RESEARCH PMO
BROWN BAG LUNCH

Introduction to Lean Process Improvement

June 23rd, 2022 @ 11:30am – 1pm

PRESENTED BY:
Research PMO
Strategy Integration

Children's Hospital of Philadelphia
RESEARCH INSTITUTE

WHY ARE WE ALL HERE?

AGENDA FOR TODAY'S WEBINAR:

- Housekeeping
- Introductions
- Quality and Process Improvement in History
- Introduction to Lean
- Lean Tools and Methodology
- Process Mapping
- 5S
- Plan Do Check Act
- Error Proofing
- QUIZ!

HOUSEKEEPING

What to keep in mind for today's webinar:

- We encourage everyone to turn their camera on to increase engagement

- Everyone is muted, if you have a question or comment, please:
  - Type your question in the Chat Box
  - Ask a question using the Raise Hand function
  - If un-mute, please state your name and title/department

- Slides/webinar materials will be shared post-session

- The Research PMO values your opinions & feedback:
  - Please complete our post-session survey

INTRODUCTIONS – STRATEGY INTEGRATION

Hillary Forbrich
Strategy Integration Partner

Rebecca Goodman
Strategy Integration Partner

STRATEGY INTEGRATION OVERVIEW

Our Vision

To drive alignment between CHOP's strategic priorities and the operational actions that contribute to achieving those priorities

Services Provided:

- Business process improvement
- Business consulting
- Program Management
- Project Management

INTRODUCTIONS – RESEARCH PMO

Anne E. Geary
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Project Coordinator

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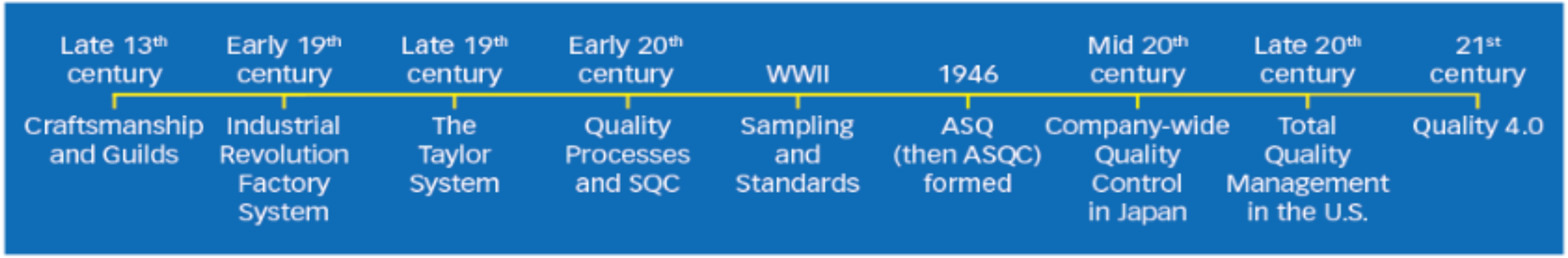
Project Manager

QUALITY AND PROCESS IMPROVEMENT IN HISTORY



Reference #1

QUALITY AND PROCESS IMPROVEMENT IN HISTORY

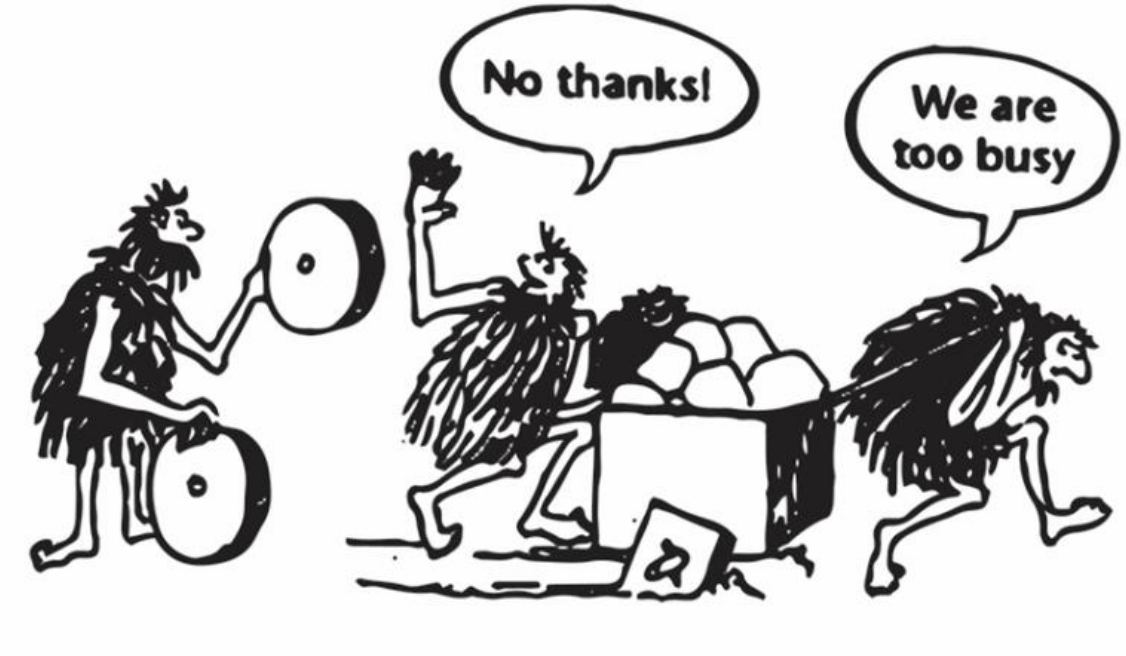
- Work Smarter Not Harder (1800s)
  - Following the Industrial Revolution, it became obvious working MORE did not equal working BETTER
  - Operational efficiencies drive success (and innovation!)
  - Quality was ensured through the skill of laborers supplemented by audits and/or inspections.

- Attention on processes rather than results (1950s)
  - Concentrate the efforts of everyone in the organization on continually improving imperfection at every stage of the process.

Reference #1

WHAT IS LEAN

Lean thinking is a transformational framework that aims to provide a new way to organize human activities to deliver more benefits and value to individuals while eliminating waste.



