



**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


---

---

---

---

---

---

---

---

**Disclosures**

University of California grant, office of the President, Center for Health Quality and Innovations: Improving discharges

Director of Pediatric Quality and Safety Graduate Medical Education (GME)

I made up #2...and so can you

---

---

---

---

---

---

---

---

**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

---

---

---

---

---

---

---

---

Where are we now?



---

---

---

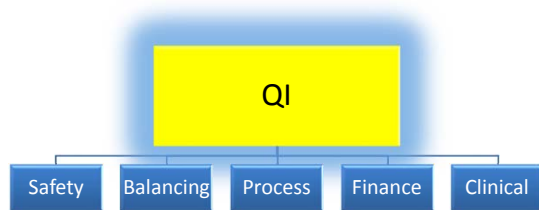
---

---

---

---

What is Quality?



---

---

---

---

---

---

---

What about the learners project?



VIDEO

---

---

---

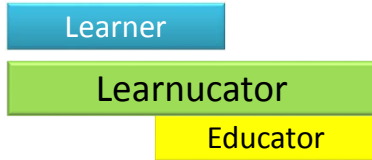
---

---

---

---

## The Learnucator




---

---

---

---

---

---

---

---




---

---

---

---

---

---

---

---

## What is our QI strategy?

1. Ideas - prioritization
2. Core concepts- culture
3. Global aim
4. Models for improvement - PDSA and DMAIC methods – SMART aim, use of QI tools, metric choices
5. Team
6. Project management – DO, STUDY, ACT
7. Sustainability

---

---

---

---

---

---

---

---

## 1. Ideas - Potential Projects are Everywhere

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>• Periop CV Risk Stratification</li> <li>• Periop antibiotics</li> <li>• Patient Flow through hospital</li> <li>• Reconciling med lists</li> <li>• Diabetes control</li> <li>• VAP</li> <li>• Hand Washing</li> <li>• Wrong Site Surgery Prevention</li> <li>• Bar Coding</li> <li>• Handoffs</li> <li>• Reducing lab/procedure waste</li> <li>• HACs</li> </ul> | <ul style="list-style-type: none"> <li>• Patient Satisfaction</li> <li>• Enhance hospital reimbursement through better documentation</li> <li>• VP shunt outcomes</li> <li>• Early enteral nutrition</li> <li>• Sono for CVC insertion</li> <li>• Analgesics in Acute Abdomen</li> <li>• Hospice/palliative care issues</li> <li>• Nat'l Patient Safety Goals</li> <li>• Pressure support in respiratory disease – risk assessment</li> </ul> |
|---|---|

---

---

---

---

---

---

---

---

## How do we prioritize?

If there is...	Consider also...
High volume, risk, cost	
Potential to reduce variation	
Interest and involvement	
External competitive drivers	
Feasibility of potential solution	

---

---

---

---

---

---

---

---

## How do we prioritize?

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

---

---

---

---

---


---

---

---

2. Core Concepts

Vague, Strategic, Conceptual



**CURE DISEASE**

**HELP PATIENTS**

---

---

---

---

---

---

---

---

3. Global aim

Vague, Strategic, Conceptual

**GLOBAL AIM**

**CURE DISEASE**

---

---

---

---

---

---

---

---

*Change Concepts to Change Ideas*

Vague, Strategic, Conceptual

**GLOBAL AIM**

↓

Specific Ideas,  
Actionable results

**SMART AIM**

Improve decision support for providers

↓

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

---

---

---

---


---

---


---


---

### 4. Model for Improvement



- What are we trying to change? Why?





---

---

---

---


---

---


---

---


### Model for Improvement



- What are we trying to change? Why?



- How will we know a change = improvement?



---

---

---

---


---

---


---

---


### Model for Improvement



- What are we trying to change? Why?



- How will we know a change = improvement?



- What changes will give us the improvement we want?

---

---

---

---

---

---

---

---

## QI Method #1: Lean



"I've identified our productivity problem. We installed faster computers, but we forgot to install faster computer operators."

---

---

---

---

---

---

---

---

## 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 steps** that the patient would not find valuable ("waste")

---

---

---

---

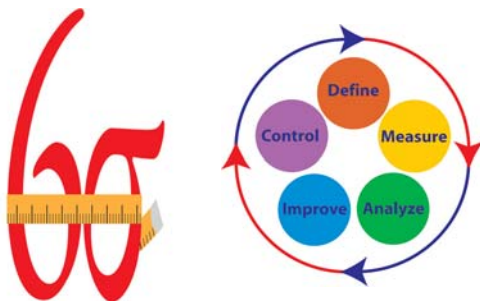
---

---

---

---

## QI Method #1: "Six Sigma"




---

---

---

---

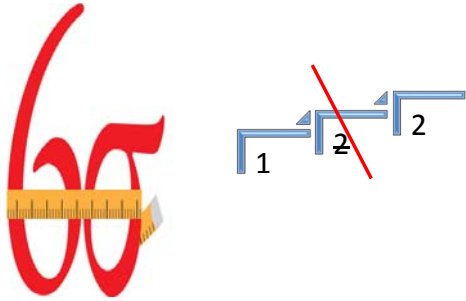
---

---

---

---

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




---

---

---

---

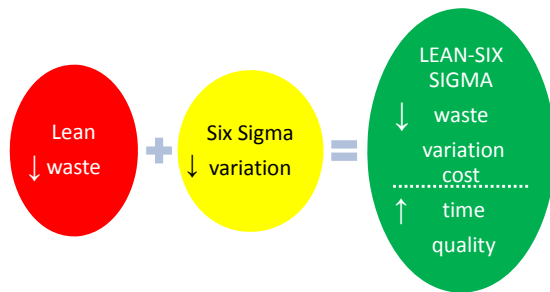
---

---

---

---

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



Waste: anything that does not add value  
Eliminated waste: by definition adds time

