again?
- Abandon a particular change and develop a new one?



Adapted from Langley, Gerald J., et al. "The Plan-Do-Study-Act Cycle Chapter 5." *The Improvement Guide: A Practical Approach to Enhancing Organizational Performance*, Jossey Bass, San Francisco, CA, 2009, p. 97.

# Model for Improvement of Action Plan item compliance



**AN ACTION PLAN IS CHANGE**

**MAKING CARE SAFER IS AN IMPROVEMENT**

Adapted from <https://www.ihl.org/resources/Pages/Howtoimprove/default.aspx>

## Three Fundamental Questions to guide patient safety improvement

**What action plans are you trying to implement?**

- What is the patient safety story? What do you want to make safer?
- Who, what, where, when, why
- What do you want to see different?
- Why is/was it an issue?

**How will you know that a change via an action plan item is an improvement in patient safety?**

- Create and monitor SMART goals.
- Each action plan item should include a process and/or outcome metric

**What action plans can you identify that will result in an improvement in patient safety?**

- Use ideas from other organizations or best practices identified in the literature
- Visualize the ideal
- Ask those closest to the work

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## PDSA/(PDCA) Cycle-Testing proposed Action Plan items\*

**PLAN**

- What is the patient safety question you are trying to answer?
- **Is there resistance to adoption of proposed action plan items?**
- What are your predictions about the action plan item?
- What is the theory behind the change?
- Plan to carry out the PDSA cycle (who, what, where and when)
- Plan for data collection pre-implementation of the action plan and after the implementation to analyze performance

**DO**

- Put the action plan item into action
- Document problems and unexpected observations
- Begin analysis of the data

**STUDY**

- Complete the analysis of the data
- Compare data to predictions
- Take time to review and summarize what was learned
- Actions that follow will be based on knowledge from the test

**ACT**

- Decide what action is warranted – Implement the action plan item?
- Refine the action plan item and test again?
- Abandon a particular action plan item and develop a new one?

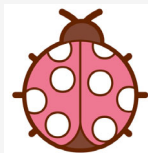
**\*Some action plan items need to be implemented immediately.**

• Consider urgent and emergent impacts to patients.

• Consider available resources

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# Principles for testing a change



## Keep tests on a small scale initially

- Test with either one person or unit/department or handful of people/units
- Test for a short time period – **perform rapid cycles – Days and perhaps a week or weeks. NOT MONTHS**
- Increase the scale of the test on the basis of learning (as ability to predict the result of a test improves)



## As scale of test is expanded, include differing conditions

- Different types of nursing units
- Different days of the week or different shifts
- New versus experienced staff
- Different types of hospitals (if a system)



## Plan the test, including the collection of data

- Explicitly document what is being tested and who will do what, when, and where to provide clarity for all involved
- Plan for the collection of data
- Everyone involved should know why the test is being conducted

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# Types of change

## Reactive

*Maintain the system at its current level of performance*

- Often made routinely to solve problems
- Often result in putting system back to where it was before
- Impact **usually felt immediately or in the near future**
- Often the best strategy
- After change made, perception that an immediate problem has been solved

**EXAMPLES:**

1. OR checks current inventory of implantables to ensure none are expired
2. Necessity to fix a pipe that broke in GI Lab causing lost revenue and excessively high water bill
3. Intervention to prevent CDPH-reportable falls with injury such as use of sitter for confused patient with no family at the bedside

## Fundamental

*Prevent problems from recurring. Create a new system of performance*

- Required to improve the system beyond historical levels
- Result from design or redesign of some aspect of the system or the system as a whole
- **Necessary for the improvement of a system not plagued by problems**
- Fundamentally alters how system works and what people do
- Often result in improvement of several measure simultaneously (quality AND cost etc.)
- Impact felt **into the future**

**EXAMPLES:**

1. New technology deployed using bar scanning to ensure no expired implantables placed on the sterile field
2. Redesigning a nursing unit to provide maximal visibility and promote frequent double checking of high-risk for fall patients
3. Designing or redesigning a Sensitive Health Exam program

**CONSIDER THE TYPE OF ACTION PLAN THAT IS MOST APPROPRIATELY MATCHED WITH THE TYPE OF CHANGE YOU DESIRE**

Adapted from Langley, Gerald J., et al. "Ch. 6: Reactive versus Fundamental Change and Theory for Change." *The Improvement Guide: A Practical Approach to Enhancing Organizational Performance*, Jossey Bass, San Francisco, CA, 2009, pp. 111–119. CALIFORNIA HOSPITAL ASSOCIATION 38

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**Generalization 6-1:** The relative advantage of an innovation, as perceived by members of the social system, is positively related to its rate of adoption

What is the degree to which an action plan item is perceived as being better than the idea it supersedes?

