PI 201, Part 1: The **Processes** are the Solutions!

Kentucky Hospital Association

Who we are

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Quality Process Improvement Specialist

- Nurse since 2014
- Worked in quality since 2021
- Experience in PCU, Pediatrics, ED, and Quality

Billie Delauder, DNP, MSN, RN, CPHQ, HACP-CMS

Quality Process Improvement Specialist

- Nurse since 1987
- 17 years in quality as a PI Supervisor & Clinical Core Measure Abstraction Specialist
- Experience in Med-Surg, ED, and Quality
- 36 years at Pikeville Medical Center (1987-2023)

Casey Franklin, BSN, RN, WCC, CPHQ, HACP-CMS

Director of Quality and Health Professions

- Nurse since 2007
- Experience in Clinical Management, LTC, Home Health/ Hospice, & Quality
- 11 years at TJ Samson Community Hospital (2012-2023)

Housekeeping:

This is Part 1 of 2 September 25th at 1:00 EST
(Registration for Part 2 is linked here.)

Recording will be available on KHA Quality Website
(linked here.)

Type Questions into chat

Problem-Process-Tool Map

Problem/ Task	Process	Tool
Safety Event	RCAA	Gemba Process Map 5 Whys Brainstorming Fishbone
PIP (Take good to better, or bridge gaps.)	PDCA/ PDSA or other Rapid Cycle Improvement	A3 Gemba Voice of Customer Affinity Diagram Tree Diagram FMEA
Access safety of new process	Proactive RCAA or PDCA/ PDSA	A3 Tree Diagram Affinity Diagram FMEA Flowchart/ Process Map
Error-proof complex process	PDCA/ PDSA	A3 Affinity Diagram Checklist FMEA Flowchart/ Process Map Tree Diagram
Re-sequence a process for efficiency	Lean, Flowchart/ Process Map	6S Spaghetti Diagram Checklist Flowchart/ Process Map Tree Diagram
Prioritizing improvement activities	Lean	A3 Pareto

Course Content:

Today in Part 1, we will address the **Processes**:

- The RCAA
- Rapid Cycle Improvement
- PDSA/PDCA
- FMEA
- Key Lean Concepts

In Part 2 (coming soon to a Webex near you!), we will cover the **Tools**:

- The Gemba
- The Fishbone
- Bar Charts
- Control Charts
- Pareto Charts
- Scatter Diagrams
- A3

RCAA

RCAA: Demystifying, Part 1 and Part 2 links are here and found on KHAquality.com → Events → Past events

-Definition: systematic approach of looking at an event with a multidisciplinary team to determine where and how a process broke down.

-Finding the sources (root) of the event (cause) and breaking it down (analysis).

-2nd A stands for Action that will take place to prevent reoccurrence

RCAA

1. **Reactive** RCA^2 = Following a safety event.
2. **Proactive** RCA^2 = This is a prophylactic intervention to deter safety events from occurring*.

   *Oftentimes, organizations will find that using an FMEA (Failure Mode and Effects Analysis) or Probabilistic Risk Assessment will produce an excellent prospective snapshot of possible risks. You may hybridize these two tools, or else choose the one that fits your needs best.

Note= A “near miss” situation can be classified under either reactive or proactive based upon the details.

Near Miss Classification Examples:

- A wrong med identified at bedside prior to administration would be **reactive**.
- A condition causing a perceived risk factor that is called out ahead of any specific situations in which safety was threatened would be **proactive**.

RCAA

- Discovery - Define event, procedure, or circumstance *What happened?*
- Determination of all possible reasons an event occurred or could occur. *Why did/could it happen?*
- Formulation of possible solutions. *What can we do?*
- Selection of viable and effective solutions. *What action is best?*
- Implementation of chosen solutions.
- Evaluation of efficacy once solutions are in place.
- Continuing analysis after we are done.

RCAA

Roadblocks/ Solutions:

Lack of Resources

-Staff involved are not available to participate in RCAA and provide feedback. → Have staff with same training fill in

Personnel considerations/ culture issues

-Sandra is distraught and blames herself for event that she reported. Only to find out this has happened several times and no one has reported.

