TOOLS USED IN HEALTH CARE QUALITY IMPROVEMENT

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GREATER NEW YORK HOSPITAL ASSOCIATION & UNITED HOSPITAL FUND
CLINICAL QUALITY FELLOWSHIP PROGRAM

Session Objectives

- Describe the difference between Quality Assurance and Quality Improvement
- Understand the shared principles of Quality Improvement methodologies
- Use common Quality Improvement tools
- Discuss frequent challenges in Quality Improvement work and strategies to address them

Quality Assurance vs. Quality Improvement

- Quality Assurance (QA) focuses on defects, “bad actors”, outliers
- Quality Improvement (QI) often used synonymously with Performance Improvement (PI)
- Quality Improvement focuses on transforming the entire process for the better
- Quality is the overall umbrella that encompasses **both** Quality Assurance **and** Quality Improvement

Foundational Differences Between Quality Assurance and Quality Improvement: A Primer

	Quality Assurance (QA)	Quality Improvement (QI)
Goal	Monitoring and ensuring compliance with a previously determined metric or standard	Continuously evaluating systems and processes to deliver the best care possible
Orientation	Reactive, typically mandated	Proactive, guided by gaps
Focus	Outliers, “fall-outs”, individuals	Processes and systems
Responsibility	Specific committee or appointed group	Staff involved in the process at every level
Scope	Individual healthcare provider	Patient care process
Who initiates and leads	Leadership	Frontline staff
Time frame	Prescribed and typically static	Continuous and evolving

Quality Assurance to Quality Improvement

Quality Assurance

Monitor attending physician chart completion within 24 hours and suspend those who are “non-compliant”

Quality Improvement

Involve frontline attending physicians:

- To better understand the barriers to chart completion within 24 hours
- Identify root causes
- Test solutions to improve the entire documentation process
- Spread and sustain improvements

Name that QI Methodology

Method created by Motorola to improve the quality of the output of a process by identifying and removing the causes of defects and minimizing variability across the process (narrow the distribution curve)

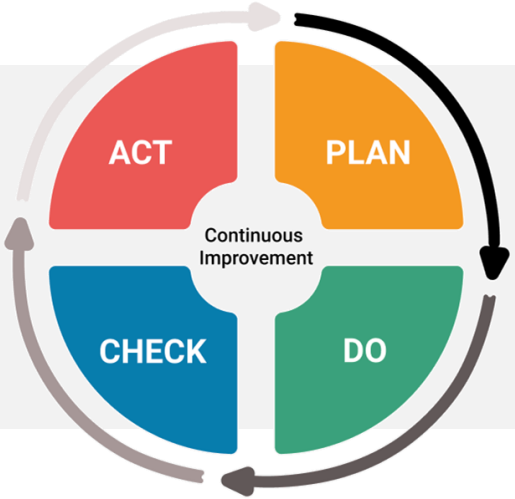
A continuous improvement method developed by Toyota that maximizes customer value while minimizing waste

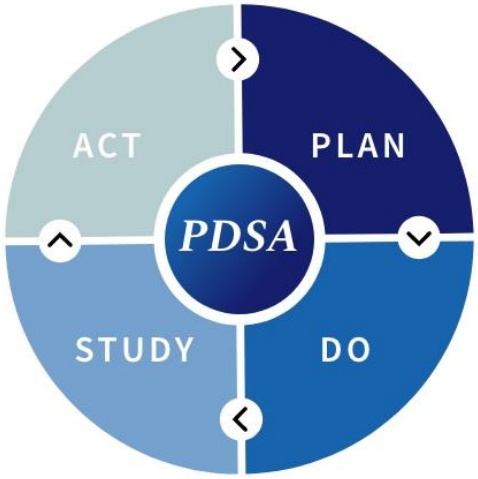
Method developed by the Institute for Healthcare Improvement (IHI) consists of 3 fundamental questions and the PDSA cycle to guide the tests of change to determine if the change is an improvement

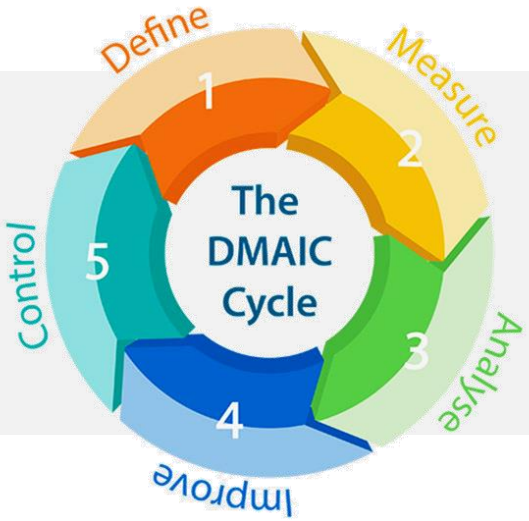
Which one is best?

Spoiler!

- No Quality Improvement methodology has been proven to be superior
- They have much more in common than different
- The underlying principles are the same





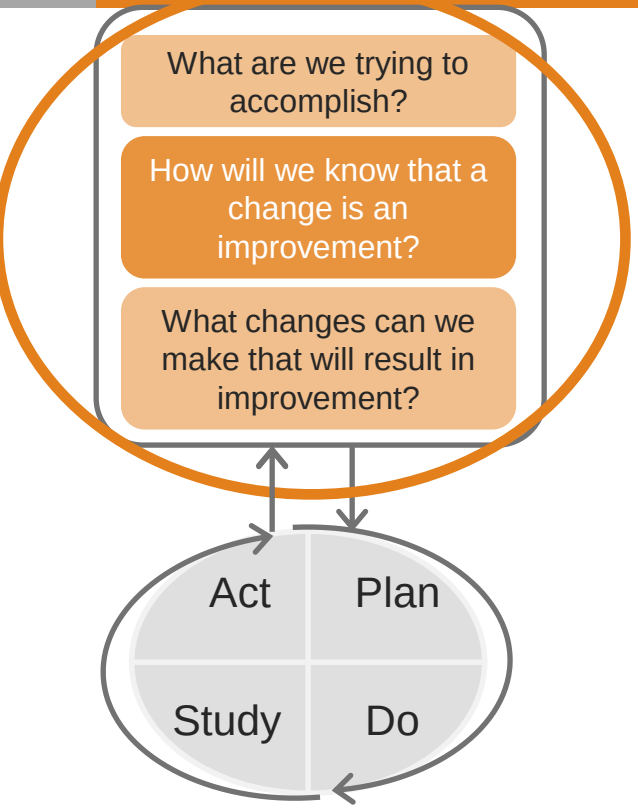


Some Improvement Methods, Snapshot

GENERAL CHARACTERISTICS	PDSA*	SIX SIGMA	LEAN
Structured problem-solving methodology	X	X	X
Solutions aimed at minimizing / eliminating root causes of problems	+/-	X	X
Rapid experimentation or tests of solutions on a small scale prior to spreading widely	X		+/-
Metrics selected and data collected to measure whether an improvement has been made	X	X	X
Improvement requires a continuous cycle of adjusting the process to enable improved results	X		
Empowerment of front-line staff to manage the sustainment of improvements	X	X	X

**PDSA=Plan-Do-Study-Act, using the Institute for Healthcare Model for Improvement, described on next page*

Introduction to One Improvement Method



Institute for Healthcare Improvement (IHI)
The Model for Improvement

- **What are we trying to accomplish?**
  - *Team Aims*
- **How will we know that the change is an improvement?**
  - *Measurement*
- **What changes can we make that will result in an improvement?**
  - *Tests of Change/Interventions*

*Source: www.ihi.org

What are We Trying to Accomplish?
Developing an Aim Statement

- **Definition:** An aim statement is a clear, explicit summary of what your team hopes to achieve over a specific amount of time including the magnitude of change you will achieve

- Gives a clear shared mental model for both the improvement team as well as outside stakeholders
- Use SMART for your aim statements

Boiled down: *What are you trying to improve? How much by when?*

Aim Statement Examples

To decrease CLABSIs.

