Using Lean and A3 Thinking to Manage Improvement Projects

Presenters:
Melanie Ridley, HANC QI Consultant
Gabe Deckert, HANC Project Director

hanc
THE HEALTH ALLIANCE OF NORTHERN CALIFORNIA

NORTH COAST CLINICS NETWORK

PARTNERSHIP HEALTHPLAN of CALIFORNIA

Learning Objectives

Purpose: Introduce concepts of Lean thinking to support management of improvement projects.

Participants will be able to

- Discuss the importance of documenting project learnings, process, and outcomes all in one place
- Apply an A3 problem-solving approach to address root causes
- Practice A3 problem-solving strategies

What is Lean Thinking?

- Lean appears to be a technical system - use the tools, change the process, gain efficiencies.
- **Lean is actually a way of thinking and behaving** - a new focus leading to new behaviors and therefore new culture.

Simple definition - deep meaning

2 Principles	2 Habits
Continuous Improvement of Customer Value **Respect for People**	**Improvement** **Coaching**

Adapted content from Mike De Luca, Torre Consulting

Lean Terms

Term	Definition
Customer	The patient
Value	Service, product or solution that the patient wants or needs
Value-added	Any activity that results in change in the form, fit or function for the patient
Waste	Activities that are not valuable to the patient
A3	Named for the paper size (11”x17”) that was originally used for this one-page summary or storyboard of the improvement work

Lean Thinking: What is Waste?

Categories:

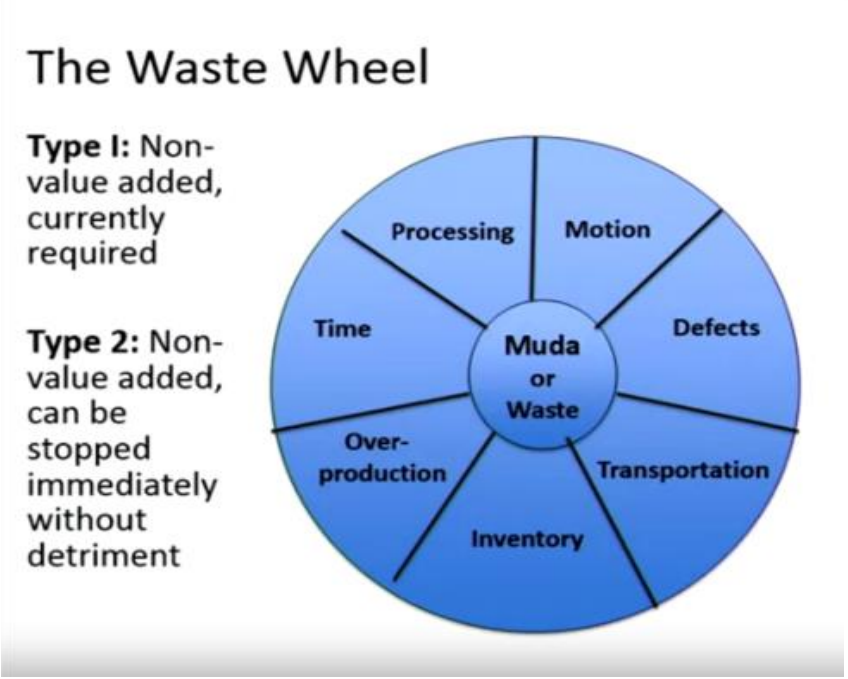
- **Process waste** "any activity that consumes resources without producing value for the customer" = Muda
- **Overburden** = Muri
- **Unevenness** = Mura

Adapted content from Mike De Luca, Torre Consulting

Process Wastes, Muda

Defects: Rework, re-dos, corrections	Transportation: Needless movement of materials and information
Overproduction: Making more than the customer needs	Inventory: Idle/in-process materials, supplies or information; batches
Waiting: Delays and queues of all types	Motion: Excess movement; searching for people, supplies, information, etc.
Neglect: Skills, capacity or capabilities of people, equipment and systems	Extra-processing: Unnecessary steps, excess checking and inspection

"Go See, Ask Why, Show Respect"
"Hard on the Process, Easy on the People"