Reference #2

IF IT AIN'T BROKE ~~DON'T FIX IT~~

STILL PERIODICALLY REVIEW IT

WHAT IS LEAN MANAGEMENT

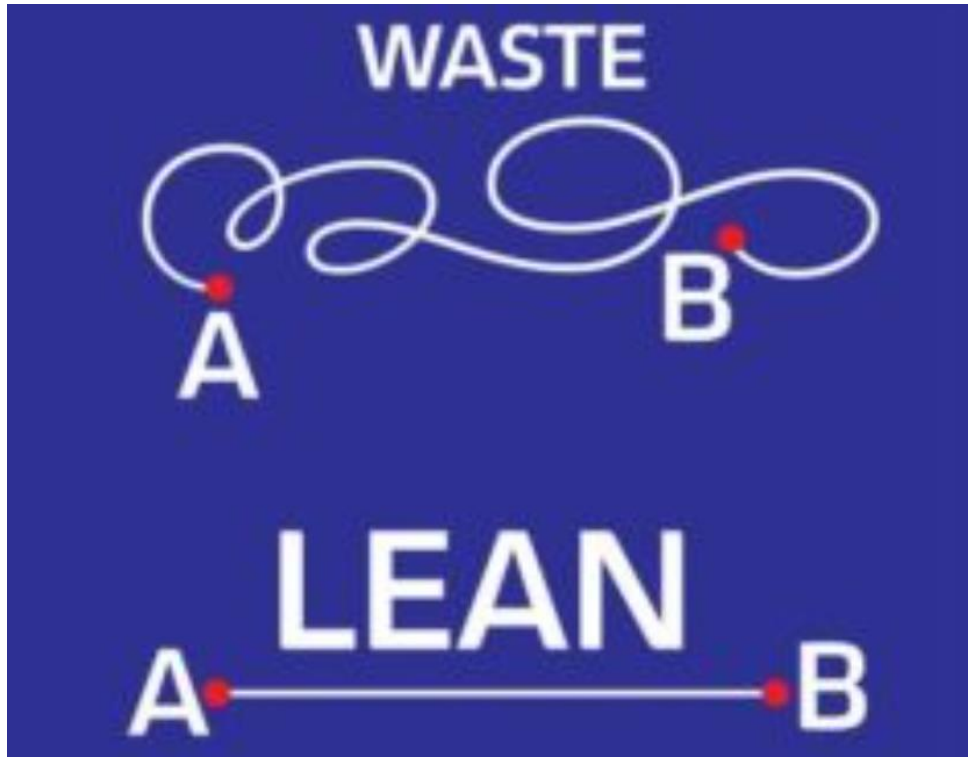
Continuous improvement to achieve small incremental changes….

ONE STEP AT THE TIME

Reference #3

LEAN MAIN GOALS

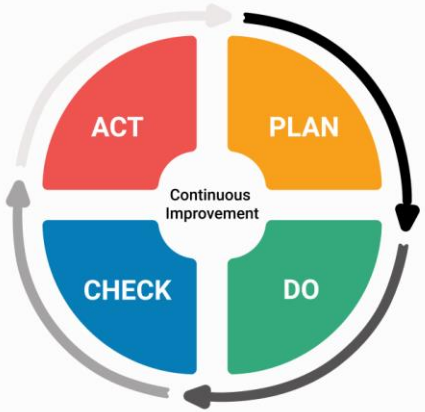
1. Improve Quality
2. Eliminate Waste
3. Reduce Lead Time
4. Reduce Total Costs