- *Is it SMART? (Specific? Measurable? Attainable? Relevant? Time Based?)*

To get to work on time.

- *Is it SMART? (Specific? Measurable? Attainable? Relevant? Time Based?)*

To improve patient flow through the hospital in the next year.

- *Is it SMART? (Specific? Measurable? Attainable? Relevant? Time Based?)*

Aim Statement Examples (continued)

To improve on-time starts (within 5 minutes of scheduled procedure time) in all main OR procedures at Hospital Awesome from 45% to 80% by June 30, 2023.

- *Is it SMART? (Specific? Measurable? Attainable? Relevant? Time Based?)*

To decrease my weight from 220 to 200 pounds by December 31, 2023.

- *Is it SMART? (Specific? Measurable? Attainable? Relevant? Time Based?)*

How Will We Know that the Change is an Improvement? *Measurement*

How will we know that a change is an improvement?

Outcome Measures

- Results in performance attributable to testing or implementing an intervention
- How is the health of the patient impacted?

Example: # or rate of pressure injuries stage 2 or higher during hospitalization

Process Measures

- Steps in a process that lead to a change (either positive or negative) to an outcome measure

Example: Compliance with pressure injury prevention care bundle or compliance with the risk assessment (Braden Scale)

Balancing Measures

- Measures unintended consequences of change(s) in the system expected or not. “Robbing Peter to Pay Paul”

Example: # of PT consults to get patients out of bed

**Attribution for example measures goes to Jeremy Segall and Nicole McBarnette from System-wide Performance Improvement, Office of Quality & Safety, NYC Health + Hospitals*

How Will We Know that the Change is an Improvement? *Measurement (non-healthcare)*

How will we know that a change is an improvement?

Outcome Measures

- Results in performance attributable to testing or implementing an intervention
- How is the health of the patient impacted?

Example: # of pounds I weigh

Process Measures

- Steps in a process that lead to a change (either positive or negative) to an outcome measure

Example: # of sugared drinks I consume

Balancing Measures

- Measures unintended consequences of change(s) in the system expected or not. “Robbing Peter to Pay Paul”

Example: # of social interactions I have to go to Starbucks to get my sugared drink

What is an Equity Lens?

A proactive approach to address equitable care in QI projects

- Helps with project design, PDSA cycles, decision making, resource allocation→ equitable processes, program, and policies

Why?

- Project done without an equity lens can perpetuate disparities

Source: Linelle Campbell, MD, Komal Bajaj, MD and Jacobi-NCB Quality Improvement Team

Back to Our Example of Measures: Applying an Equity Lens

Outcome

- # or rate of pressure injuries stage 2 or higher during hospitalization

Process

- Compliance with pressure injury prevention care bundle
- Compliance with the risk assessment (Braden Scale)

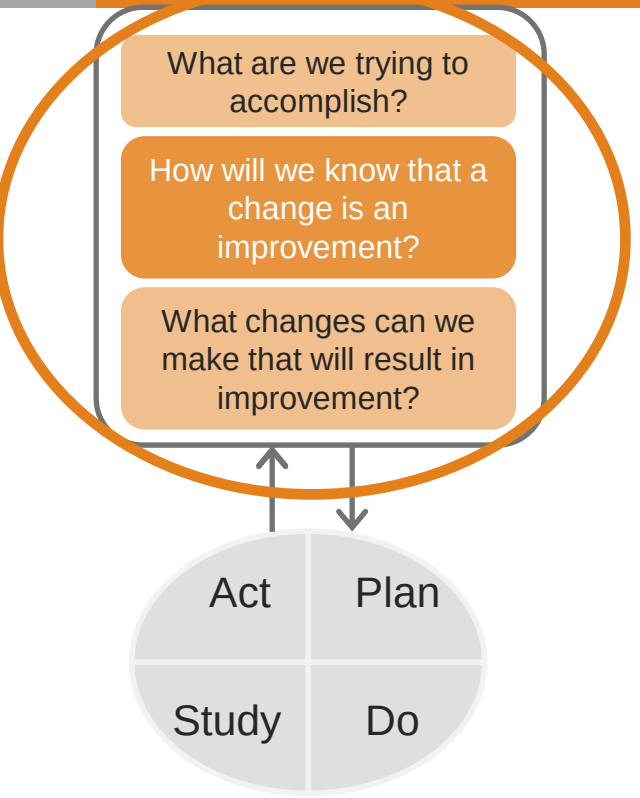
Balancing

- # of PT consults to get patients out of bed

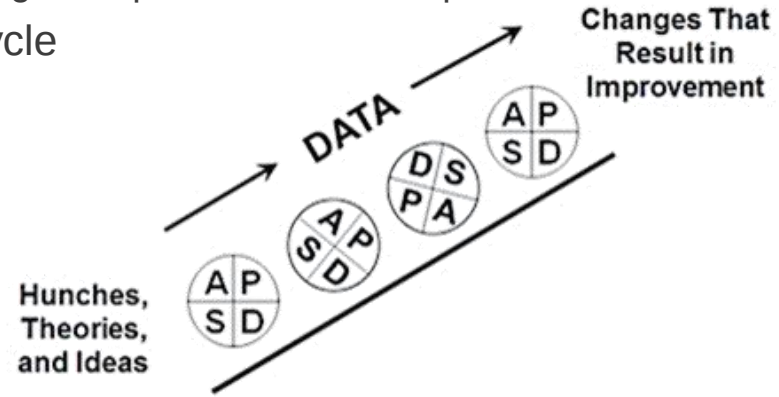
Equity Lens

- # of patients with pressure injuries stage 2 or higher stratified by primary language spoken in household

What Changes Can We Make that Will Result in an Improvement? *PDSA Cycles*



- Making small changes over a short period of time to test if the change works
- PDSA = Plan, Do, Study, Act
  - **Plan:** identify the change you want to make
  - **Do:** make the change
  - **Study:** it for a pre-set period of time
  - **Act**: on the change, keep it, refine it, or drop it
- Onto the next cycle



Tips To Consider When Conducting Small Tests of Change

- Plan multiple cycles for a test of a change
- Scale down the size of the test (the number of patients or location)
- Test with volunteer staff or clinicians (your innovators and early adopters)
- Do not try to get **complete** consensus, "buy-in," etc. during tests
- Be innovative to make the test feasible
- Collect useful data during each test
- Try a test quickly

**Source: www.ihi.org*

GROUP EXERCISE

Small Group Discussions & Report-out

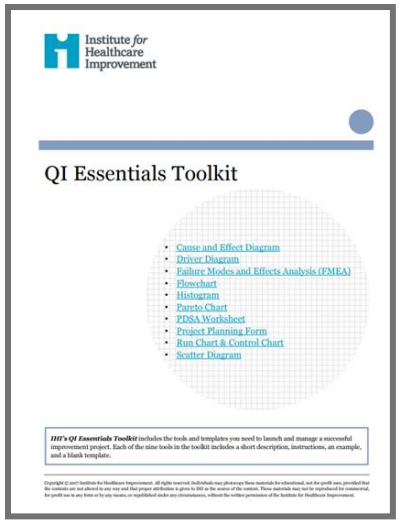
GREATER NEW YORK HOSPITAL ASSOCIATION & UNITED HOSPITAL FUND

CLINICAL QUALITY FELLOWSHIP PROGRAM

Instructions

- You will be split into 5 groups
- Each group will obtain a hypothetical healthcare challenge to work on
- Answer the three questions in the Institute for Healthcare Improvement's (IHI) Model for Improvement to delve into the issue
  - What are we trying to accomplish? *Aim*
  - How will we know the change is an improvement? *Measurement*
  - What changes can we make that will result in an improvement? *Tests of Change*
  - *Bonus!* Think through an equity lens your team would apply to the project
- Each group will provide a report-out

Why Use Quality Improvement Tools?



