



# QI Methods

## Methods, Aims, and Tools: What the Instructor Needs to Know

**Erin Stucky Fisher, MD, MHM, FAAP**

Medical Director for Quality and Patient Safety  
Professor of Clinical Pediatrics, UCSD

- 
- ▶ Disclosure:
  - ▶ 1. University of California grant, office of the President, Center for Health Quality and Innovations: improving discharges
  - ▶ 2. It took a long time to get to #1



# Objectives

---

- ▶ Describe the importance of defining a QI strategy prior to engaging in or teaching QI
  - ▶ Compare and contrast the two commonly used QI methods and explain the value of each
  - ▶ Demonstrate basic skills in educating learners on the use and creation of a SMART aim and flowchart
- 





# What is our QI strategy?

---

- ▶ Core concepts
- ▶ Prioritization
- ▶ Team development
  
- ▶ “Models for improvement” - PDSA and DMAIC methods  
SMART aim and tools
  
- ▶ Project management
- ▶ Sustainability

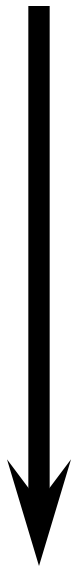


# Change Concepts to Change Ideas

---

Vague, Strategic, Conceptual

Improve decision support for providers



Specific Ideas,  
Actionable results



Embed evidence-based guidelines in  
the care delivery system



Use easily accessible flow sheets to  
embed guidelines for meds and  
treatment into daily practice



Use a flow sheet for 2 patients



# How do we prioritize goals?

If there is...	Consider also...
High volume, risk, cost	*Safety, LOS and resource use
Potential to reduce variation	*Implementation Gap *Local variability
Interest and involvement	* Scope and importance of problem * Level of evidence for potential solution
External competitive drivers	*Regulatory Agency / Institutional priorities
Feasibility of potential solution	*Cost, time *Resources, potential partners



# Potential Projects are Everywhere

- ▶ Periop CV Risk Stratification
- ▶ Periop antibiotics
- ▶ Patient Flow through hospital
- ▶ Reconciling med lists
- ▶ Diabetes control
- ▶ VAP
- ▶ Hand Washing
- ▶ Wrong Site Surgery Prevention
- ▶ Bar Coding
- ▶ Handoffs
- ▶ Reducing lab/procedure waste

- ▶ Patient Satisfaction
- ▶ Enhance hospital reimbursement through better documentation
- ▶ VP shunt outcomes
- ▶ Early enteral nutrition
- ▶ Sono for CVC insertion
- ▶ Analgesics in Acute Abdomen
- ▶ Hospice/palliative care issues
- ▶ Nat'l Patient Safety Goals
- ▶ Pressure support in respiratory disease – risk assessment





# Team development: The Engine of QI

---

Impact the interventions developed  
***and***  
their implementation

- ▶ Critical: potential stakeholders, thought leaders, formal leaders from the facility, academic structure, and individual groups



# Assemble the team: Task Force

---

- ▶ Team leader
- ▶ Facilitator – can act as mediator if needed
- ▶ Team Members:
  - ▶ “All who touch the patient”
  - ▶ Content experts
  - ▶ “High admitters”
  - ▶ Think systemically – community leaders? Patient?
- ▶ Expectation: Engagement



# Model for Improvement



Aim

- What are we trying to change?
- 
- 



# Model for Improvement



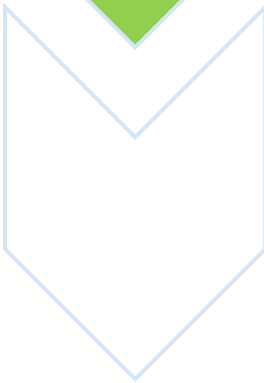
Aim

- What are we trying to change?



Measure

- How will we know a change = improvement?



# Model for Improvement



Aim

- What are we trying to change?



Measure

- How will we know a change = improvement?



Change ideas

- What changes will give us the improvement we want?