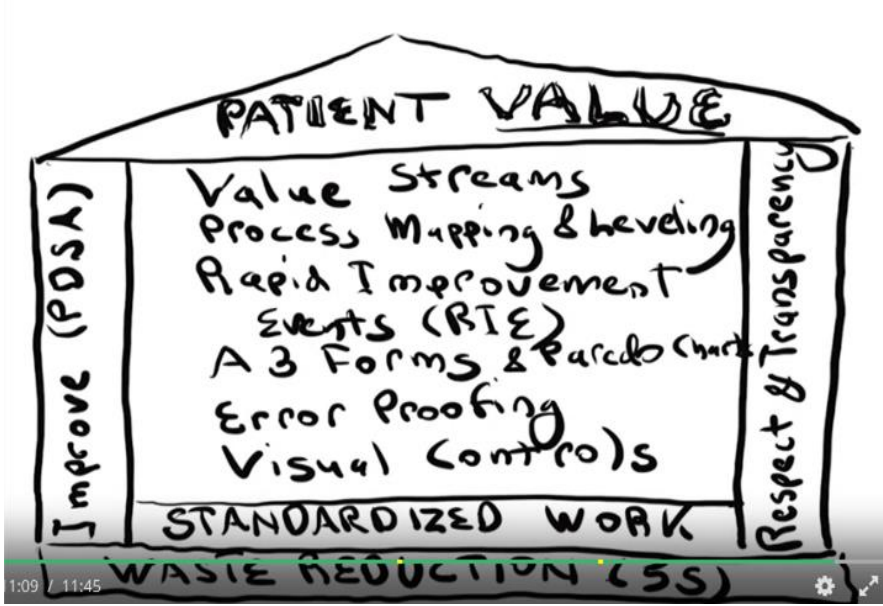


Source: https://www.coursera.org/learn/fixing-healthcare-delivery-advanced-lean

Defects
Overproduction
Waiting
Not utilized talent
Transportation
Inventory excess
Motion waste
Excess processing

Lean Production System Key Elements

- **Standardized work** (protocols, playbooks) incorporated into smooth flowing Value Streams (flow)
- **Customer-Supplier relationships** (tight connections, no fumbles) with specific time and performance expectations.
- **Scientific method to continually improve** using the creativity of all personnel.
- **Continual waste reduction** (5S, Process Observation)



Source: https://www.coursera.org/learn/fixing-healthcare-delivery-advanced-lean

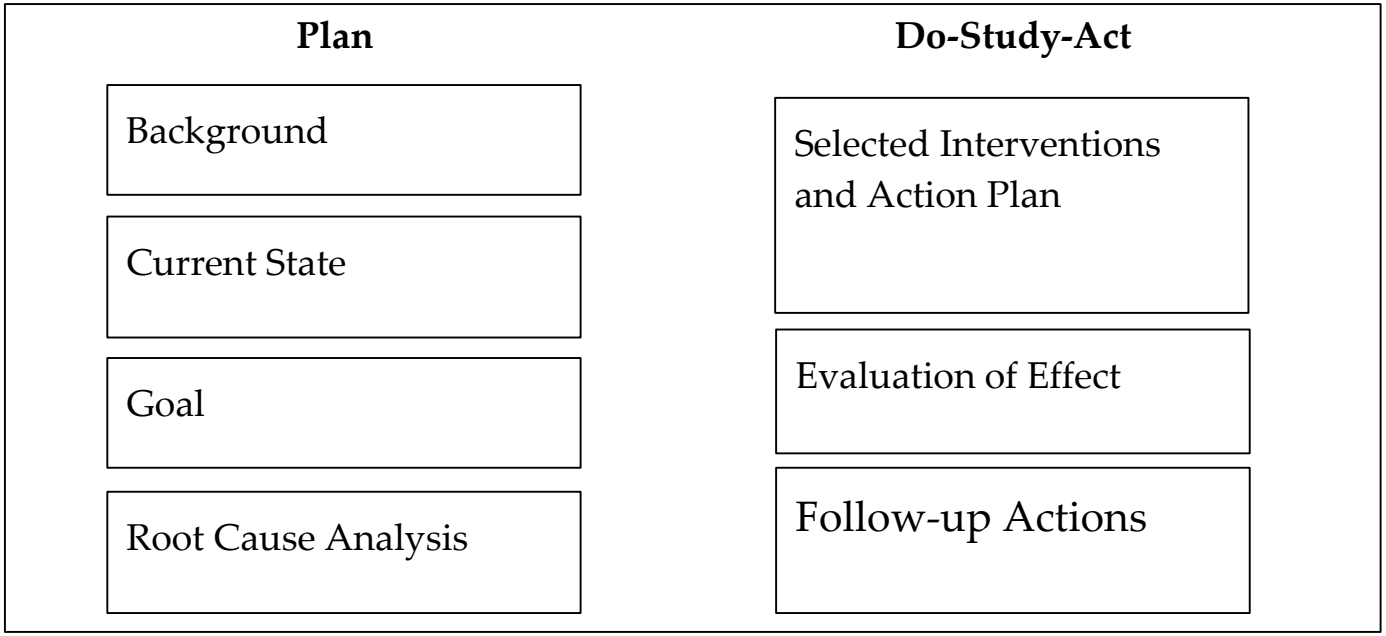
Introduction to A3 Thinking

- Building a learning system within your health center
- A3 is the framework for all parts of the improvement process
- Coaching is an important part of A3 development
- Iterative process that captures learning

"A good A3 is a reflection of the dialogue that created it."