IHI's QI Essentials Toolkit includes the tools and templates you need to launch a successful quality improvement project and manage performance improvement. Each of the ten tools can be used with the Model for Improvement, Lean, or Six Sigma, and includes a short description, instructions, an example, and a black template.

- Assesses a problem or area you think needs improvement
- Narrows down on an issue
- Identifies improvement priorities
- Engages teams to focus on improvement
- We'll only discuss a sub-set of commonly used tools today

*Source: www.ihi.org

Problem:
Catheter Associated Urinary Tract Infections

Catheter Associated Urinary Tract Infections (CAUTIs) have been consistently high throughout Hospital Awesome, which is part of an 8-hospital large, urban health system. As clinicians try to achieve “zero harm” they are determining strategies to reduce this infection. When reviewing data over the past 8 months, there were 36 CAUTIs reported throughout the hospital. What would a team at Hospital Awesome do to start assessing the problem?

SMART Aim Statement

Help us create an aim statement for this Performance Improvement project…

So Many Performance Improvement Tools…

Where do we start??

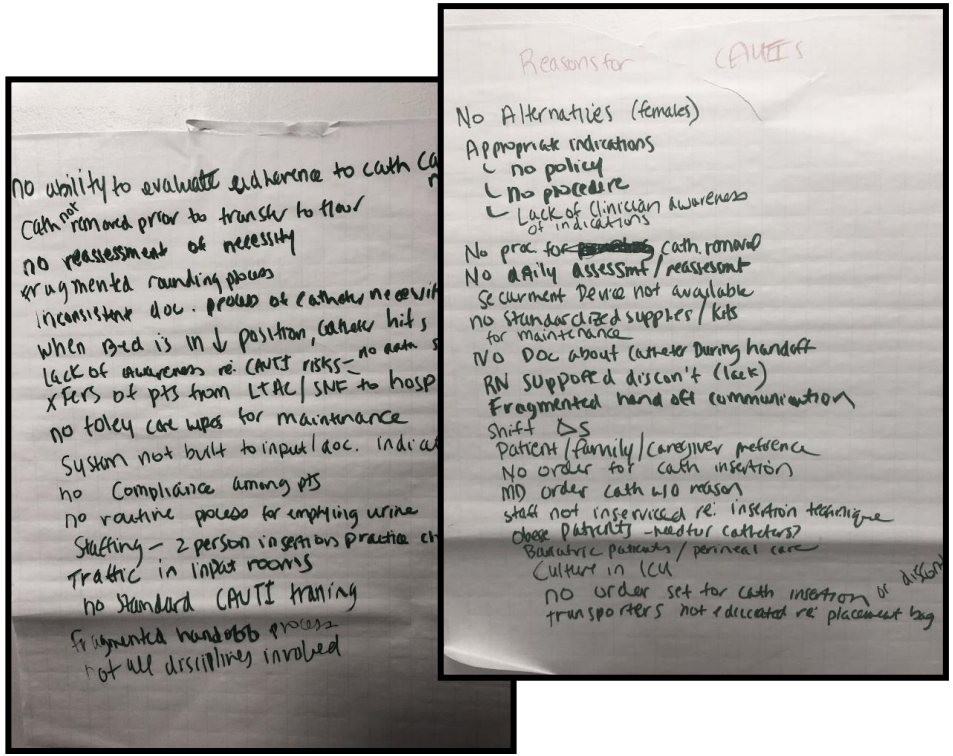
- Brainstorming
- Fishbone (Ishikawa)
- Pareto Chart
- Impact Effort Matrix
- Process Mapping
- 5 Why's
- Driver Diagram

Tools are neither "one size fits all" or mutually exclusive.

Brainstorming

An **activity** (formal or informal) in which people put forward any idea(s) that occur to them at the moment

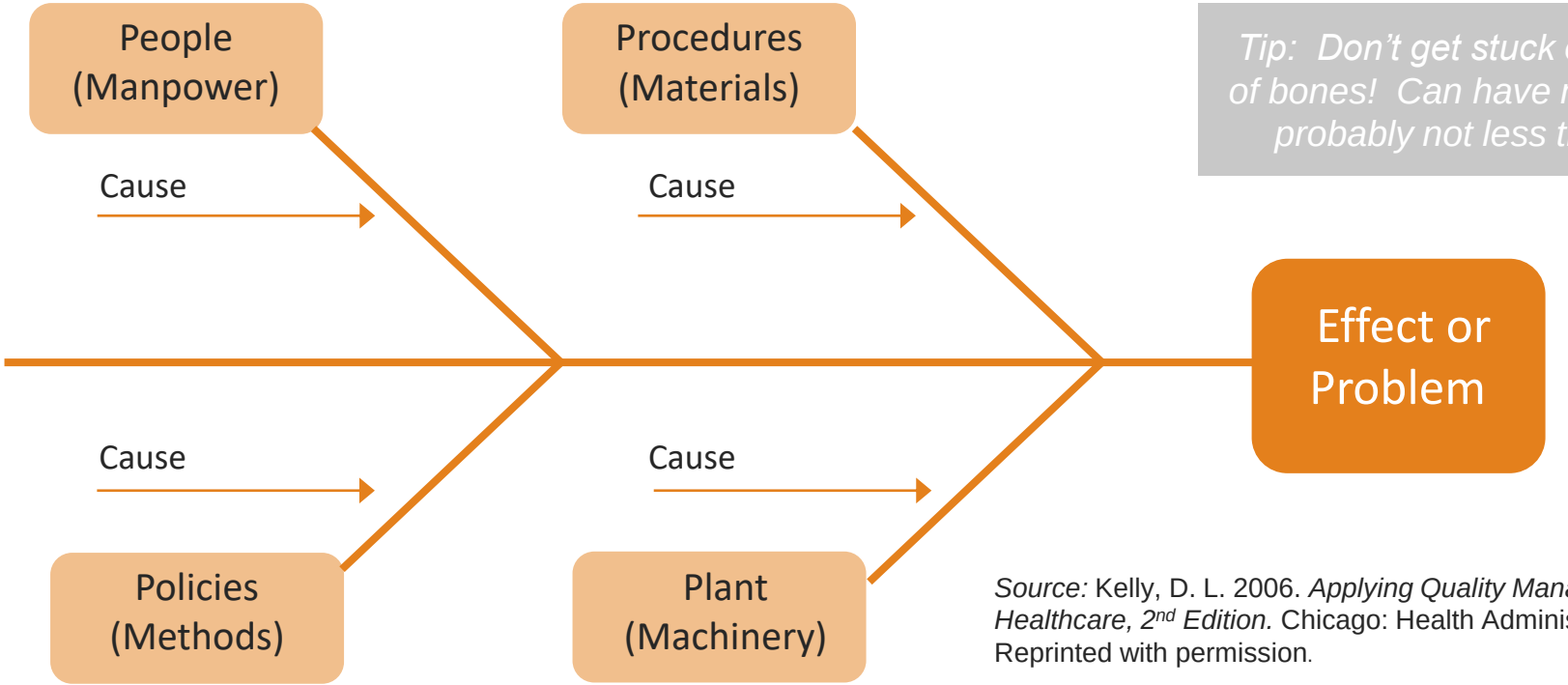
- No ideas should be judged or perceive negatively
- The more ideas, the better



The group may re-consider the ideas, make decisions about their relevance and importance, group them (see fishbone), and/or prioritize them (see Pareto Chart).