RCAA

Example 1: Proactive RCAA Situation

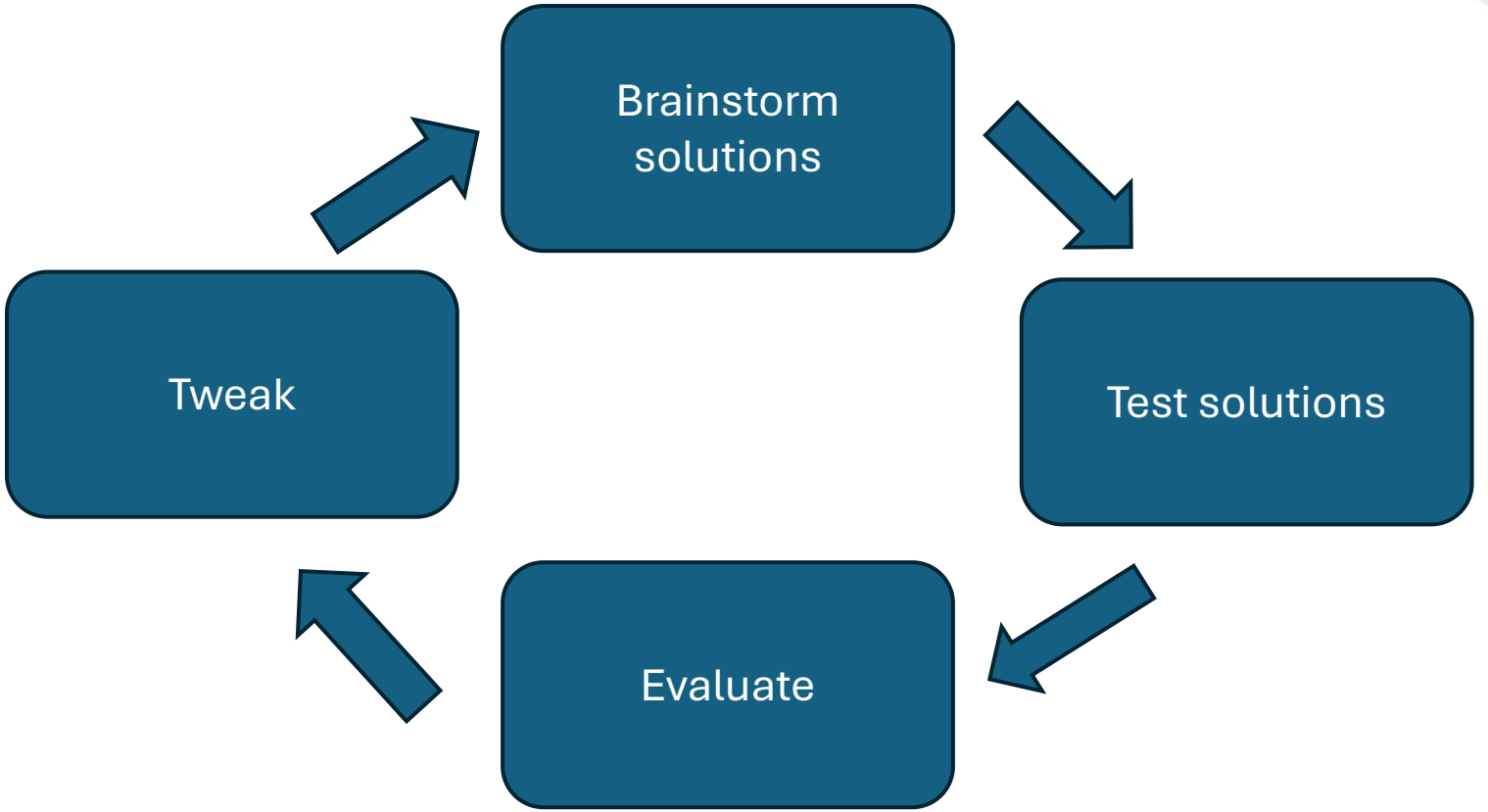
New product will be used in a new procedure starting in two months.

Example 2: Reactive RCAA Situation

A patient had an MRI screening form done the radiology tech clarified and asked the screening questions before entering and found out that the patient had a metal implant, and it was not safe for an MRI. Though the patient did not go into the MRI they were in a zone that was not safe for them.