# QI Method #1: Lean



# QI Method #1: Lean...

---

- ▶ General Principles
  - ▶ Solicit opinion of frontline staff
  - ▶ Look for value from the patient's perspective
  - ▶ Go to the frontline: observe the work; flowchart the process
  - ▶ Eliminate the steps that the patient would not find valuable (“waste”)



# QI Method #1: "Six Sigma"

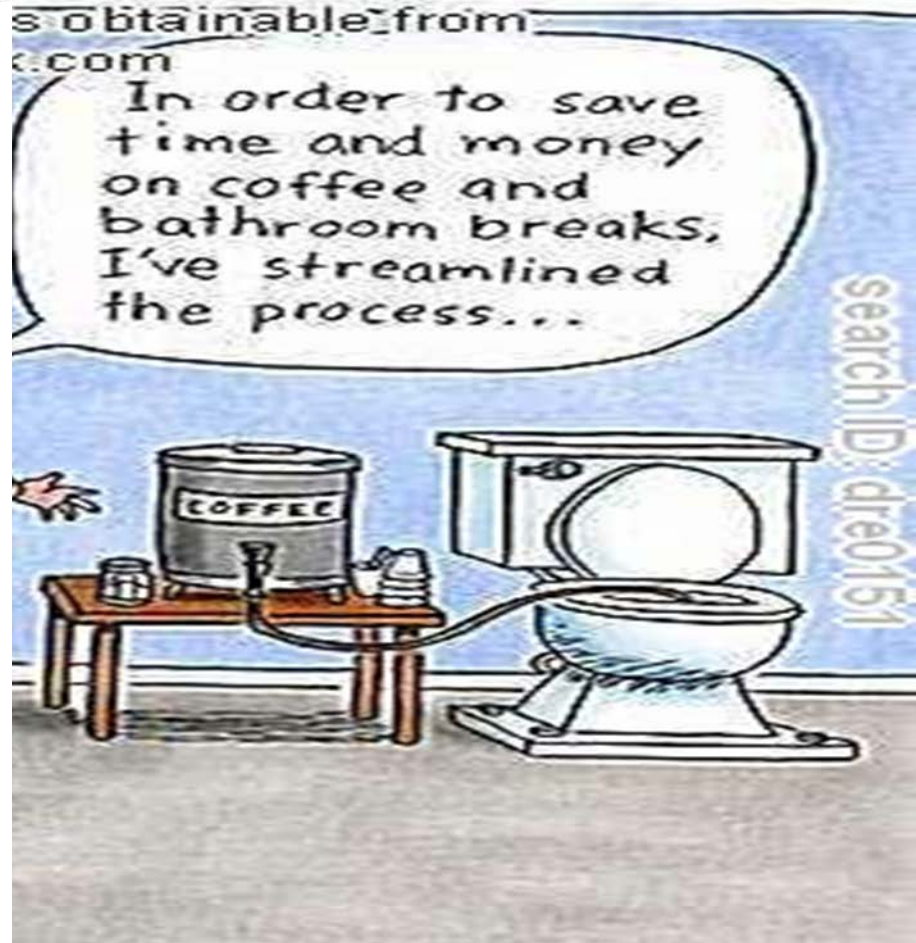
---





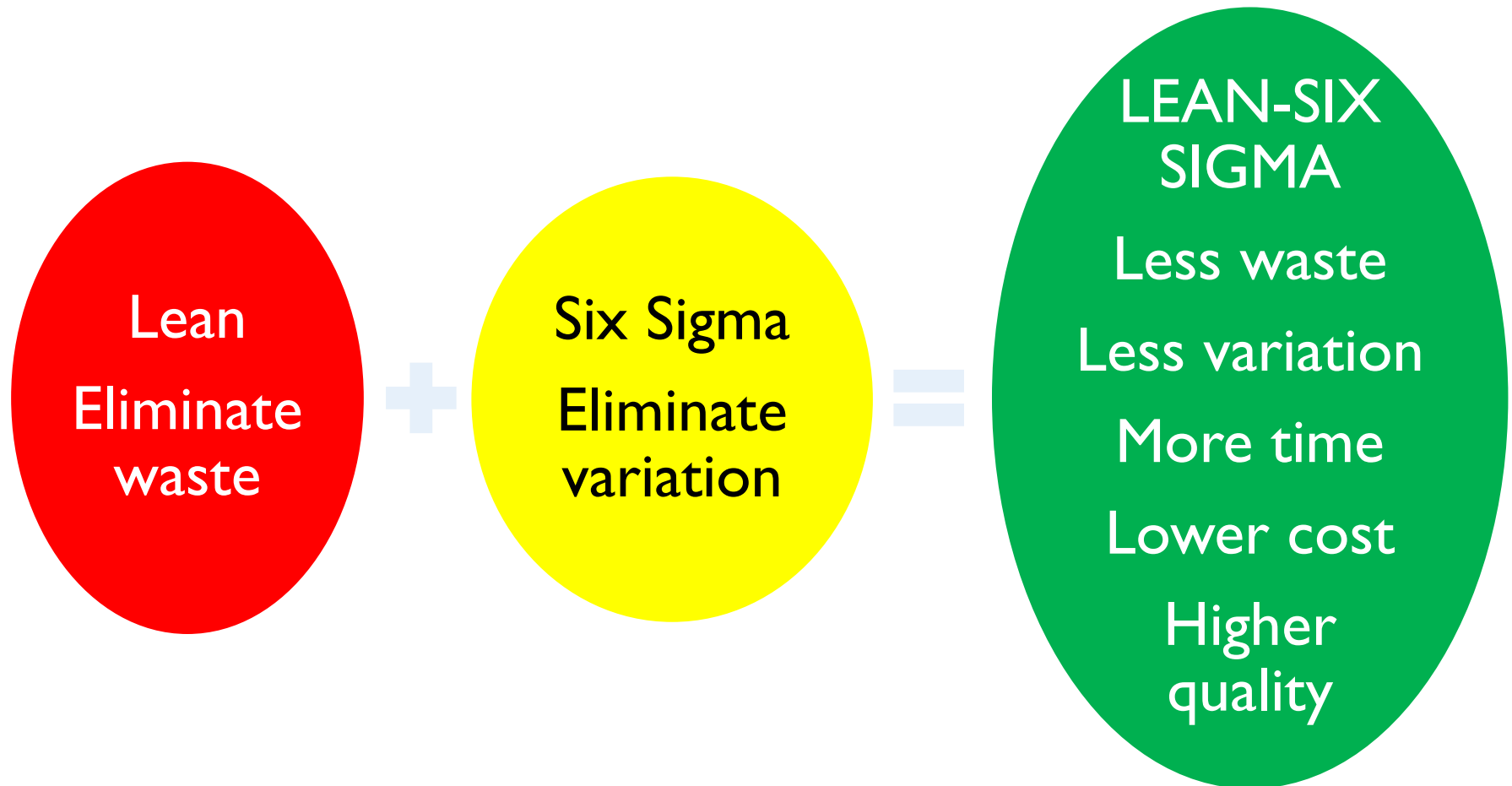
# QI Method #1: Lean and "Six Sigma"