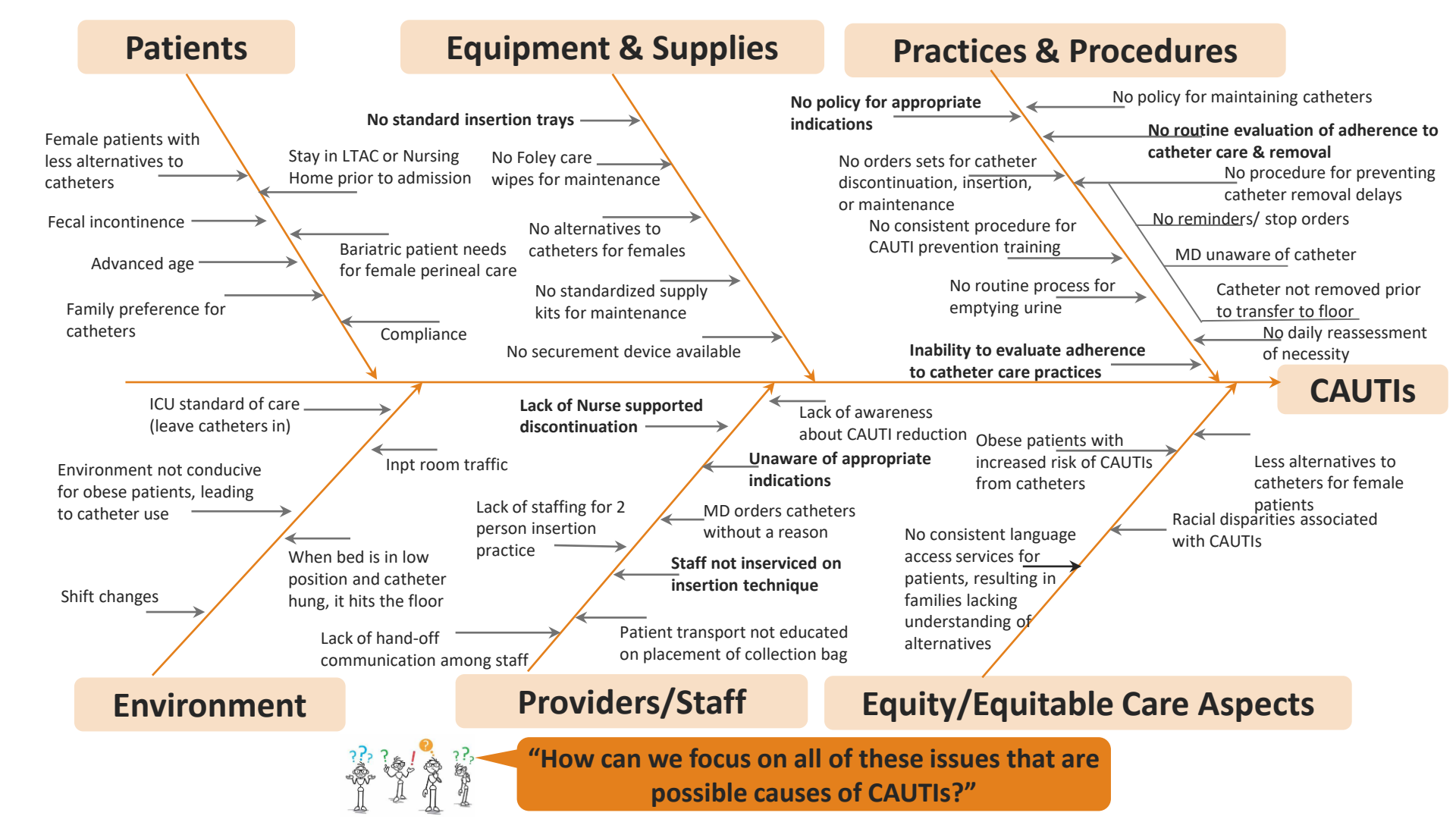
Fishbone Diagram
AKA: Ishikawa or Cause & Effect Diagram

A visual tool to help identify the cause and effect of a problem



Tip: Don't get stuck on the # of bones! Can have more, but probably not less than 4.

Source: Kelly, D. L. 2006. *Applying Quality Management in Healthcare, 2nd Edition.* Chicago: Health Administration Press. Reprinted with permission.