Rapid Cycle Improvement

Steps: *define the problem, build team*



Refine

Implement

Integration/Hardwire

Analyze

Rapid Cycle Improvement (RCI)

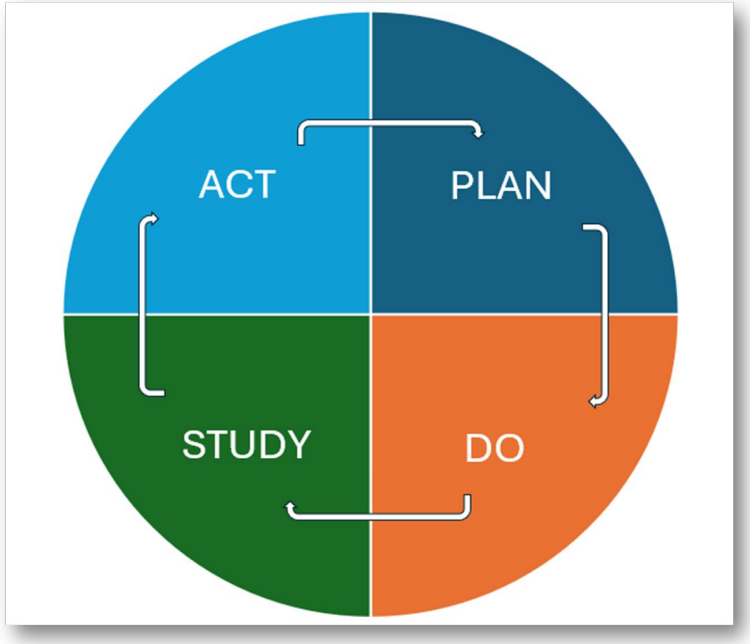
Purpose/ Indication:

- Time is crucial-rapid change is required

Roadblocks/ Solutions:

- Outside staff
- Construction
- Complex problems
- Complex teaching and training
- Measuring long term success

PDSA/PDCA: How are they similar & different



Visual Reference: https://www.researchgate.net/figure/Plan-Do-Check-Act-cycle_fig6_350216766

PDSA (Plan-Do-Study-Act) Cycle

Ask:

- *What do we want to achieve?*
- *How do we know if a change is an improvement?*
- *What changes will result in an improvement?*

Now begin your cycle…

The PDCA (Plan-Do-Check-Act)

What to do:

- *Find a process you want to improve.*
- *Understand the causes of process variations.*
- *Identify how to reduce the variations.*

Now begin your cycle…

PDSA/PDCA

Purpose of Testing Change:

- Understanding the change's performance locally.
- Built knowledge of changes leading to improvements.
- Action-oriented learning for Quality Teams.

Reasons to Test Changes:

- Increase confidence in improvement.
- Identify the most effective change.
- Assess real-world effectiveness.
- Determine effective change combinations.
- Evaluate costs, social impact, and side effects.
- Minimize implementation resistance.

Reference: How to Improve: Model for Improvement: Testing Changes | Institute for Healthcare Improvement (ihi.org)

PDSA/PDCA

Helpful Tips on Testing Changes:

- Plan ahead
- Scale down
- Start simple
- Avoid delays
- Vary conditions
- Collect data
- Reflect
- End if needed

Reference: How to Improve: Model for Improvement: Testing Changes | Institute for Healthcare Improvement (ihi.org)

PDSA/PDCA

Roadblocks:

- Resistance to change
- Unclear goals
- Inadequate data collection
- Poor communication
- Limited resources

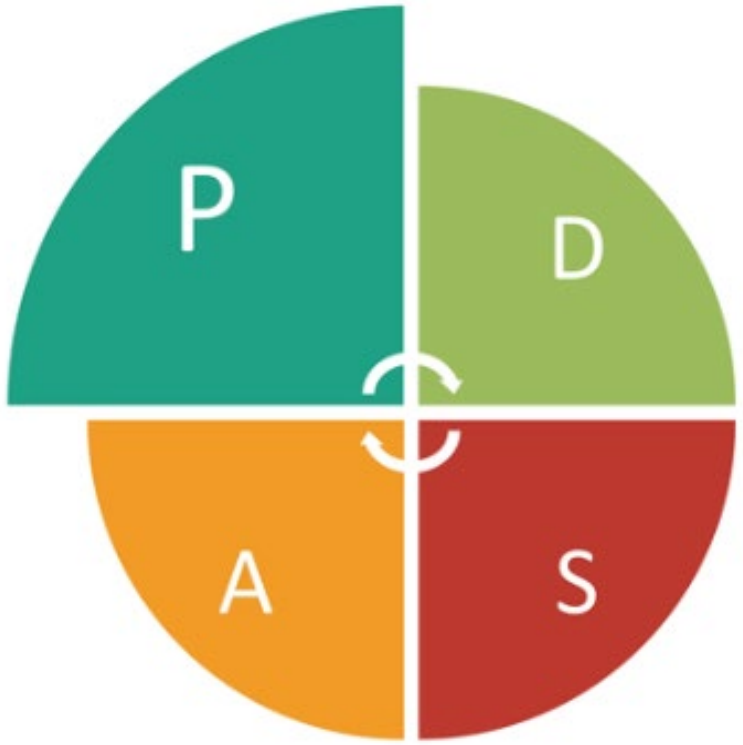
Solutions:

- Engage stakeholders
- SMART goals
- Use reliable methods
- Update, update, update!
- Plan allocation of resources in advance

PDSA

Example:

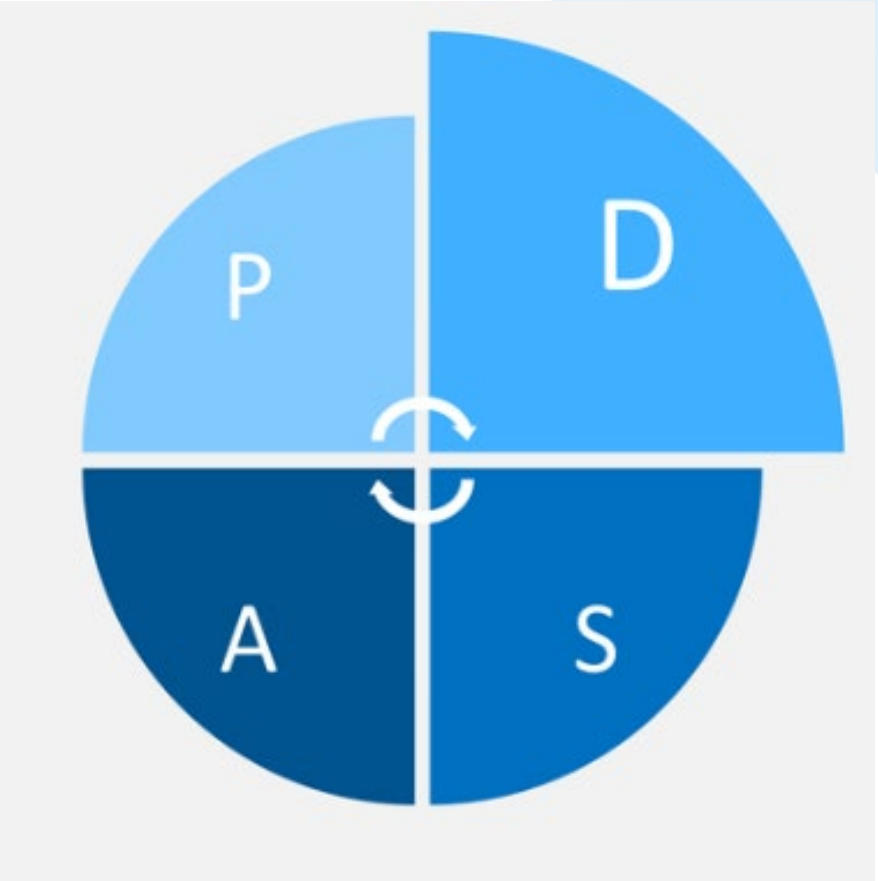
Plan:
SMART GOAL:
Reduce patient wait time in OP clinic from current avg. of 30 min. over the next 6 months.



Visual Reference: PDSA Cycle PowerPoint and Google Slides Template – PPT Slides (sketchbubble.com)