Do people believe the change addresses an existing problem?

**Generalization 6-2:** The compatibility of an innovation, as perceived by members of a social system, is positively related to its rate of adoption.

What is the degree to which an action plan item is perceived as consistent with the existing values, past experiences, and needs of potential adopters?



**Generalization 6-3:**

The **complexity** of an innovation, as perceived by members of a social system, is negatively related to its rate of adoption

**What is the degree to which an action plan item is perceived as relatively difficult to understand and implement?**

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**Generalization 6-4:**

The **trialability** of an innovation, as perceived by the members of the social system, is positively related to its rate of adoption

**Can the action plan item be experimented with on a limited basis?**

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**Generalization 6-5:**  
The **observability** of an innovation, as perceived by members of the social system, is positively related to its rate of adoption

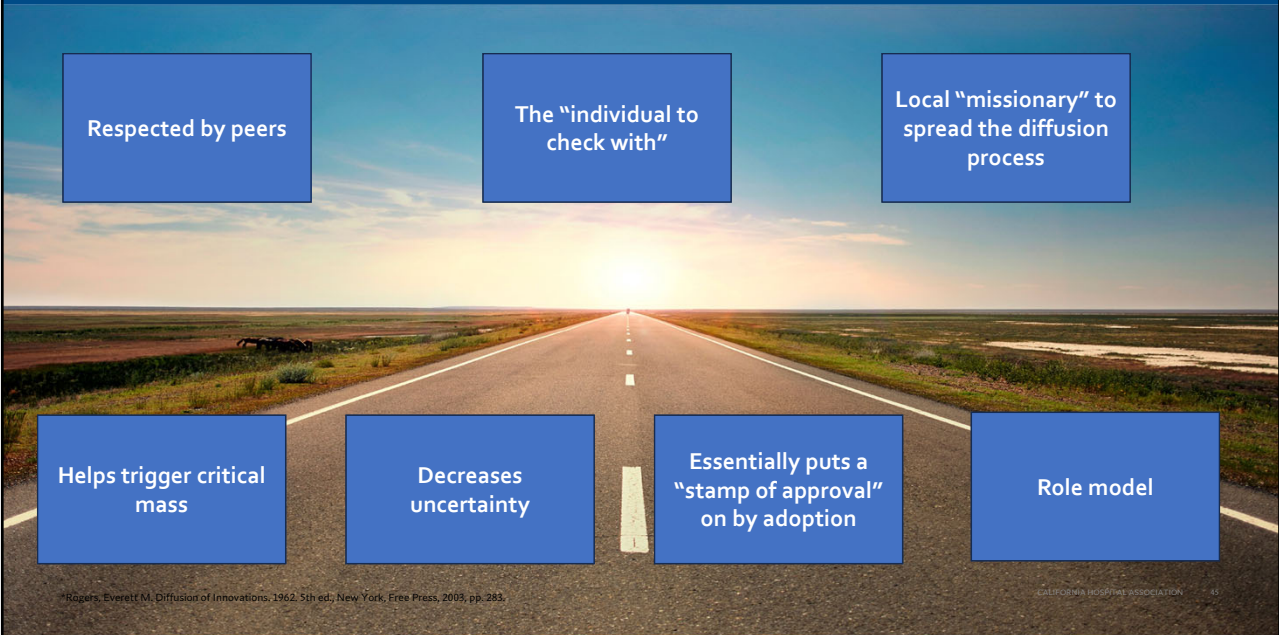
**What is the degree to which an action plan item is easily observed and communicated to other people?**