---

---

---

---

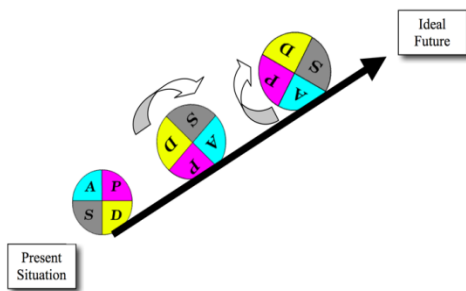
---

---

---

---

### QI Method #2: PDSA




---

---

---

---

---

---

---

---



### Let's go back: 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: The SMART aim




---

---

---

---

---

---

---

---

### Exercise: The SMART aim What is wrong, could improve? Anchoring concepts

1. Global aim: general enough? Impact? Infinite game?
2. Whys: Terms used? Impact on patients?
3. Hows: Achievability? Scoping?
4. SMART aim: is it?

A and B: Scope? Culture? Timeline?

---

---

---

---

---

---

---

---

### Exercise: The SMART aim

1. Global aim: general enough? Impact?	Finite/Infinite game; focus on the patient; vision for change
2 Whys: Terms used? Impact on patients?	Safety culture; Finite/infinite game; attitudes; burning platform; sense of urgency
3.Hows: Achievability? Scoping?	Data acquisition; stakeholders; resources; feasibility;
4.SMART aim: is it?	Short term wins
A and B: Scope? Culture? Timeline?	Finite/infinite game; stakeholders; resources

---

---

---

---

---

---

---

---

### What other tools should learners use?

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

- Picture of function in organization
- Identifies work steps
  - Identify hand-offs in process
  - Show participants, inputs, outputs
  - Track resources

---

---

---

---

---

---

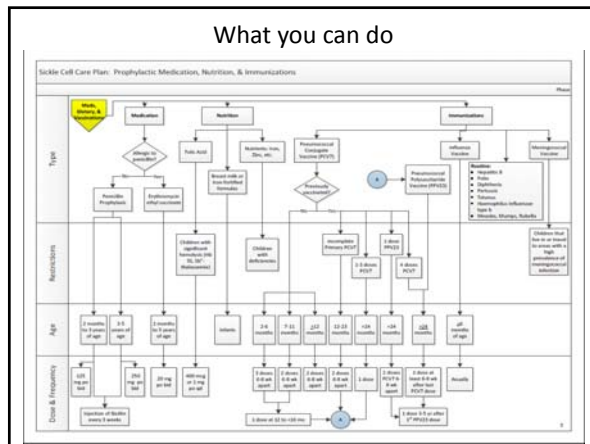
---

---

---

---

### What you can do




---

---

---

---

---

---

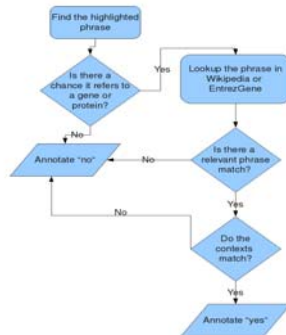
---

---

---

---

### What they can do




---

---

---

---

---

---

---

---

### 5. Team development: Two Goals

Assess and Create Interventions

*and*

Implement and Sustain

---

---

---

---

---

---

---

---

### The Team




---

---

---

---

---

---

---

---

## 6. Project Management

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

---

---

---

---

---

---

---

## 7. 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

---

---

---

---

---

---

---

## How to Start

In your binder:

- Learner checklist
- Needs Assessment for faculty – expertise and tools
- QI Tools cheat sheet
- Example Process map with prompts

---

---

---

---

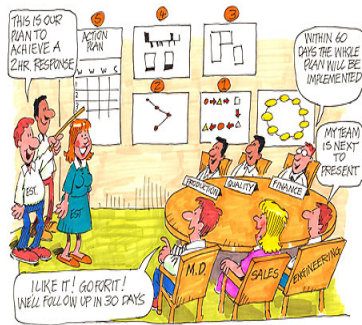
---

---

---

## What you learned

- Core concepts
- Priorities
- SMART aim
- Tools
- Team
- Model
- Management
- Sustain gains




---

---

---

---

---

---

---

---

	Definition	Patient	Curriculum	Quality	Career
<b>Goals</b>	Broad, brief statements that communicate a vision	Improve the health of your patient	Educate residents in Quality Improvement and Patient Safety	Improve transitions of care between hospital and home	Maximize career satisfaction
<b>SMART Objectives</b>	Specific Measurable Achievable Relevant Time-based	The patient will lose 15 pounds by June 1st 2012	80% of all second year categorical internal medicine residents will perform a root cause analysis by November 1st, 2012	Decrease the rate of missed initial post-hospital appointments from 50% to 40% by August 1st, 2012	A fellow hospitalist will make the hospitalist schedule instead of you by July 1st, 2012
<b>Example of Strategy (among many possibilities)</b>	Patient care, teaching, QI, and career improving interventions	Use Weight Watchers online tracking program	Combination of simulation based exercise (create RCA), followed by 1 week rotation on risk management team (do RCA)	PDSA cycles of post hospital follow-up phone calls	Weekly mentor meeting with hospitalist
<b>Measurement</b>	Results over time (how you will know if change is an improvement)	Check weight over time	Review completed RCA	Missed visit rate over time	Number of new curriculum created in time previously used for schedule

---

---

---

---

---

---

---

---