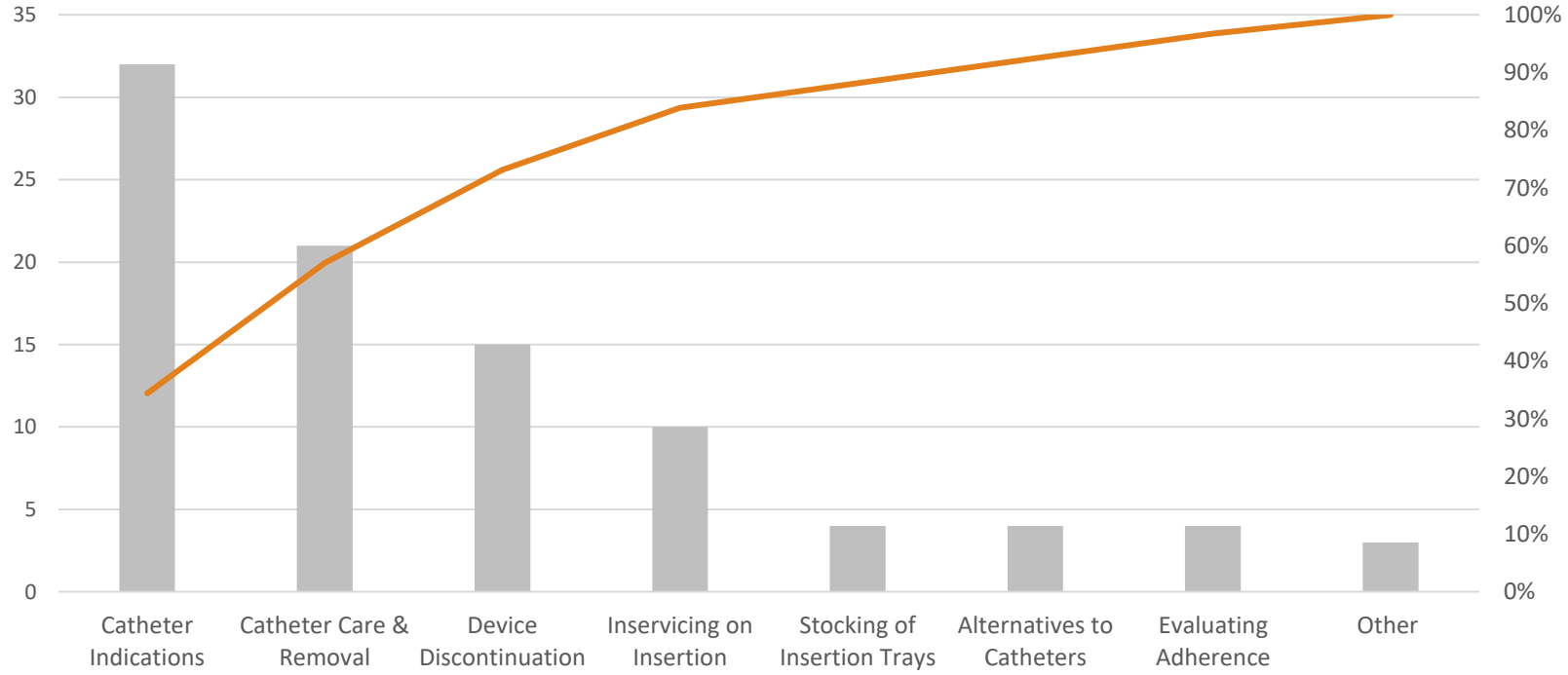

Patients
Equipment & Supplies
Practices & Procedures
CAUTIs
Environment
Providers/Staff
Equity/Equitable Care Aspects
Female patients with less alternatives to catheters
Fecal incontinence
Advanced age
Family preference for catheters
Stay in LTAC or Nursing Home prior to admission
Bariatric patient needs for female perineal care
Compliance
No standard insertion trays
No Foley care wipes for maintenance
No alternatives to catheters for females
No standardized supply kits for maintenance
No securement device available
No policy for appropriate indications
No orders sets for catheter discontinuation, insertion, or maintenance
No consistent procedure for CAUTI prevention training
No routine process for emptying urine
Inability to evaluate adherence to catheter care practices
No policy for maintaining catheters
No routine evaluation of adherence to catheter care & removal
No procedure for preventing catheter removal delays
No reminders/ stop orders
MD unaware of catheter
Catheter not removed prior to transfer to floor
No daily reassessment of necessity
ICU standard of care (leave catheters in)
Inpt room traffic
Environment not conducive for obese patients, leading to catheter use
When bed is in low position and catheter hung, it hits the floor
Shift changes
Lack of hand-off communication among staff
Lack of Nurse supported discontinuation
Unaware of appropriate indications
Lack of staffing for 2 person insertion practice
Staff not inserviced on insertion technique
Patient transport not educated on placement of collection bag
Lack of awareness about CAUTI reduction
MD orders catheters without a reason
Obese patients with increased risk of CAUTIs from catheters
No consistent language access services for patients, resulting in families lacking understanding of alternatives
Racial disparities associated with CAUTIs
Less alternatives to catheters for female patients
"How can we focus on all of these issues that are possible causes of CAUTIs?"

Pareto Chart

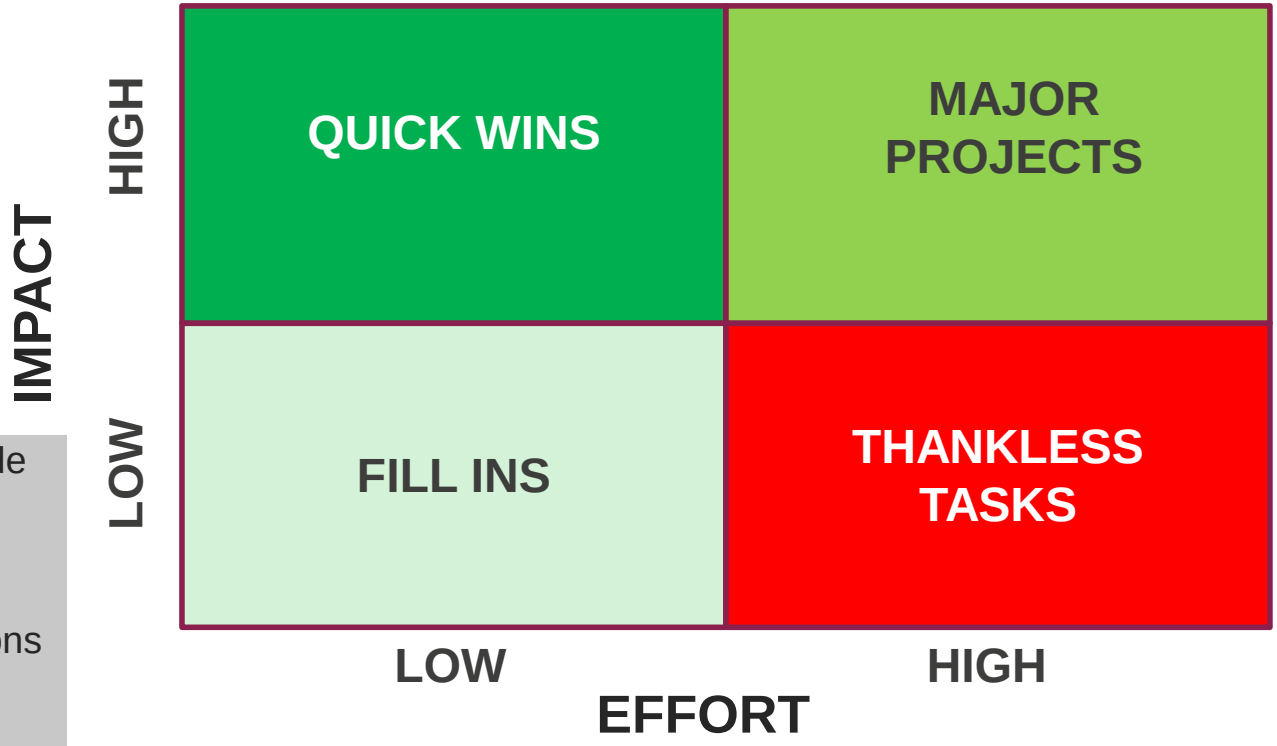
- Graphically demonstrates the relative importance of problems
- Based on the proven “Pareto” principle: 20% of the sources cause 80% of any problem
- Focus on key problems that offer the greatest potential for improvement
- Helps prevent shifting the “problem” to where the “solution” removes some causes but worsens others and does not fix the problem

Example of Pareto Chart:

Key Areas of Focus to Reduce Catheter Associated Urinary Tract Infections



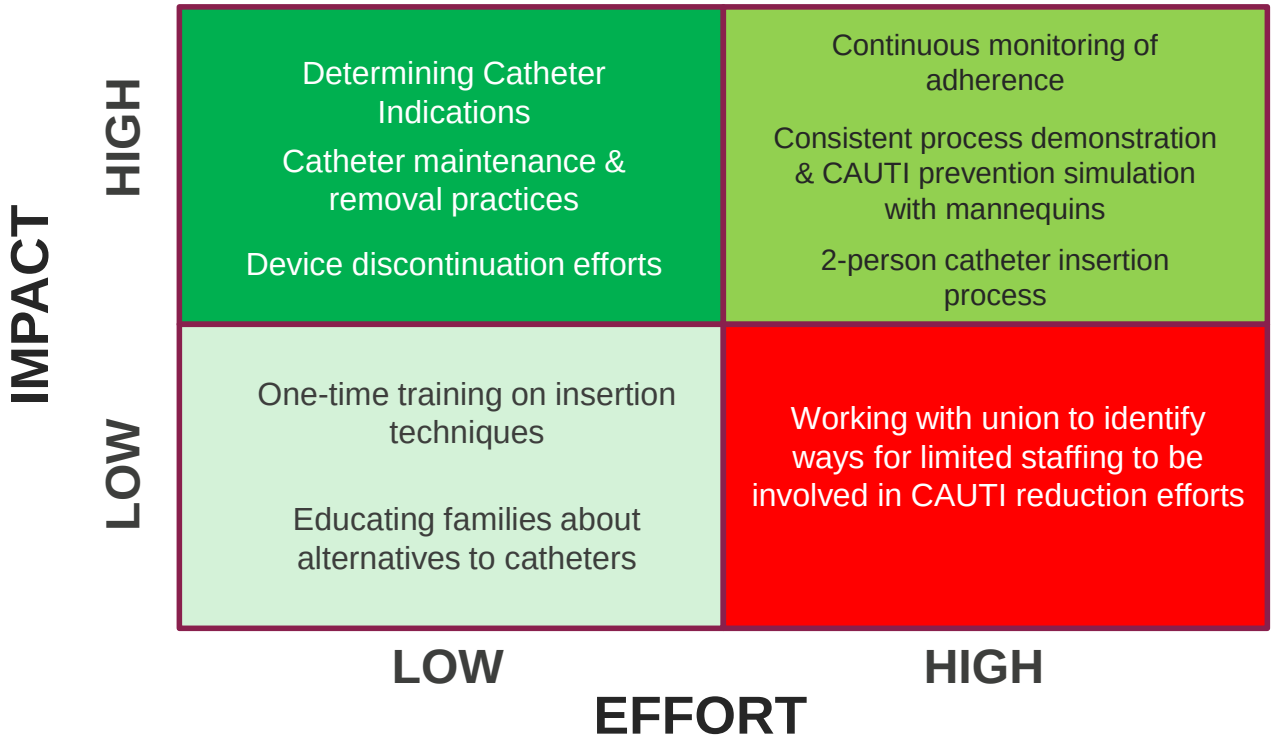
Impact Effort Matrix



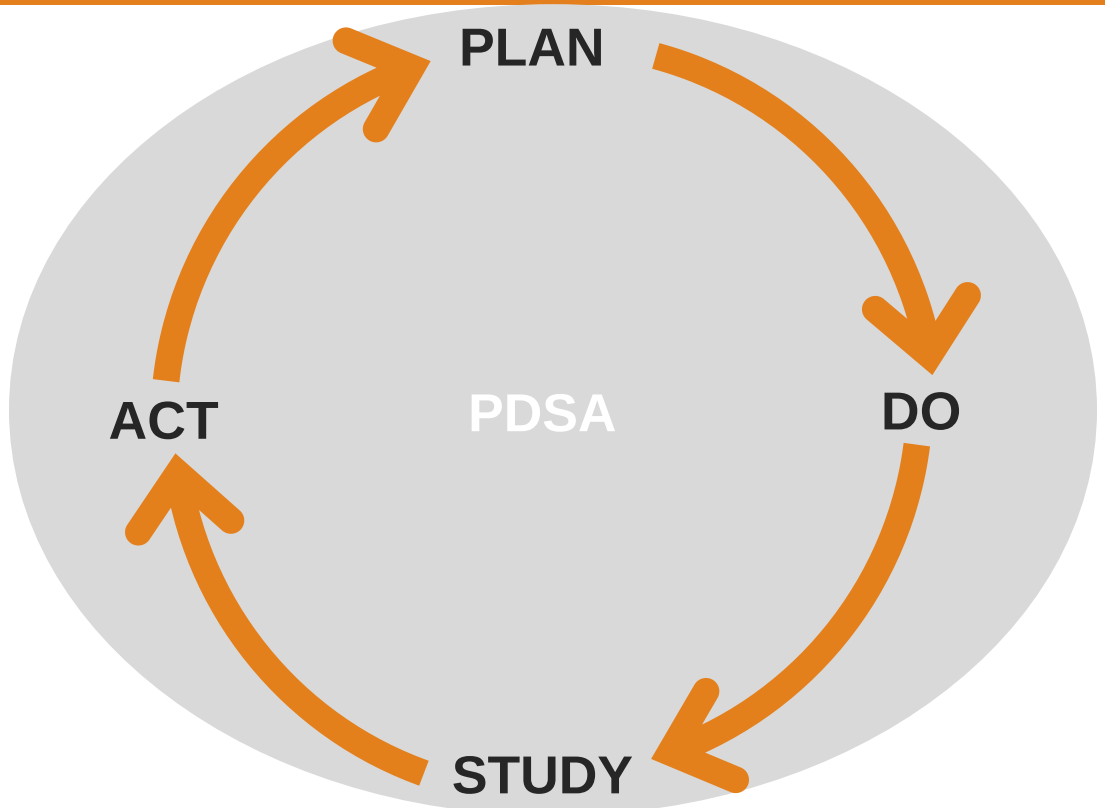
Purpose: Designed to decide which of many suggested solutions to implement.

- Provides answers to question of which solutions seem easiest to achieve with the most impact.

Impact Effort Matrix Example: CAUTIs

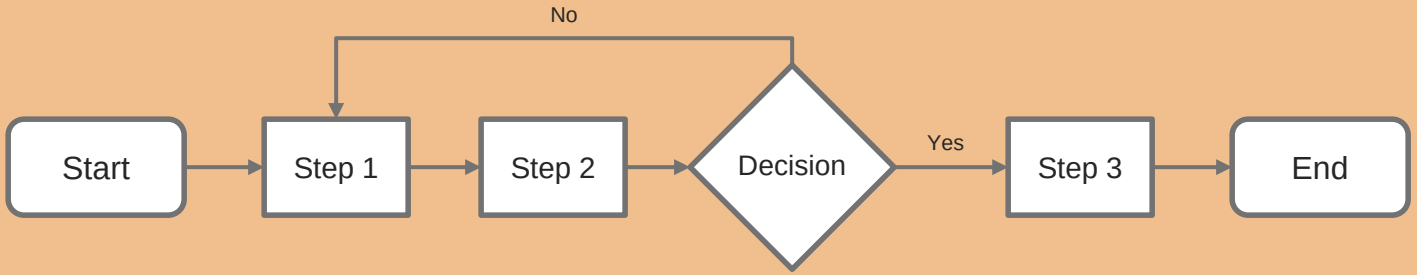


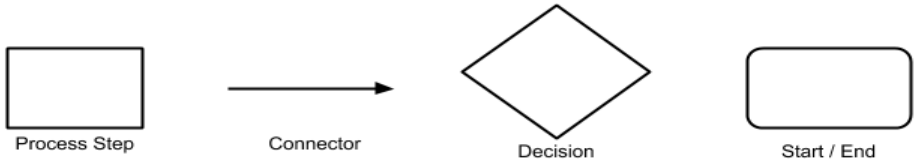
PDSA Cycle



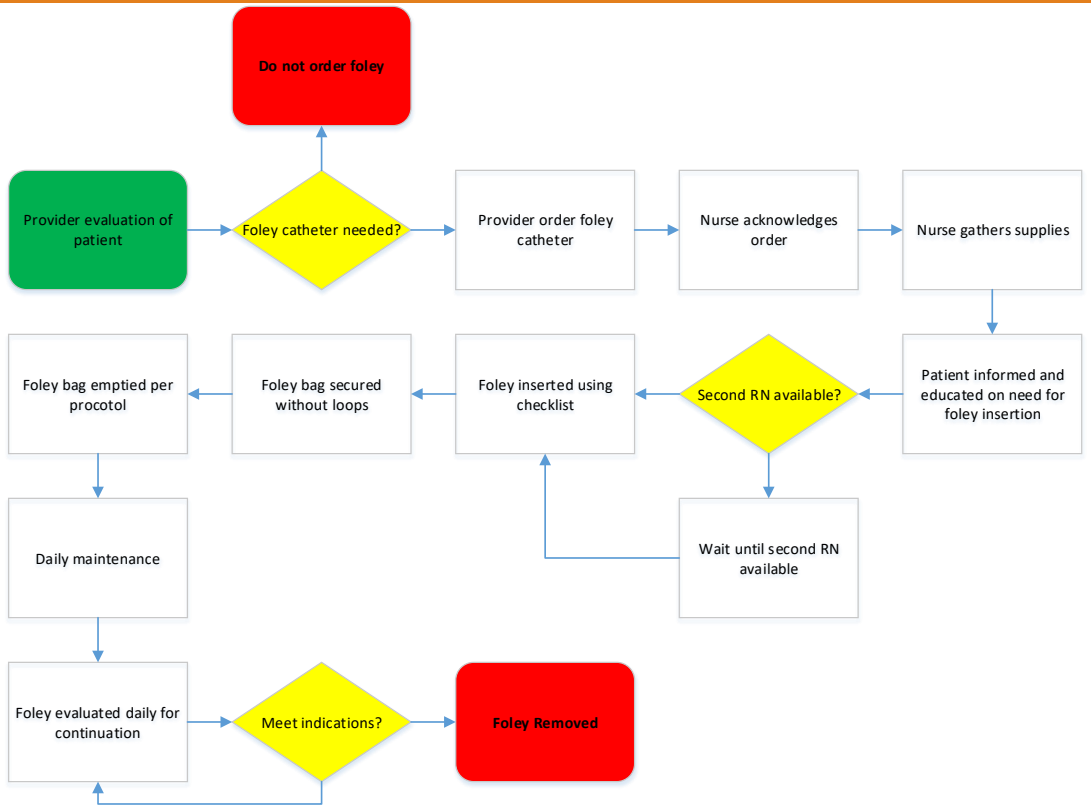
Process Map

- A graphical representation of a process, depicting inputs, outputs, and units of activity
  - Should detail the entire process and all of its steps
  - Allows for analysis and intervention regarding optimization of workflow.