Reference #4

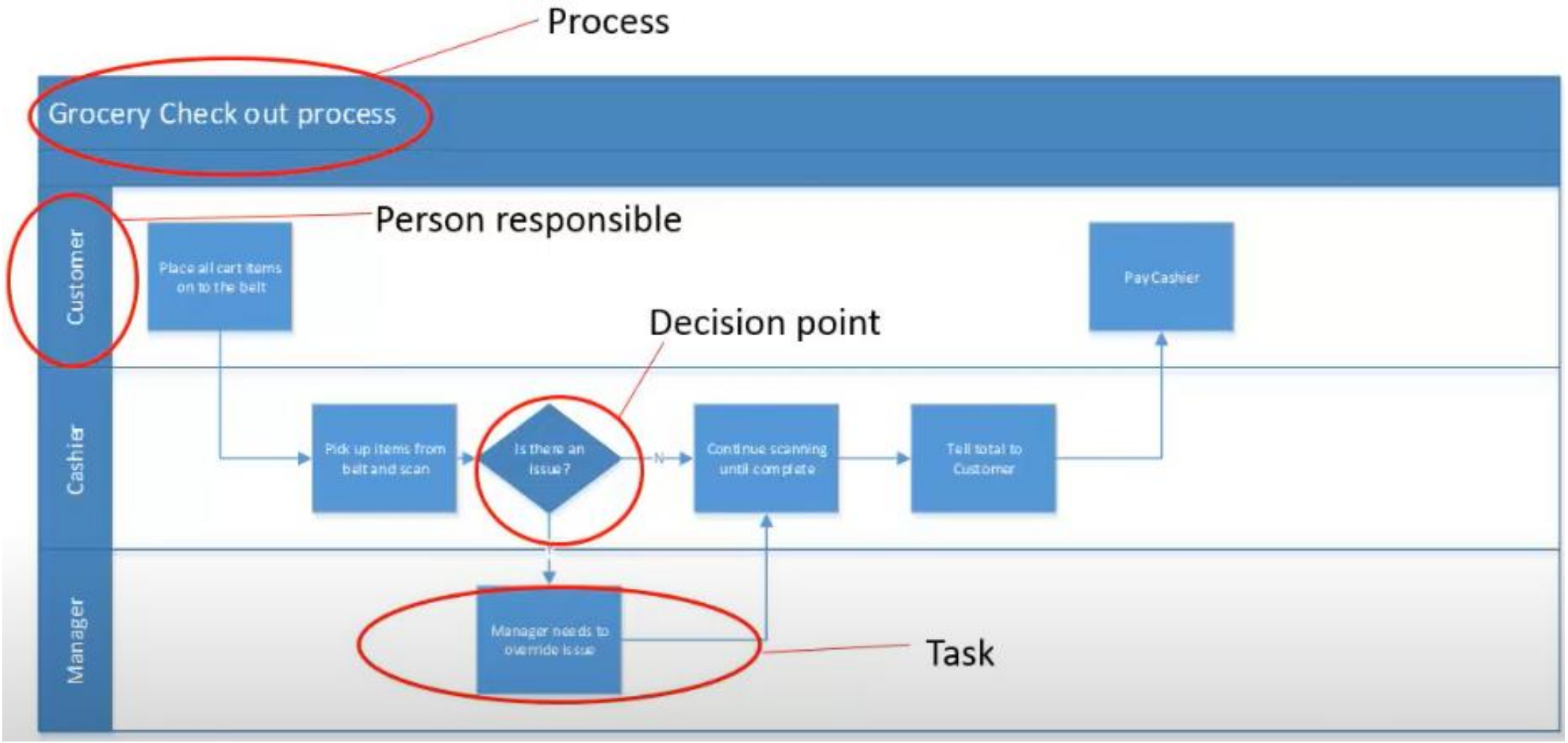
LEAN TOOLS AND METHODOLOGY

- Process Mapping
- 5S
- Plan Do Check Act



Reference #5, #6,#7

LEAN PROCESS MAPPING



Reference #8

HOW TO DO LEAN PROCESS MAPPING

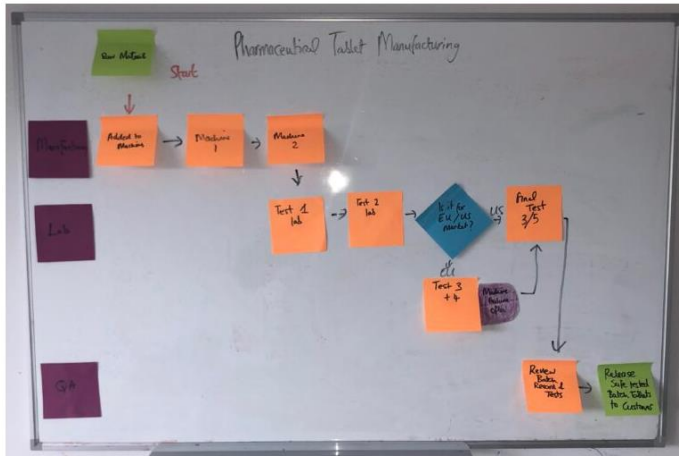
- **Brainstorming**
  - Organize tasks/events in time or a specific order
  - Identifying points of improvement
  - **Big Picture** - When a good process map is in place, everyone can see the big picture. This helps each individual department, or even each employee, see where they fit into the overall process flow.
- **How to Document**
  - Have someone talk you through the steps while you document
  - Include input from those that are closest to the work/process
- **How to Analyze**
  - Is this the foundation of the process/activity that is being impacted
  - Document ~ Review ~ Update
  - Include business owners and those that could be impacted
  - Look for steps in the process that seem redundant, or should be changed

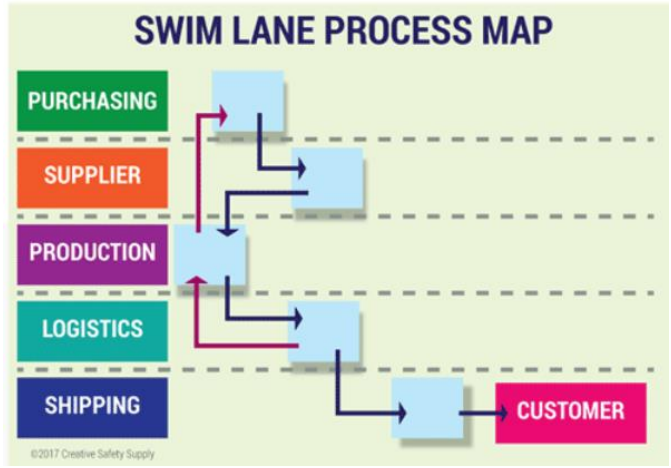
Medical errors are **not** largely attributed to individuals

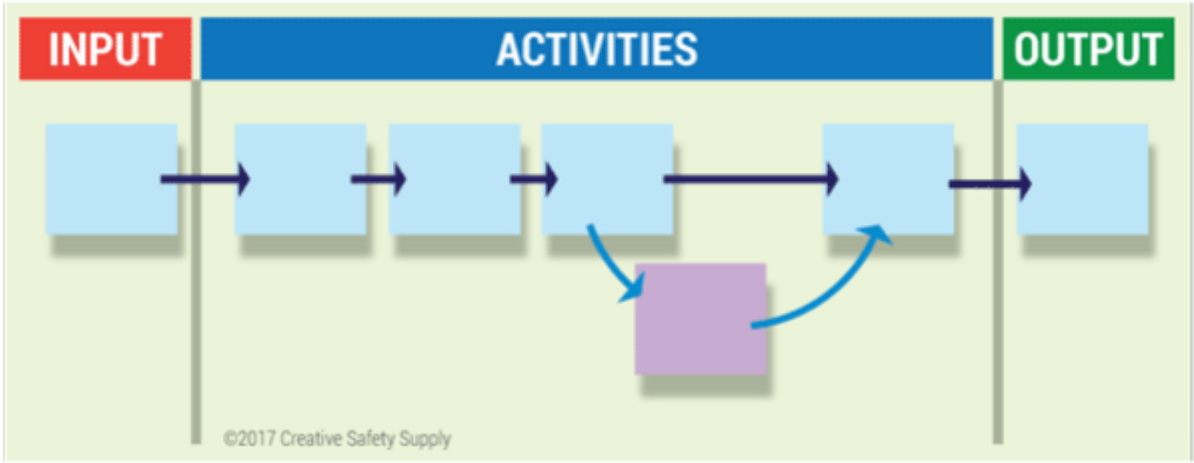
- Faulty systems and processes are to blame