© Original Artist



# QI Method #1: Lean and "Six Sigma"

---

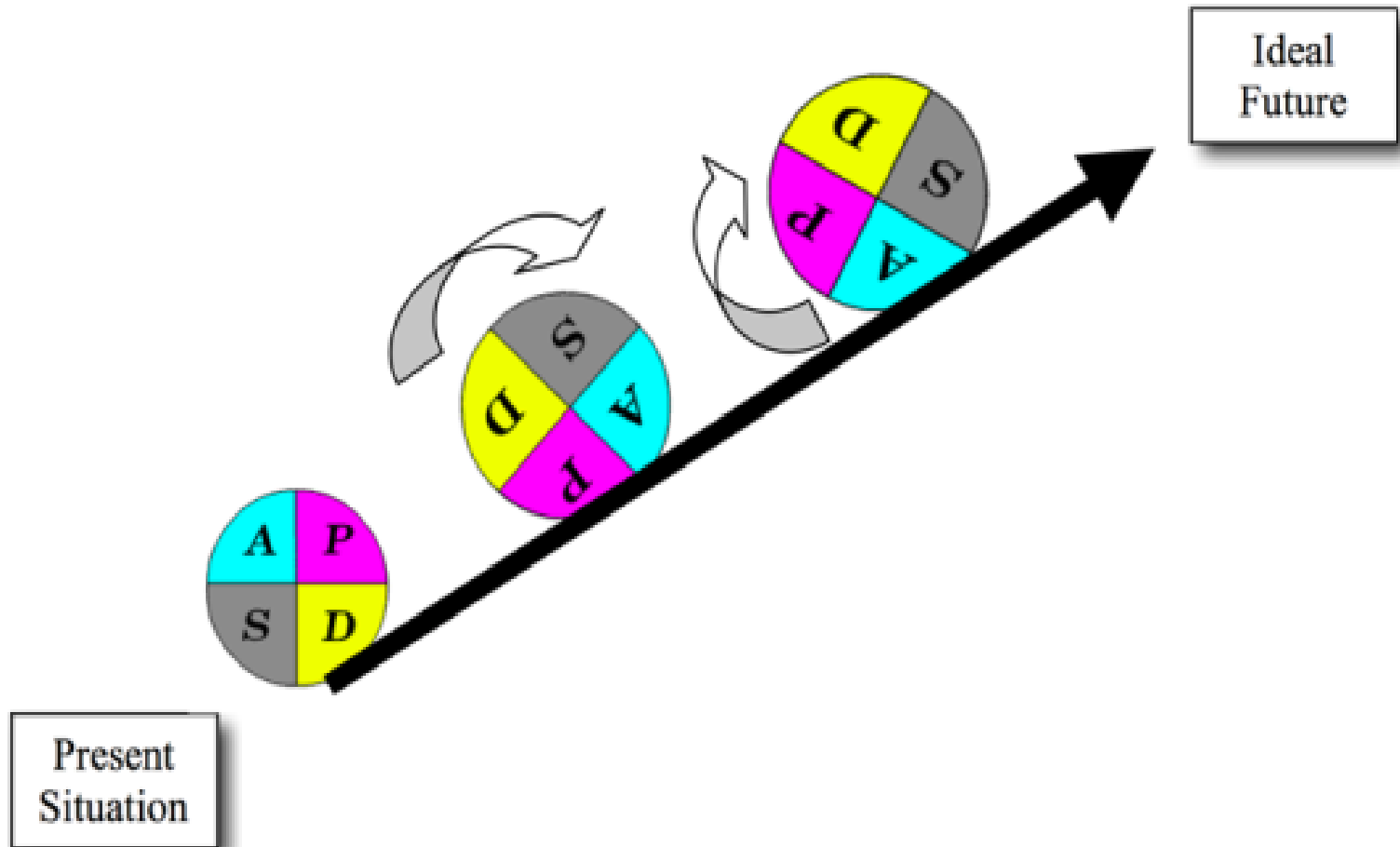


Waste: anything that does not add value

Eliminated waste: by definition adds time

# QI Method #2: PDSA

---



# How to Start: the SMART aim

---

- ▶ List the aim
- ▶ Ask “why” three times
- ▶ Ask “how” three times
- ▶ Look at the new aim statements
- ▶ Pick the best one



# Features of Good Aim Statements

---

- ▶ **Specific**
- ▶ **Measurable**
- ▶ **Aggressive yet Achievable**
- ▶ **Relevant**
- ▶ **Time-bound**



# Sample Aim Statements:

---

## ▶ Treatment

*Within the next 6 months, 80% of post-op craniofacial abscess patients will have antibiotic regimens changed based on antibiotic sensitivities within two hours of the laboratory report*

## ▶ Prevention

*Within the next 6 months 95% of asthmatic patients will be discharged on appropriate steroid therapy*

---



# Exercise 1: The SMART aim statement



# QI Tool Selection Matrix

Tool	Phase of QI			
	Problem Identification	Data Analysis	Solution Planning	Result Evaluation
Brainstorming	X	X	X	X
Affinity diagram	X		X	
Multi-voting; nominal group technique	X	X	X	X
Flowchart /Process map	X		X	
Cause-and-Effect Diagram (Ishikawa)	X	X		
Failure Modes Effects Analysis (FMEA)	X	X	X	X
Barrier analysis	X		X	
Pareto Chart	X	X		X
Run Chart	X	X		X
Statistical Process Control (SPC) Chart	X	X		X