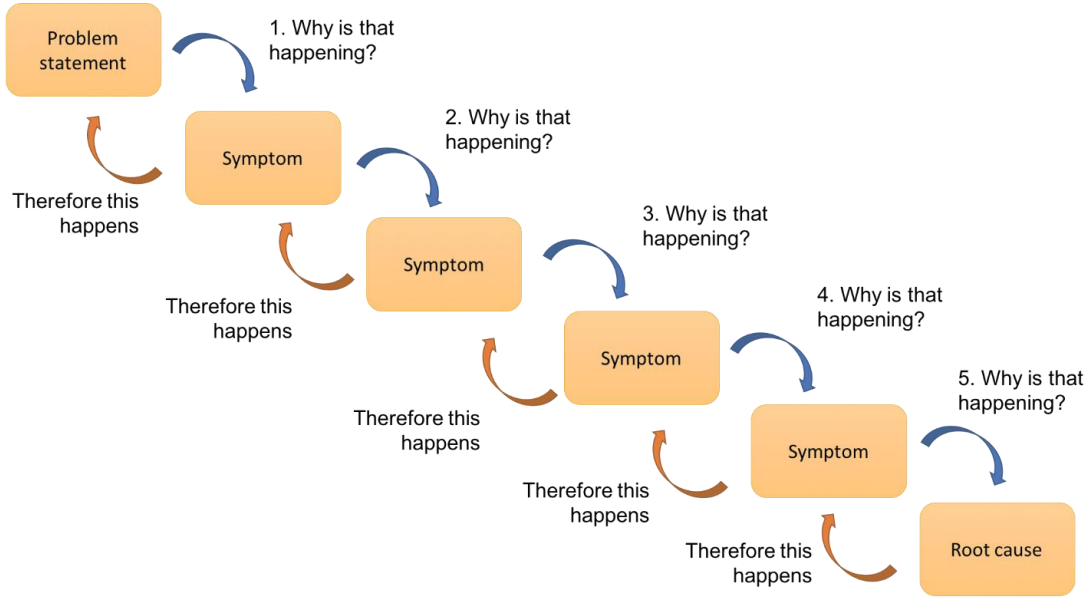


Foley Catheter Process Map

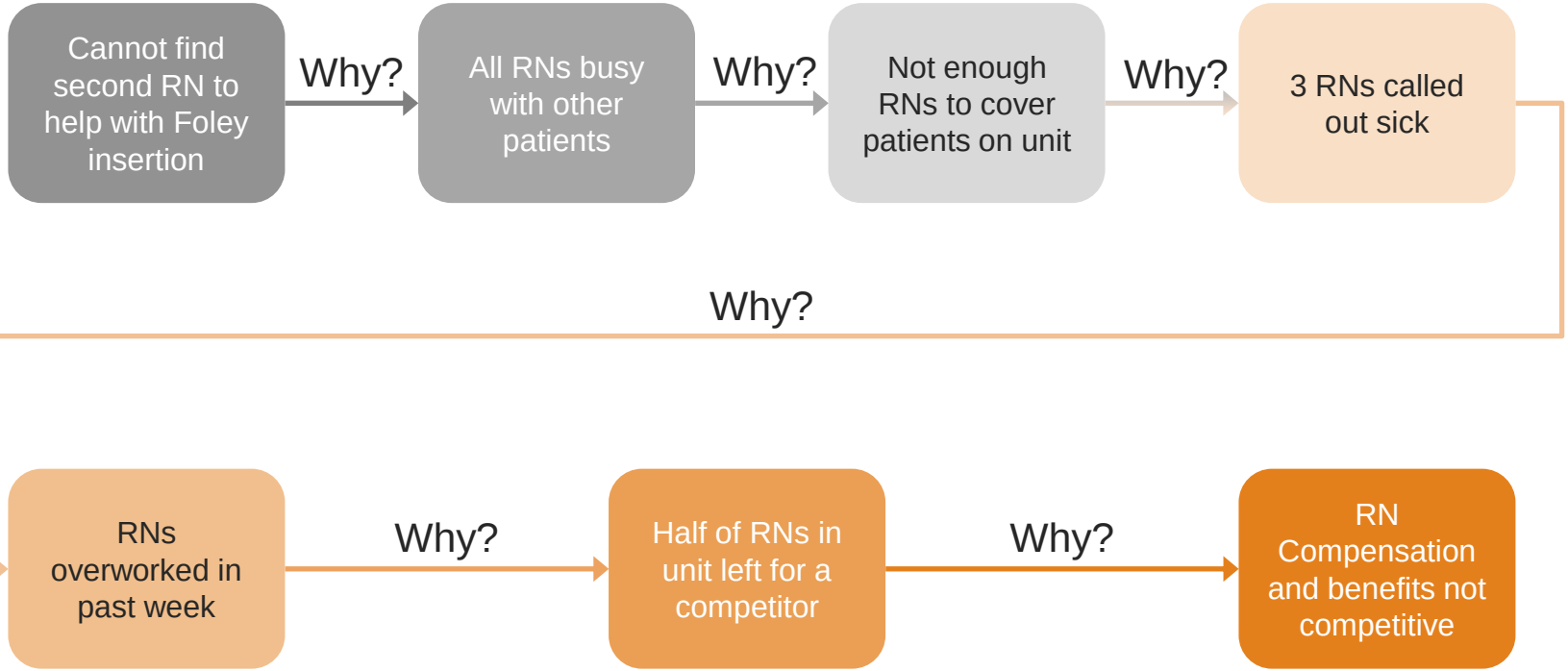


5 Why's

- Tool to "dig" deeper into **symptoms** to identify **root causes** that are *causing* the **symptoms**
- Have to ask **"why"** at least **5 times** to get to the root cause
- Check the logic by working backwards using **"therefore"**

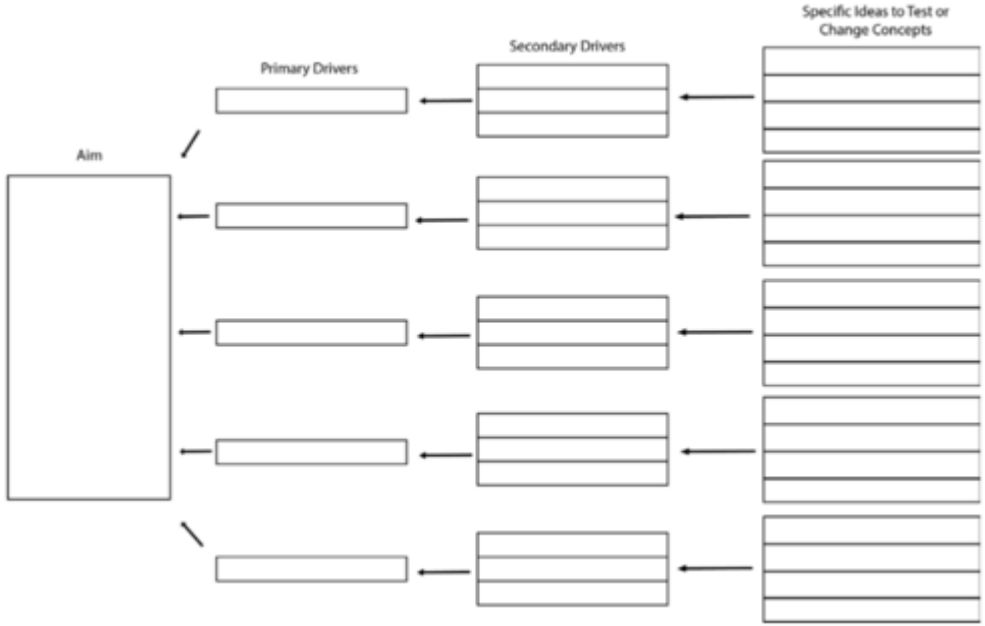


CAUTI 5 Why's


Cannot find second RN to help with Foley insertion
Why?
All RNs busy with other patients
Why?
Not enough RNs to cover patients on unit
Why?
3 RNs called out sick
Why?
RNs overworked in past week
Why?
Half of RNs in unit left for a competitor
Why?
RN Compensation and benefits not competitive