Reference #9

HOW TO DO LEAN PROCESS MAPPING



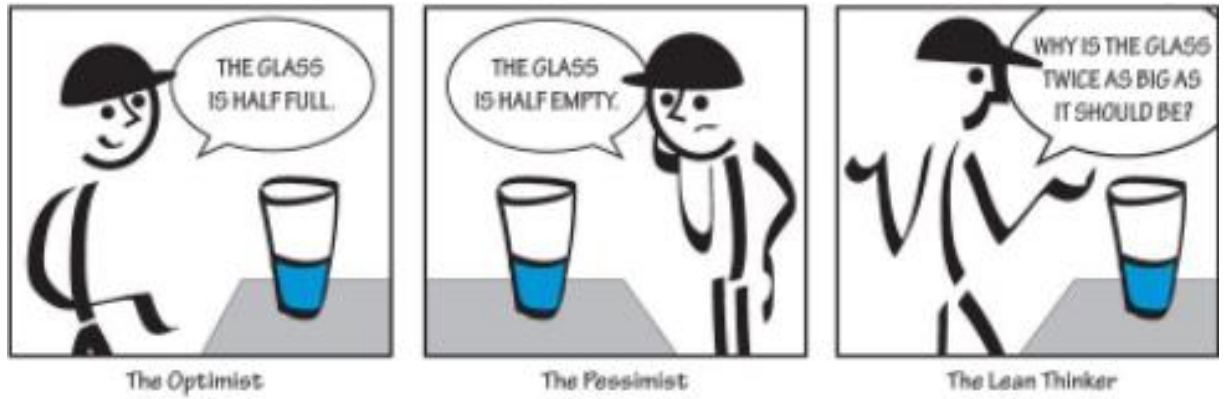




Reference #9

QUIZ TIME

Please respond to the poll requests



Reference #10

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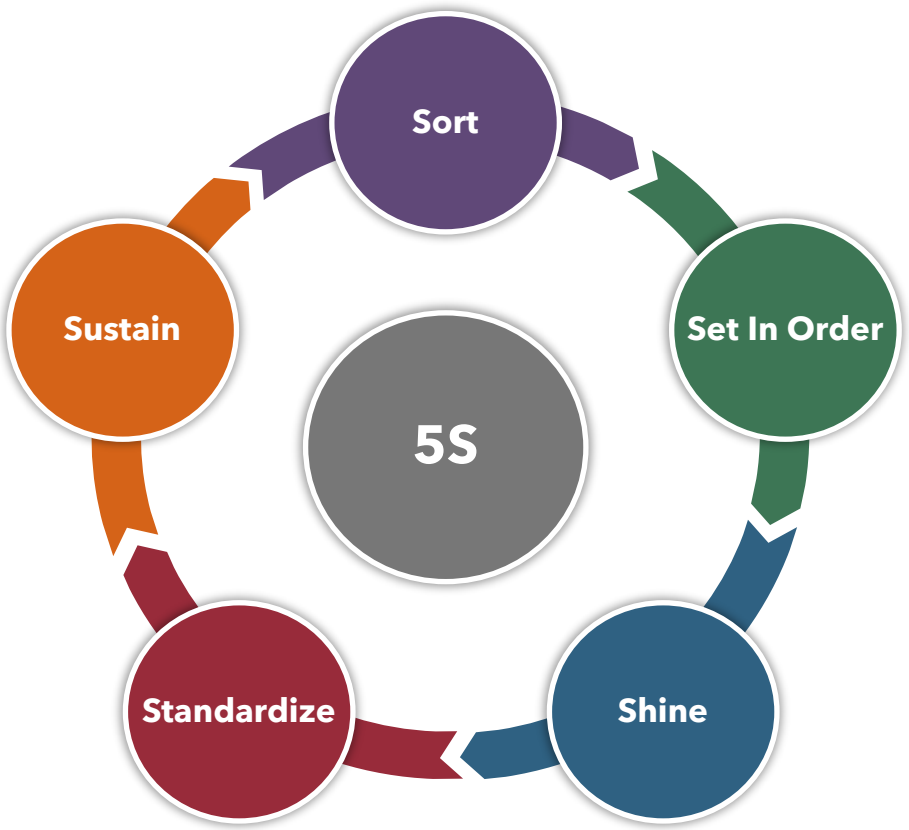
WHAT IS 5S?



A place for everything, and everything in its place

- 5S is a process to create workplace organization and standardization to ensure workplace safety, efficiency, cleanliness, and increase quality.

- Monitoring and measurement tools are used to ensure that the workplace contains only **what** is needed, **when** it is needed, and **where** it is needed.

ORIGINS OF 5S

- The 5S methodology, developed in Japan, enables organizations to be more efficient and reduce waste through the implementation of five key steps

- 5S is derived from the philosophy of “kaizen”, which translates to a change for the better or “continuous improvement”

- Kaizen is a Lean philosophy that sees improvement in productivity as a gradual and methodical process

Reference #11

5S FRAMEWORK

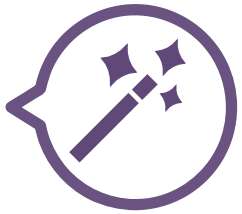
1. **SORT (Seiri):** organization; keeping only what is necessary and discard everything else – when in doubt, throw it out

2. **SET IN ORDER (Seiton):** orderliness; arranging and labeling only necessary items for easy use and return by anyone

3. **SHINE (Seiso):** cleanliness; keeping everything swept and clean for inspection – for safety and preventative maintenance

4. **STANDARDIZE (Seiketsu):** uniform clean-up; the state that exists when the first three pillars of the 5S framework are properly maintained

5. **SUSTAIN (Shitsuke):** sustaining the discipline; making a habit of properly maintaining correct procedures



SORT

Sort through materials, keeping only the essential items needed to complete tasks. *Everything that is not used to complete a work process should leave the work area.*

Questions to ask during this phase:

- What is the purpose of this item?
- When was this item last used?
- How frequently is it used?
- Who uses it?
- Does it really need to be here?

SET IN ORDER

Ensure that all items are organized, and each item has a designated place. Organize all the items left in the workplace in a logical way so they make tasks easier for individuals to complete. This often involves placing items in ergonomic locations where people will not need to bend or make extra movements to reach them.

Things to Consider:

- Which people (or workstations) use which items? When are the items used?
- Which items are used most frequently? Should items be grouped by type?
- Where would it be most logical to place items?
- Would some placements be more ergonomic for workers than others?
- Would some placements cut down on unnecessary motion?

SHINE

Proactive efforts to keep work areas clean and orderly to ensure purpose-driven work. This means cleaning and maintaining the newly organized workspace. It can involve routine tasks such as mopping, dusting, etc. or auditing inventory or materials, and performing maintenance on machinery, tools, and other equipment

Shining the workplace might not sound exciting, but it's important. In 5S, everyone takes responsibility for cleaning up their workspace daily. Doing so makes people take ownership of the space, which in the long run means people will be more invested in their work and in the organization they support.

Actions? Questions?