PDSA

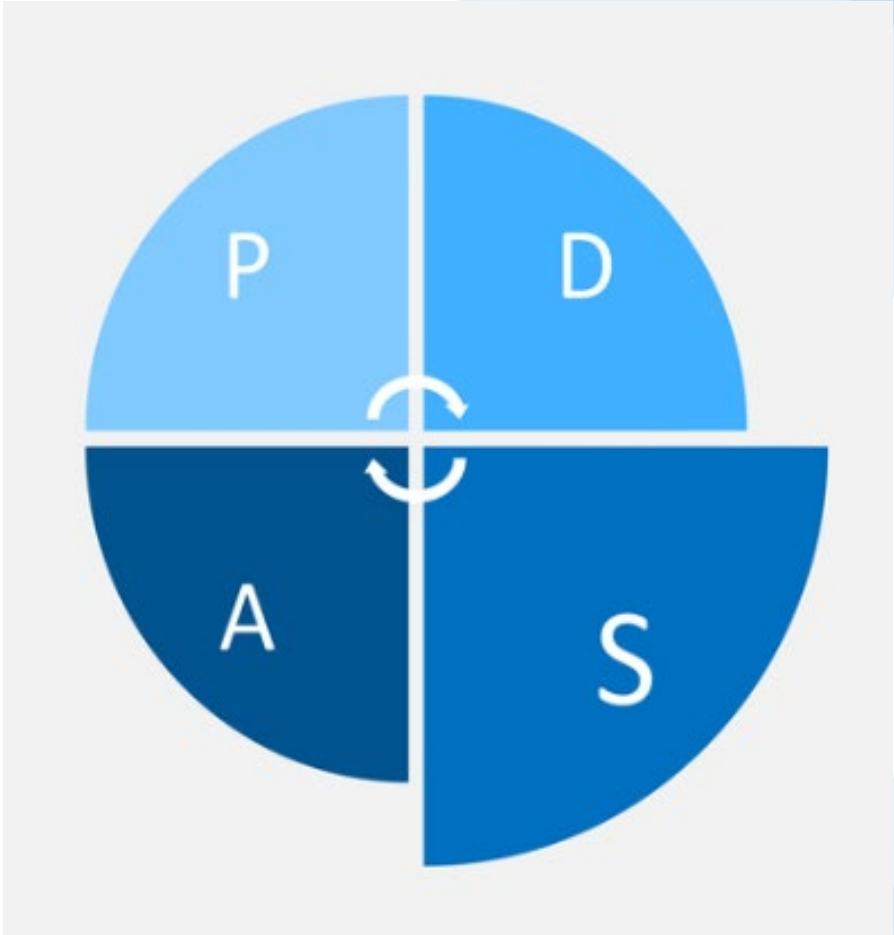
Do:
Action: The new system is introduced in only one clinic as a pilot.



Visual Reference: PDSA Cycle PowerPoint and Google Slides Template – PPT Slides (sketchbubble.com)

PDSA

Study:
Data collection: Assess average wait times from new system/patients and gather feedback on system from both patient and staff.
Analysis: Comparison of old and new system wait times.



Visual Reference: PDSA Cycle PowerPoint and Google Slides Template – PPT Slides (sketchbubble.com)

PDSA

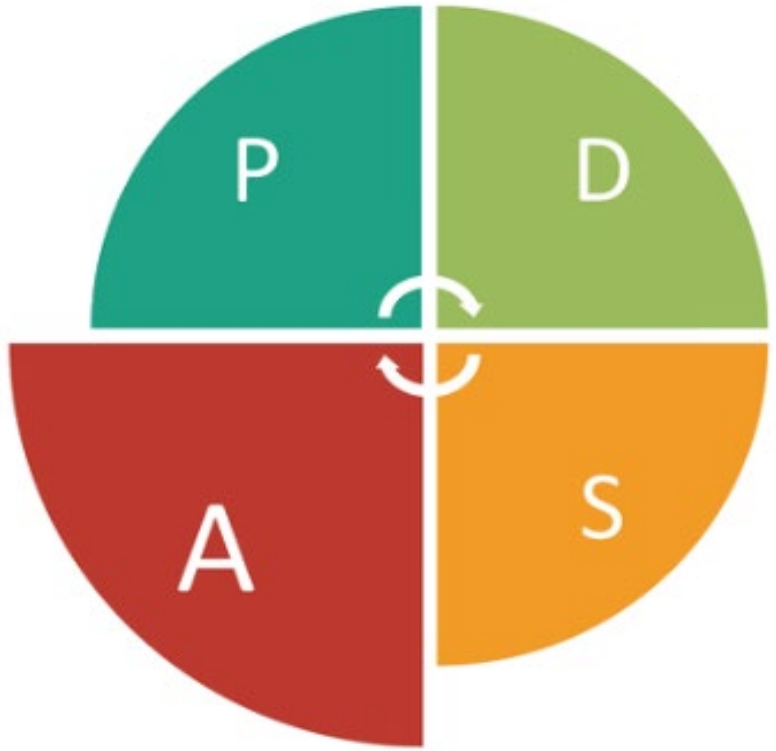
Act:

Positive feedback?

- Consider expansion to other departments.

Negative feedback?