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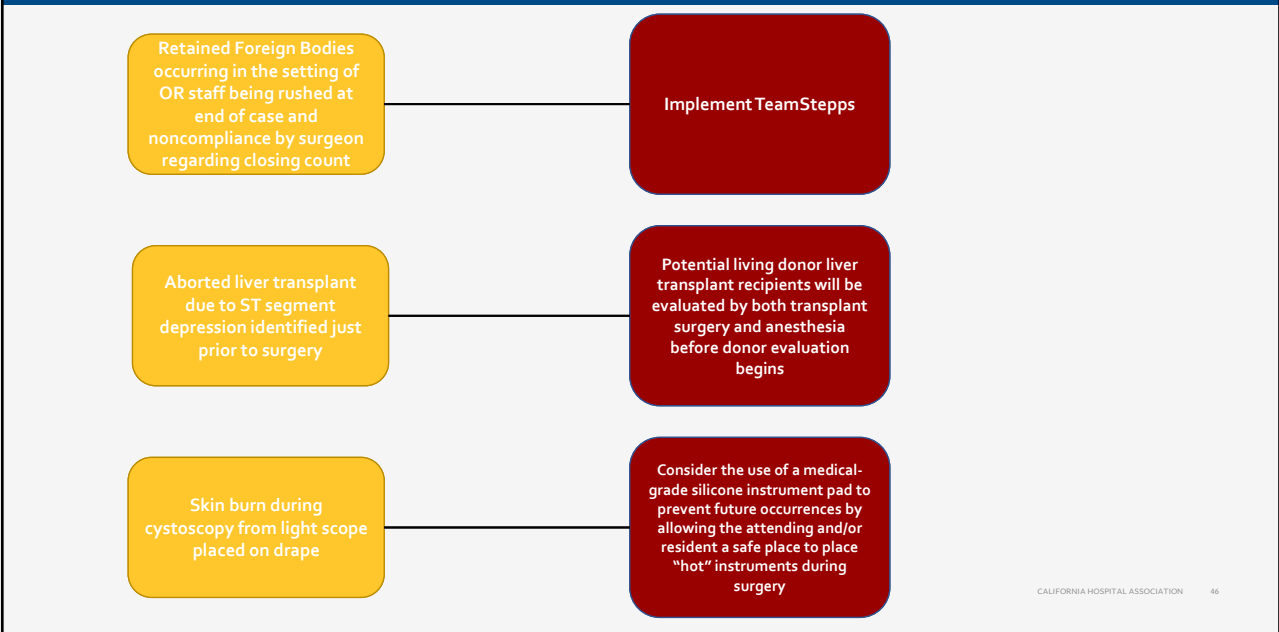
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# Early adopters are important



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# Which action item requires testing before implementation?



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## Which action item requires testing before implementation?

Delayed reporting of critical radiology finding (subdural hematomas) – report with delayed read

Discuss the feasibility of the use of clinical reporting software for the Imaging Department with senior leadership, which is stratified by level of urgency and records attempts and success in contacting appropriate physician or physician designee

Patient with diagnosis of SCC to left nose who underwent Mohs surgery to the right nose in error

Identify method(s) to increase (if possible) the submission of photographs from outside dermatology physicians to the Mohs surgeon

During pathology grossing process, 2 instances of tissue mix-up occurred within a relatively short time period

Implement a one-specimen workflow (one specimen on the grossing table at a time) system

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## Which action item requires testing before implementation?

Patient Identification Error

Creation of a best-practice video with mandated viewing by all employees

Decrease toxicity of current work environment in ICU

Implement Nursing Professionalism program

Multiple wrong patient/ wrong procedures (Imaging) due to lack of compliance with standardized patient ID workflow for portable x-rays

Creation of new radiology guidelines (prep, exam check, and final check)

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### To avoid same patient safety events from occurring again and again:

- Identify if reactive or fundamental change is required
- Identify as strong of action plan items as possible
- Seek input about best action plan ideas from those closest to potential and actual patient safety errors
- Decide which action item is most appropriate to perform PDSA rapid cycle testing upon
- Ensure you include differing conditions when testing an action plan item
- Use data during testing to identify and increase the degree of belief that an action plan item will successfully help prevent future safety events
- Identify early adopters to trigger critical mass to adoption by others
- Remember that the foundation of spread is communication



## Questions

## Thank you

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