- How do I keep my space clean?
- Make time daily to clean/shine/tidy
- The best way to clean a space is to KEEP it clean

Reference #12, #13

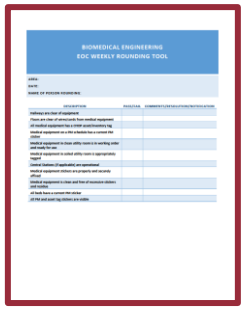
STANDARDIZE

Create a set of standards for both organization and processes. In essence, this is where you take the first three S's and make rules for how and when these tasks will be performed. These standards can involve schedules, charts, lists, etc.

Some questions on the checklist may include:

- Are all tools/equipment in their correct place on the shadow boards?
- Does the medical device or equipment being used have a CHOP sticker that displays its serial number, site location, approval for usage, and inspection date?
- Are the necessary supplies in place for the next worker who will begin a shift at that station?

Example: CHOP's Biomedical Engineering Environment of Care Rounds Tool



Click on the image to open document

SUSTAIN

Sustain new practices, conduct audits, and review standards to maintain discipline. This means the previous four S's must be continued over time. This is achieved by developing a sense of self-discipline in employees who will participate in 5S.

Things to Consider:

- Measure and monitor processes
- Address root causes of current state and avoid reversion to “old ways”
- Promote individual feedback and respond to improvements
- Develop a continuous improvement model for future opportunities to develop best practices and to maintain sustainability of new practices

5S TOOLS

1. Gemba Walk
2. Shadow Tape / Boards
3. Red Tags
4. Signs / Posters
5. Labels
6. Pegboards
7. Forms
8. Bins

5S IN ACTION – CASE STUDY

- NIH Global Healthcare Facility Case Study
  - Universal to healthcare facilities
  - Empirical evidence and effectiveness – 15 studies
  - Applicable to both healthcare and political/government spaces

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4950714/

Reference #14

5S IN PRACTICE

BEFORE

AFTER

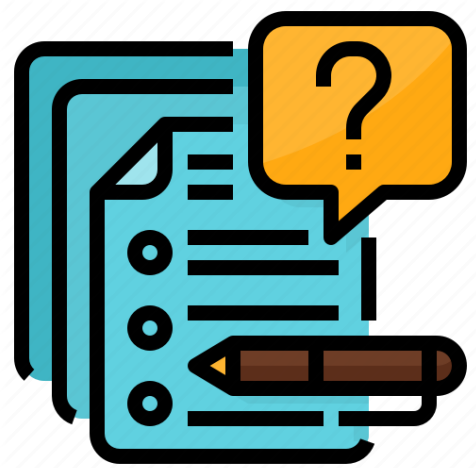
Before

After

Reference #17

QUIZ TIME

Please respond to the poll requests



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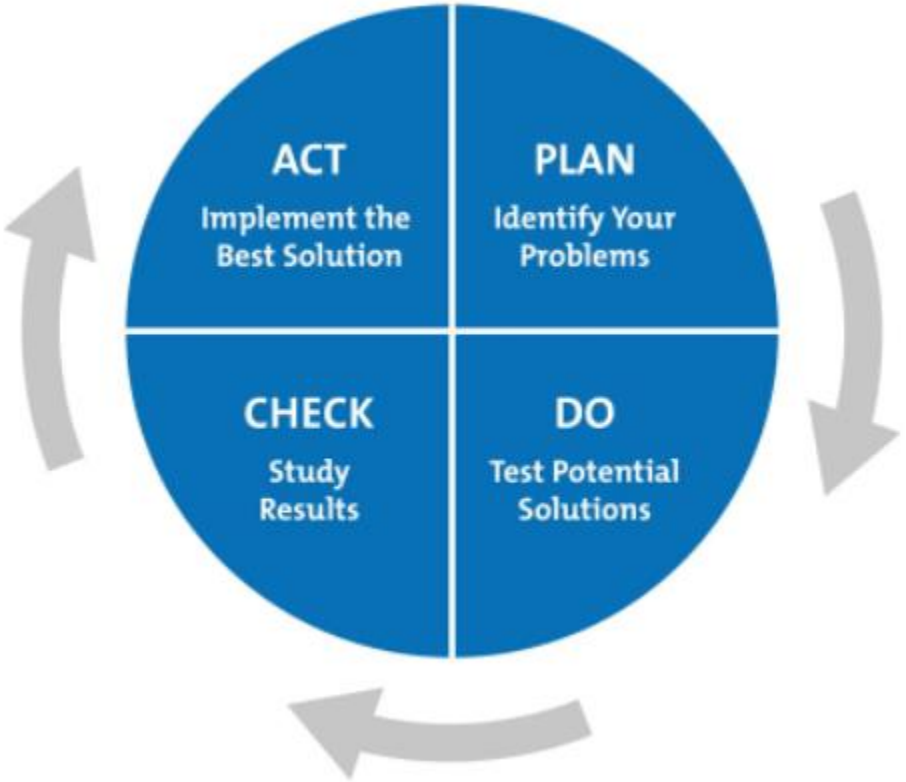
WHAT IS PLAN DO CHECK ACT (PDCA)?



Reference #18

WHEN TO USE PDCA?

- Works well in all types of organizations
- Requires significant buy-in from team members
- Might not be the appropriate approach for dealing with an urgent problem