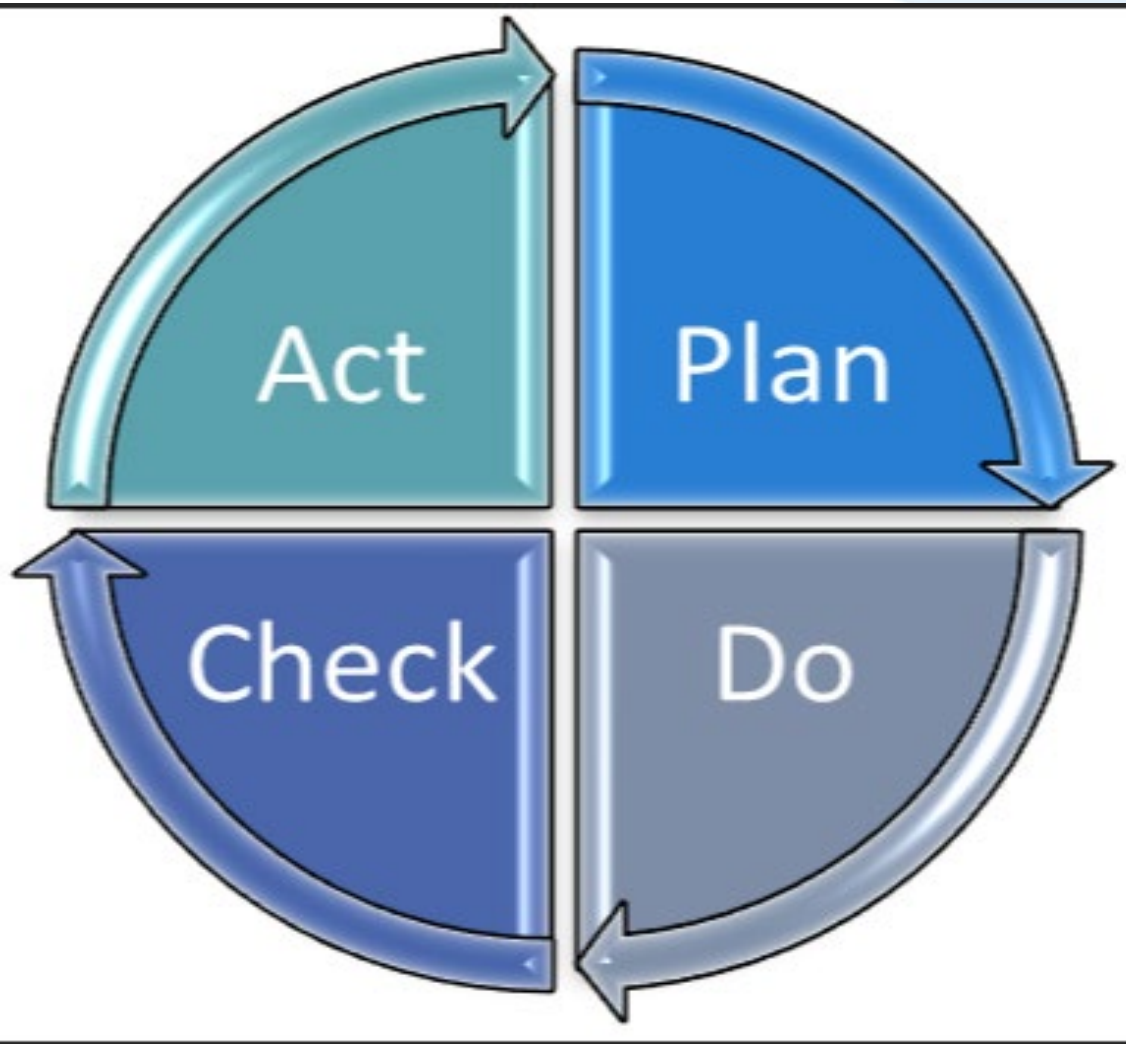
- Analyze the issues and plan another modified PDSA cycle.



Visual Reference: PDSA Cycle PowerPoint and Google Slides Template – PPT Slides (sketchbubble.com)

Example of a PDCA

- Pts. not receptive to taking surveys at checkout.
- Preferred to complete their visit & leave.
- Pts. suggested to take it at a more beneficial time during visit.



Objective: New procedure for collection of more internally used patient experience surveys (not CAHPS).
Goal: Collect at least 25 completed surveys during trials.

Findings: 3/25 completed surveys done.