Also Another Important Tool…
Driver Diagram

- What “drives” or contributes to a project Aim?
- Shows relationship between:
  - Project **aim**
  - **Primary drivers** that contribute directly to achieving the aim
  - **Secondary drivers** that are components of the primary drivers
  - **Specific change ideas to test** for each secondary driver

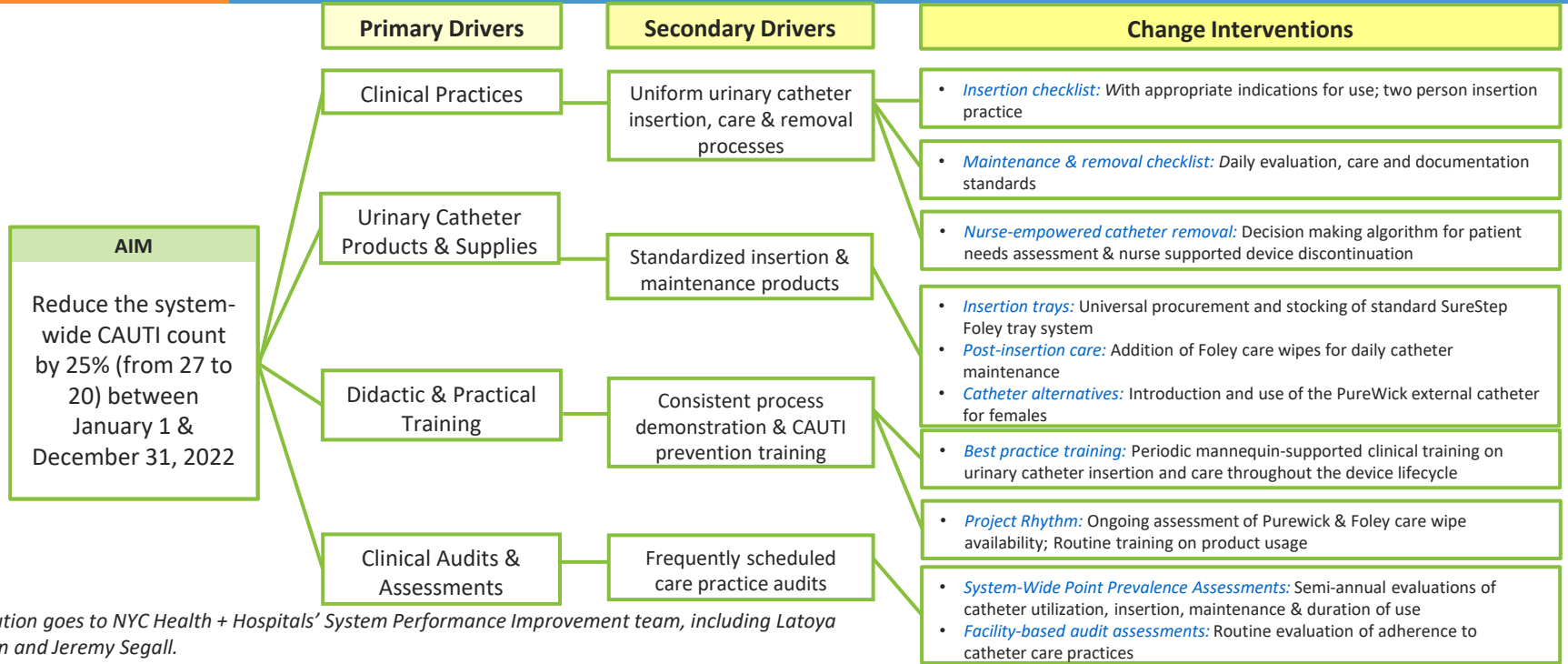


Source: http://www.ihi.org/resources/Pages/Tools/Driver-Diagram.aspx

Driver Diagram Example: *CAUTI Initiative*

AIM STATEMENT

Reduce the system-wide CAUTI count for all acute care facilities by 25% (from 27 to 20) between January 1 and December 31, 2023



Attribution goes to NYC Health + Hospitals' System Performance Improvement team, including Latoya Jackson and Jeremy Segall.

With All of These Tools in Mind…

- Engaging in quality improvement is not easy
- The following pages include a sub-set of common challenges when involved in quality improvement efforts
- There are solutions though; rather than merely addressing barriers in quality, it is important to identify ways to overcome those issues to move forward with your team

Common Challenges and Barriers in Quality Improvement…

Challenge/Barrier Examples	Suggested Solutions
Lack of Executive Sponsorship	• Try to identify: Who drives quality in your organization? Who oversees quality improvement at the leadership level? • With leadership identified, try to identify and set realistic, achievable quality improvement goals.
Lack of participation by clinical or front line staff: fear of change	• Identify clinicians and administrative personnel with energy and interest in making change. • Set common goals with team; this will help them understand quality improvement impact. • Continuously engage leadership to encourage accountability and obtain their buy-in to provide support.
Lack of resources to support quality improvement (Material, Human, and Time)	• Present your progress to leadership to show that what you are doing is having an impact. • Before asking leadership for new resources (human or equipment), examine current process, analyze data, initiate tests of change—don't just jump to "no resources" mentality.
Failure or inability to link quality improvement efforts with costs	• Try to make the business case for quality improvement (see example on next page). • Obtain support from Finance, if possible.

Common Challenges and Barriers in Quality Improvement… *(continued)*

Challenge/Barrier Examples	Suggested Solutions
Scope too large/Lack of Clarity or Focus	• Too many priorities puts you at risk for, ”this is the flavor of the month.” Think through small tests within 1 or 2 areas of focus first. • Set aside other aspects of project until you have a grasp on primary focus.
”Scope Creep”	• If new or too many topics are identified by team, eventually spin off sub-groups. • Stay on track with primary focus at first.
Flawed Measurement Systems, Inaccurate or unavailable data	• Try to identify something measurable, using small amounts of data at first; if you get hung up on “big data” or a complicated measurement strategy, you will not move forward. • Before jumping into something, think through: How will we measure success? What data sources are available? • Continue to refine your data collection process.

Common Challenges and Barriers in Quality Improvement… *(continued)*

Challenge/Barrier Examples	Suggested Solutions
Regulatory or reimbursement incentives	• Keep the momentum by focusing on, “This is what we need to accomplish to improve patient care and outcomes.” • Your team can identify areas of focus that impact the regulatory environment, while improving patient care (e.g., Value Based Payment Quality Improvement Program (VBP) metrics, specific measures TJC focuses on like 2-patient identifiers, suicide assessment/reassessment)
Sustainability, Holding Gains in Quality Improvement (this is the #1 challenge in quality improvement!)	• Team wind up concentrating on other priorities. Make sure this effort is an imperative of leadership and that you have buy-in from the team. That is the surest way to sustain and spread gains.

Thank you!

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