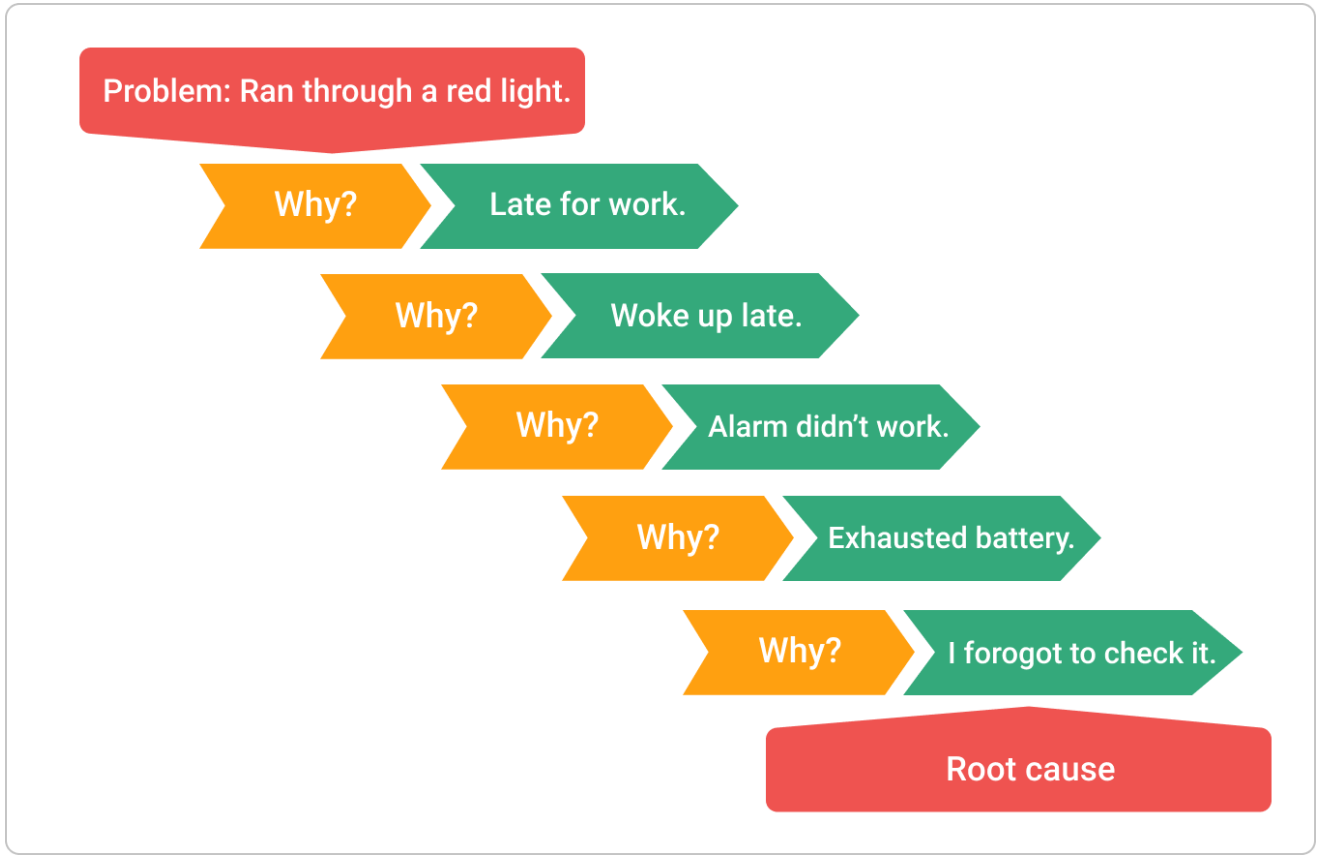
Reference #19

PDCA: PLAN

Reference #20

PDCA: PLAN

- Planning is proactive, not reactive
- If you don't start with a plan, you won't know where you'll end up
- Strategic in nature
- Look at the root causes of any issue and set goals to overcome these obstacles using "the 5 Whys“ (Root Cause Analysis)



Reference #21

PDCA: DO

- Put the plan into action
- Establish roles & responsibilities
  - Make it clear who will complete the action or task
- When you've decided on your course of action, safely test different ways of getting the results that you want

RACI CHART EXAMPLE

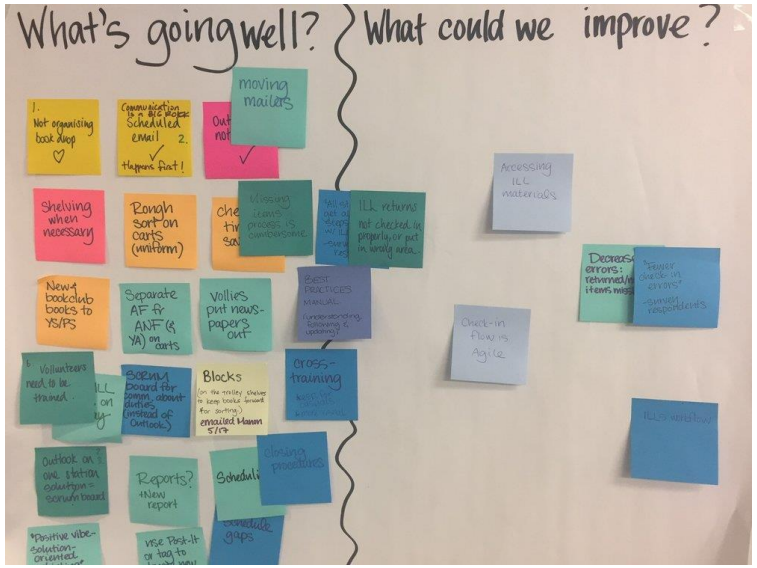
Project tasks	Senior Analyst	Project Manager	Head of Design	SVP Finance	SEO Lead	Sales Director	Senior Management
Phase 1: Research							
Econometric model	R	I	I	A	C	I	I
Strategic framework	A	I	I	R	I	I	C
Risk factors	R	I	I	A	I	I	I
Phase 2: Structure							
Product specs	I	A	R	I	C	C	C
Design wireframe	I	C	R	I	C	I	C
User journey	I	C	R	I	C	C	C
User experience testing	I	C	R	I	C	C	C
Evaluation framework	I	R	C	I	C	I	C
Development backlog	I	R	C	I	C	I	C
Delivery roadmap	C	R	A	C	C	C	I