Observe: make sure personnel is integrating the survey in the check out process.
Trial: 2-week period.

Visual Reference: https://www.leaneast.com/pdca-cycle

FMEA

A definition from IHI:

“A systematic, proactive method for evaluating a process or product to identify where and how it might fail and to assess the relative impact of different failures, in order to identify the parts of the process that are most in need of change.”

Source: Failure Modes and Effects Analysis (FMEA) Tool | Institute for Healthcare Improvement (ihi.org)

In Casey-ese:

Failure = “That probably **ain’t gonna work**.”
Mode = “This is **how** it can break.”
Effects = “This is **what could happen** if it does break as a result of it breaking.”
Analysis = “Let’s generate a geeky tool to show **the ways it can break** and the **havoc it can wreak** if it does.”

Tip: It might help to group the title together a little differently--
Failure Modes Analysis *and* Failure Effects Analysis

FMEA

The purpose of FMEA is to “punch holes” in a process, design, product, or service.

It ties in with the concept of “preoccupation with failure” that HROs are known for maintaining.

FMEA

Demands prioritization of potential failures based upon three criteria:

1. How scary is this potential failing?
2. How often is that failure likely to occur and impact our success?
3. How easy is it to pick up on that failure (detect it?)

FMEA- The Steps

1. Define the process
2. Identify the potential problem
3. Identify potential effects of the failure
4. Rank the severity of the failure
5. Evaluate potential cause/ mechanism of the failure
6. Rank the possibility of the occurrence
7. Rank ability to detect failure
8. Calculate RPN
9. Design recommended improvement action
10. Assign owners and target dates

FMEA: An example

Step 1: Define the Process

We are purchasing and installing a new auto-dispenser at the hospital that measures and pours out precisely the correct amount of a liquid medication into a little medication cup.

FMEA: An example

Step 2: Identify potential failures

Option 1 (Step by Step FMEA)-- The machine could be too large to get through the medication room door.

Option 2 (Helicopter View FMEA) – The machine could dispense the wrong amount.

FMEA: An example

Step 3: Identify potential effects of the failure

Option 1 (Step by Step FMEA)-- The machine can't be housed in the medication room, and we have no other locked spaces in which it could go.

Option 2 (Helicopter View FMEA) – The patient could receive a mis-dose, causing harm or death.

FMEA: An example

Step 4: Rank the Severity of the failure (higher is worse)

Option 1 (Step by Step FMEA)-- 3/10

Option 2 (Helicopter View FMEA) – 10/10

FMEA: An example

Step 5: Evaluate potential cause/ mechanism of failure

Option 1 (Step by Step FMEA)-- Poor planning, mismeasurement (human error), unstandardized measuring tools, poor communication

Option 2 (Helicopter View FMEA) – Inadequate training, mechanical failure within machine, simple human error, bad conversion formula

FMEA: An example

Step 6: Rank the Possibility of Occurrence (higher is more likely, lower is less)

Option 1 (Step by Step FMEA)-- 2/10

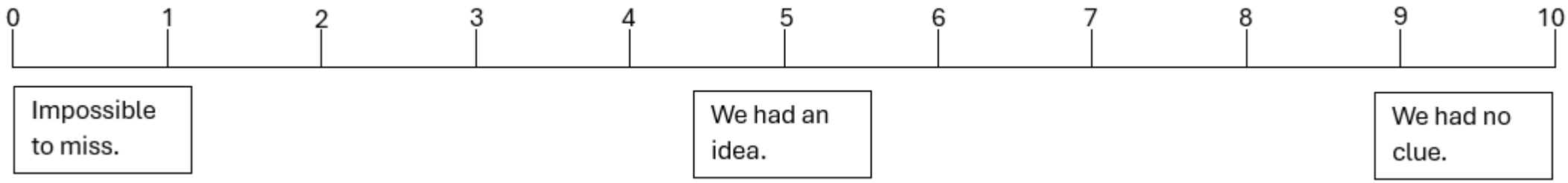
Option 2 (Helicopter View FMEA) – 6/10

FMEA: An example

Step 7: Rank the Possibility of Detection

Watch this one! A HIGHER number means a LOWER chance of detecting the issue.

You can use this scale:



FMEA: An example

Step 7: Rank Ability to Detect Failure

Option 1 (Step by Step FMEA)-- 1/10 (lower on the scale means easier to see!)