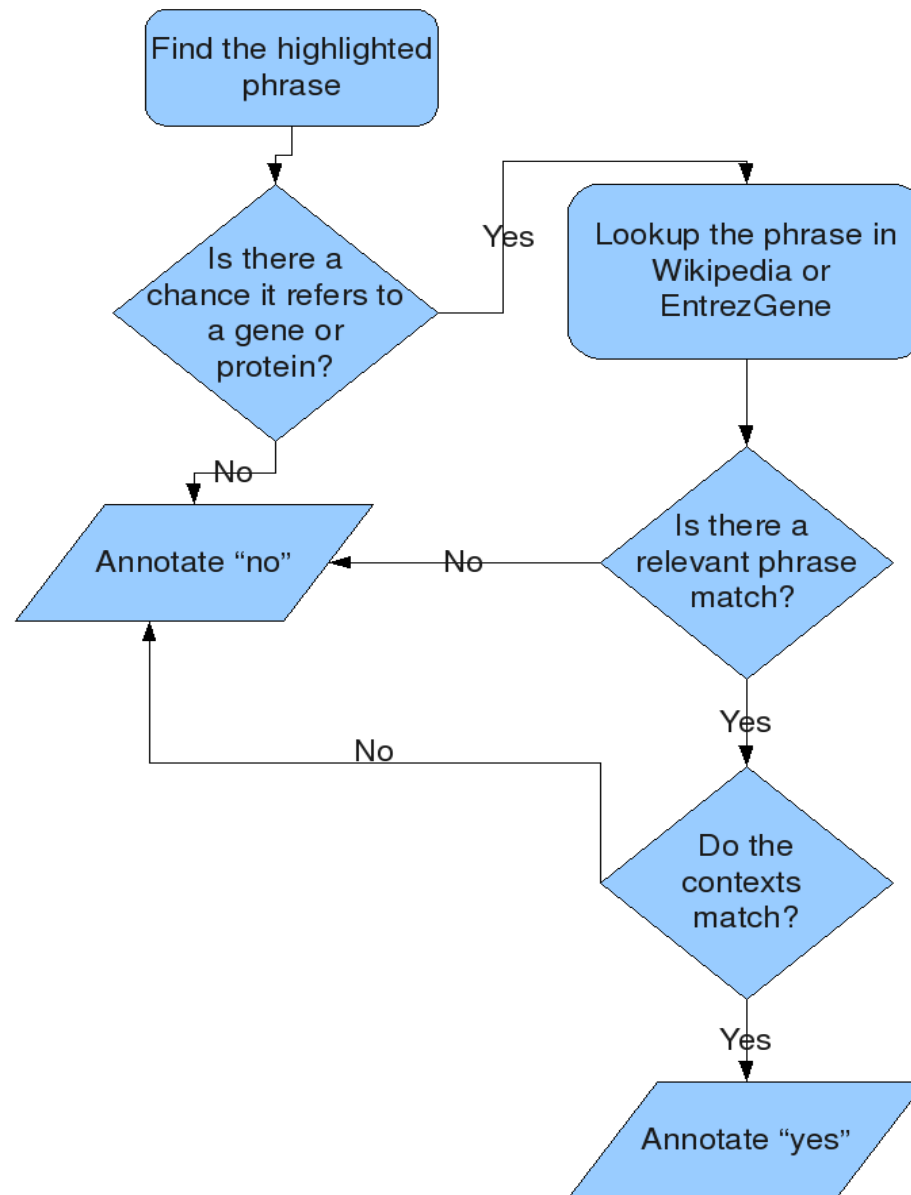


# Flowchart/Process map

---

- ▶ Mapping the Process
- ▶ Picture of process function in organization
- ▶ Identifies all work steps
  - ▶ Understand hand-offs in process
  - ▶ Show participants, inputs, outputs
  - ▶ Track resources





# Exercise 2

---

**Make a Flowchart/Process map**



# Project Management

---

- ▶ Priority area --focus
- ▶ Assemble your team
- ▶ Choose your Model: DMAIC or PDSA
- ▶ Create a timeline: step-by-step completion



# How to Start

---

- ▶ Create a SMART aim
- ▶ Define data sources
- ▶ Determine your sampling strategy
- ▶ Collect data
- ▶ Plot the data
- ▶ Interpret the data – understanding variation
- ▶ Present often and shamelessly
- ▶ Act only where you should
- ▶ Give credit to the team



# Sustainability

---

- ▶ Trainees are transients
- ▶ Efforts require attention, time, mentorship
- ▶ Phased projects → program ownership
- ▶ Resource management requires institutional support
- ▶ Integration into institutional projects
  - ▶ → success
  - ▶ → lack of interest



# QI

- ▶ Strategy
- ▶ Methods
- ▶ SMART aims
- ▶ Tools