Forbes ADVISOR

R – Responsible, A – Accountable, C – Consulted, I - Informed

Reference #22

PDCA: CHECK

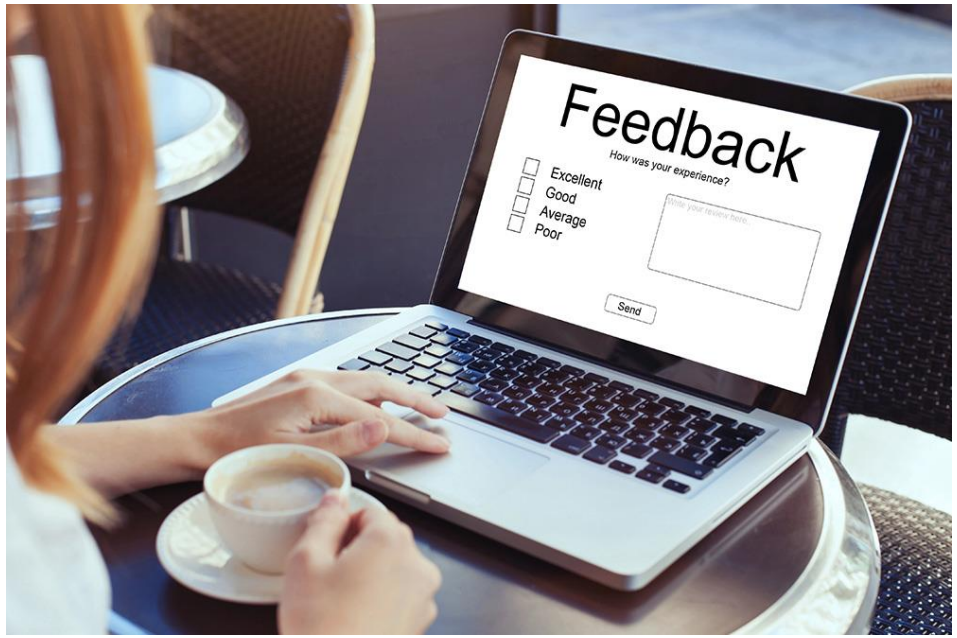


- If Planning is Proactive, this stage is reactive
  - Stop and evaluate
  - What's working? What's not working?
  - Have our goals changed?
  - Are there new considerations to factor in?
- Review your progress regularly, adjust your behavior accordingly, and consider the consequences of your actions.

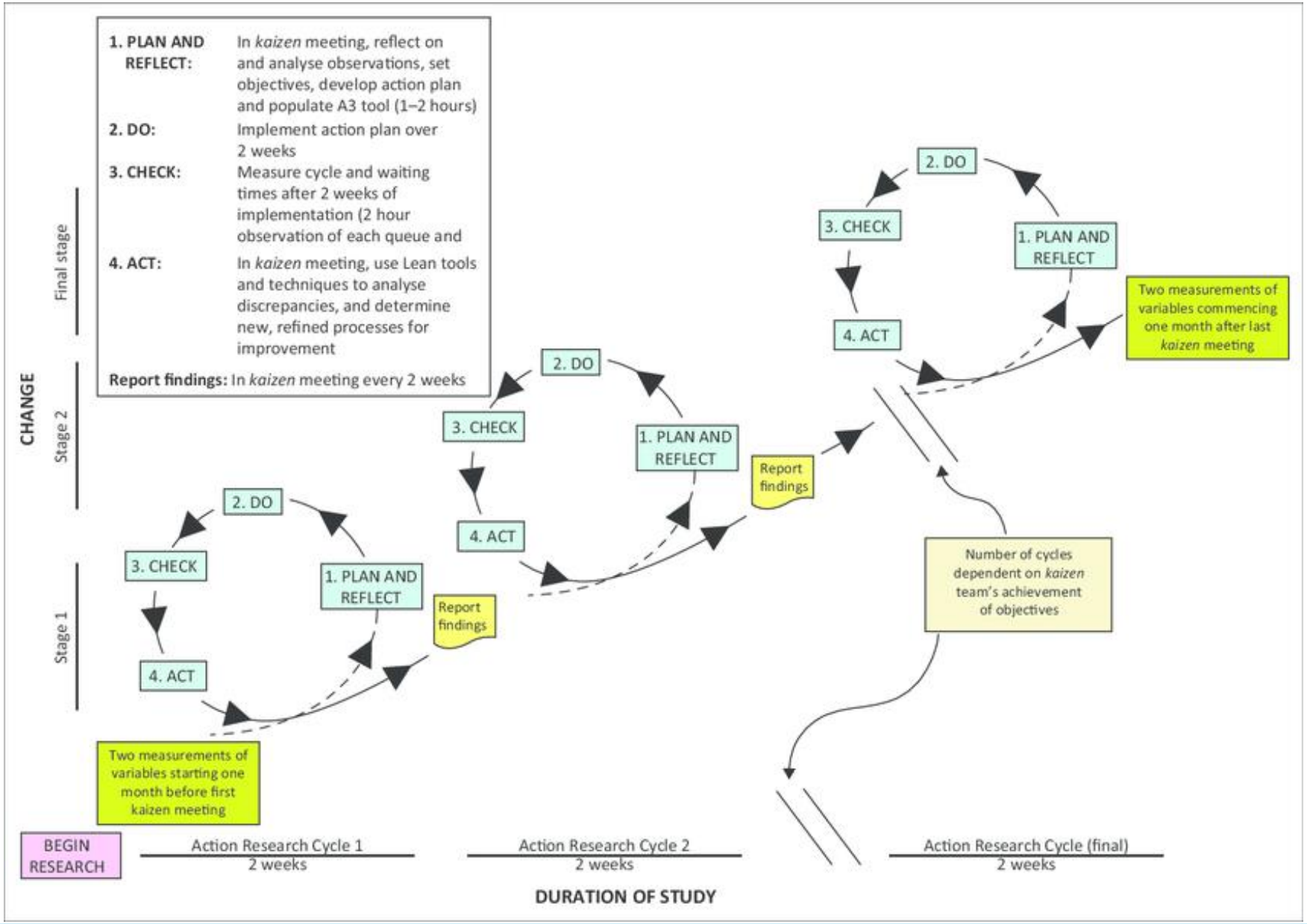
Reference #23, #24

PDCA: ACT

- Ongoing way for managing change and identifying new opportunity to continue to improve
- Process to make decisions
- Implement what's working, continually refine what isn't, and carry on the cycle of continuous improvement



Reference #25, #26



Reference #27

ERROR PROOFING

- Also called Poka-Yoke
- Per ASQ, it is the use of, ‘any method that either makes it impossible for an error to occur or makes the error immediately obvious once it has occurred.”
- Examples include:
  - USB Sticks only go one way
  - Cars that have key fobs won’t lock if you leave your key inside the vehicle
  - Spell Check or Autocorrect
  - Drop down menus in lieu of free text
- Tools to Identify Error Cause:
  - 5 Why’s
  - Process Mapping
- Eliminate errors using one of the following methods:
  - Elimination
  - Replacement
  - Facilitation
  - Inspection

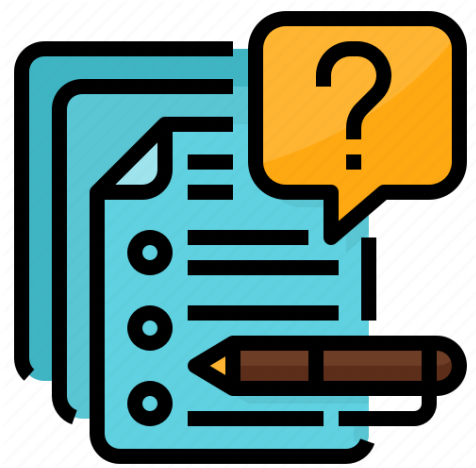
ERROR PROOFING - DISCUSSION

Are there examples in your own work where you have put a process in place to reduce your mistakes?