Option 2 (Helicopter View FMEA) – 8/10 (higher on the scale means a possibility that error will go unnoticed.)

FMEA: An example

Step 8: Calculate RPN (Risk Profile Number): Your three numbers added together.

Option 1 (Step by Step FMEA) – 6

Option 2 (Helicopter View FMEA) – 24

Higher RPN = higher priority!

FMEA: An example

Step 9: Design Recommended Improvement Action

Option 1 (Step by Step FMEA)-- Measure twice/ cut once, written communication, definition of measurement unit (inches), second-man confirmation of measurements

Executive sign off on final measurements prior to final purchase and install.

Option 2 (Helicopter View FMEA) – Written training curriculum with hands-on demonstrations, mechanical safety for second-checks on measurements, hard-stop warnings for suspected errors, triple confirmation of conversion formulas.

Add second-nurse biometric verification hard stop for highest risk meds and all pediatric dosing.

FMEA: An example

Step 10: Assign owners and target dates

Option 1 (Step by Step FMEA)-- COO, One week prior to final purchase

Option 2 (Helicopter View FMEA) – CNO and Med/Surg nursing Director, Two to Three months prior to install

*Rework your RPN with your improvements in place. The number should be much better!

FMEA- Roadblocks/ Solutions

Roadblock	Solution
Incomplete Discovery	Gemba, Multidisciplinary approach,
Missed Opportunities for Improvement	Plan to re-work (allow time for this!)
Hesitancy to Identify Risks	Just Culture, Candor from leadership

Lean: Defined

An approach to quality management that focuses on efficiency and elimination of waste or delays in productivity.

In Casey-eze: A way to do it faster, better, and with the least amount of wasted resources and work possible.

Lean: Indications

Reducing costs

Reducing inefficiencies

Working in limited space

Reduction of inventory

Streamlining processes

Circumventing the ever-present challenge of staffing shortages!

Lean: The Steps

1. Define areas of improvement
2. Identify wasteful activities or steps
3. Engage front-line teams in implementation
4. Track and trend success
5. Implement relevant improvement processes to hardwire new behaviors or practices

Lean: An example

Currently, the process for scheduling an appointment is very cumbersome. Patients must call the operator, hold, transfer to the scheduling office, hold again while a specific provider's scheduler is made free, accept a date and time that are offered, hold again while the appointment is established, and then confirm before hanging up the phone.

Let's apply lean to this disaster!

Lean

1. **Define areas of improvement** : Process for making an appointment is cumbersome. ESTABLISH A BASELINE.

2. **Identify wasteful activities or steps**: Holds while finding the “correct” scheduler and again while appointment is confirmed.

3. **Engage front-line teams in implementation** : Ask questions. Do a Gemba. Do they agree there is room for improvement? Is it possible to route the caller to the “correct” scheduler right off the top? Or would it be better for all schedulers to be able to schedule all appointments? What benefits/ detriments do they perceive with each option? Set a firm goal and plan. Then implement with their engagement.

4. **Track and trend success.** How are we looking against the baseline?

5. **Implement relevant improvement processes to hardwire new behaviors or practices**. What’s good for the goose might be good for the gander. How can we operationalize this new process across the board?

Lean: Roadblocks/ Solutions

Roadblock	Solution
Poor team selection for implementation	Use four factors for screening: Capability, Creativity, Willingness, and Ability
Balancing time and financial priorities	Deliver a “why” that is relatable for whichever outcome has been prioritized.
“That’s just the way we’ve always done it.”	Value the feelings and emotions that can lead to resistance to change. Fear? Complacency? Skepticism? All part of the human spectrum!

Next Steps

What are you working on? Which process could be applied?

KHA Quality Team :

1. Virtual Support/ Education
2. Site Visits
3. One-on-One Troubleshooting
4. Networking
5. Resources
6. A deep, DEEP dive!

Next Steps

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Next Steps

Check out part 2! Registration linked here.

- The Gemba
- The Fishbone
- A3
- Bar Charts
- Pareto Charts
- Control Charts
- Scatter Diagrams

Sources/ citations :

PDSA/PDCA

Plan-Do-Study-Act Worksheet, Directions, and Examples | Agency for Healthcare Research and Quality (ahrq.gov)

How to Improve: Model for Improvement: Testing Changes | Institute for Healthcare Improvement (ihi.org)

FMEA

Failure Modes and Effects Analysis (FMEA) Tool | Institute for Healthcare Improvement (ihi.org)