Reference #28

QUIZ TIME

Please respond to the poll requests



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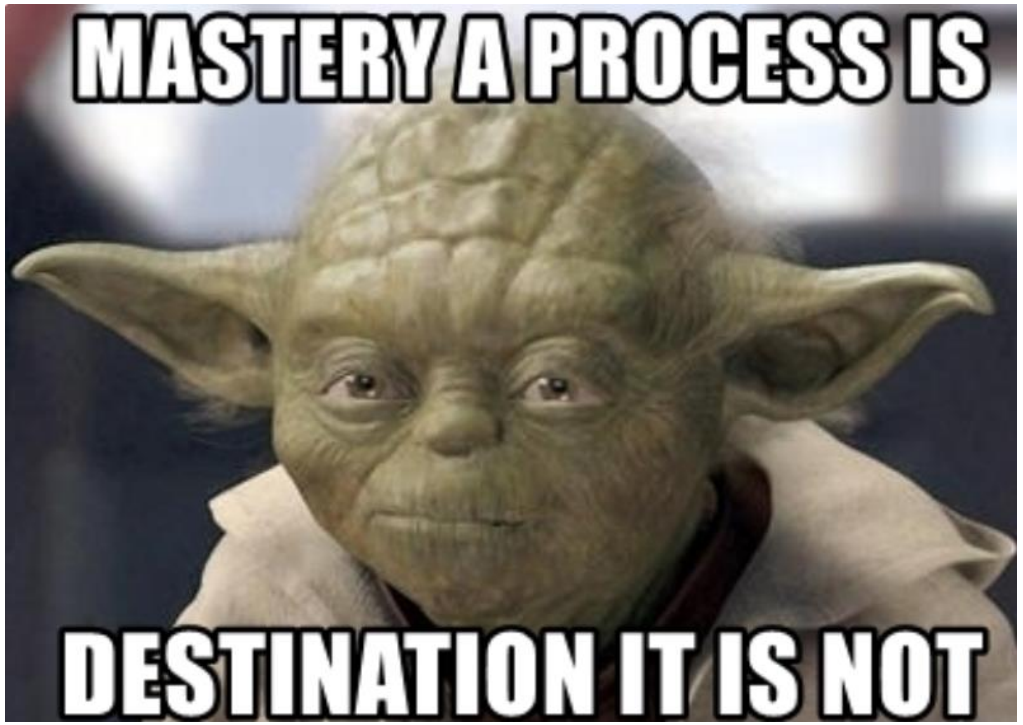
FINAL QUESTIONS?



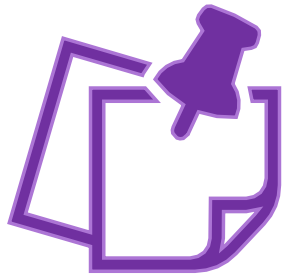
DON'T FORGET TO COMPLETE YOUR SURVEY

Reference #

WHO YOU GONNA CALL?

- Research Project Management Office (Research Admin)
  - Program and Project Management
  - Process Improvements, RFPs, System Implementations
  - Audit and Governance
  - DL email: DL-ResearchPMO@chop.edu
- Strategy Integration (Enterprise)
  - Business Process Improvement
  - Business Consulting
  - Program and Project Management
  - https://at.chop.edu/sites/administration/strategy
    - Submit an intake for review
- Center for Healthcare Quality & Analytics (CHQA)
  - Clinical Process Improvement
  - Data & Analytics
  - https://at.chop.edu/chqa

ADDITIONAL RESOURCES



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ADDITIONAL RESOURCES

- Take a class at CHOP:
  - Project Management
  - Applying Improvement Methods (AIM)
  - Leading Improvement Course (LIC)
  - MS Office
  - DISC I & II with your team
  - CLI: Presenting with Impact: Presentations Skills Workshop
  - Virtual Meeting Technology Coaching Session
- Strategy Integration
  - https://at.chop.edu/sites/administration/strategy
  - Business Process Improvement
- Continuous Improvement Class (recommendation from PMO) – CHQA Team
  - https://at.chop.edu/chqa/Pages/Home.aspx
  - Clinical Process Improvement

Reference #

ADDITIONAL TOOLS

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ADDITIONAL TOOLS

- Collaboration Tools:
  - Microsoft Teams
  - Spreadsheets
  - Slides
  - Video Conferences
  - 1:1 chats Emails
  - Visio
  - Microsoft PowerPoint

- Cloud-based Tools:
  - ServiceNow
  - Smartsheet*

Reference #

KEY TERMS & DEFINITIONS

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RACI TERMS

Responsible (R)	*Who is the one person responsible for producing deliverable's?*
Accountable (A)	*Who is the one person who ultimately owns correct and thorough completion of the task?*
Consulted (C)	*Who has opinions and expertise?*
Informed (I)	*Who needs to be kept up to date on progress?*

Reference #22

REFERENCES

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REFERENCE LIST:

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17. Image sourced from: https://www.google.com/search?q=before+after+5s&rlz=1C1GCEB_enUS988US988&sxsrf=ALiCzsadrilvSa7D08fpxb0-RRF1Ec5RBg:1655830531338&source=lnms&tbm=isch&sa=X&ved=2ahUKEwispIO1gb_4AhXYEGIAHcAHDPgQ_AUoAXoECAEQAw&biw=1280&bih=577&dpr=1.5

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21. Image sourced from: https://kanbanize.com/lean-management/improvement/5-whys-analysis-tool https://kanbanize.com/wp-content/uploads/website-images/kanban-resources/5-whys-analysis-root-cause.png
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