~John Shook, Managing to Learn

A3 and PDSA Together for Learning and Improvement



Source: https://www.coursera.org/lecture/patient-safety-project-planning/building-your-a3-4NFqQ

Trauma to ICU Rapid Improvement

Date Updated: 10/21/2014

Project Lead: Marilyn Cohen
PE Facilitator: Keith Cox
Project Champion(s): Barbara Anderson, Dr. Cryer, Chris D'Amore, Dr. Martin, Mark Mayes, Jennifer Osborne, Joann Rigali, Dr. Vespa

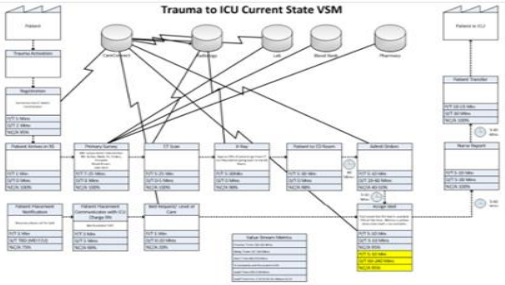
Project Team: Erik Coll, DJ De Vase, Elizabeth Overbeck, Nicole Roberts, Kayla Vandergrift, Graham Donald MD

UCLA Health

1) Problem Statement:

Critical trauma patients spend an average of 5 hours in the ED before going to the ICU. This causes unsafe patient conditions, potentially negative outcomes, staffing and patient flow issues in the ED, and a decrease in patient and staff satisfaction.

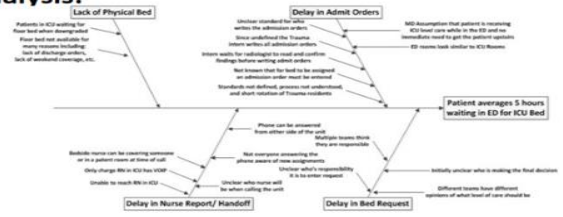
2) Current State:



3) Goal:

To reduce the amount of time the critical trauma patient spends in the ED waiting for an ICU bed. Goal is 1.5 hours from patient entering the RS to patient arriving in ICU when a bed is available by 9/26/2014.

4) Root Cause Analysis:



5) Solutions:

Root Cause	Tested Solution	Responsible	Due
Trauma residents waiting to write admit orders.	Communicate through Dr. Cryer that orders need to be written before leaving CT.	Marilyn Cohen, Dr. Cryer	5/16/2014
Delay in nurse report due to nurse availability	ED Charge and ICU Charge to communicate basic report while patient is in CT. ED Primary nurse to transport patient and give bedside report to ICU nurse.	Liz Overbeck, Nichole Roberts, Kayla Vandegrift, Erik Coll	5/16/2014
Delays in submitting bed request and confusion as to who submits it.	Trauma resident to submit admit orders from CT scanner and ED MD to submit bed request.	Marilyn Cohen, Dr. McCullough, Dr. Cryer	5/16/2014

6) Check:

1. **Weekly trauma to ICU data sent every Friday**
2. **Cases with patient in ED > 2 hrs to be reviewed and root cause documented**

Goal & Metrics	Baseline	Target	Current
Median Arrival in the ED to Depart ED	4.38 Hrs	1.5 Hrs	1.75
Mean Arrival in the ED to Depart ED	4.94 Hrs	1.5 Hrs	2.21

7) Act:

Marilyn to continue sending weekly Trauma to ICU data to team.

Issues to be brought up with team and monthly Trauma Committee as needed.

Source:https://www.uclahealth.org/nursing/workfiles/QualityOutcomesCouncil/Quality%20Improvement%20and%20Lean%20Overview.pdf

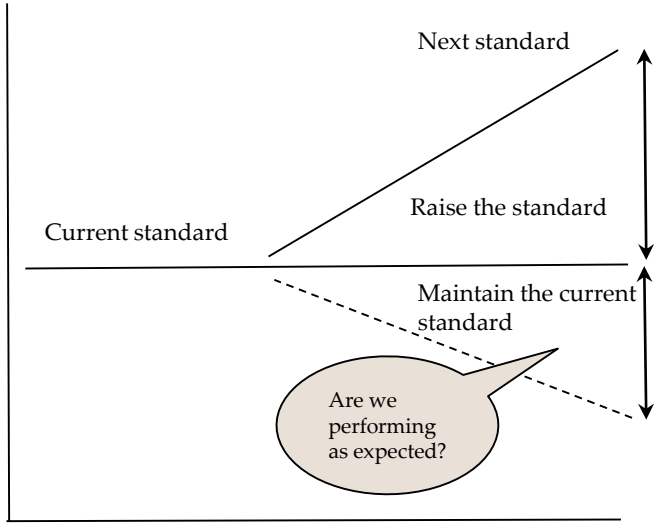
What problem are we trying to solve?

Defining "problem"

Any performance other than the desired performance at any given time.

When defining the problem, seek to answer the questions of:

- What do you actually know about the problem?
- How do you know it?
- How big of a problem or how important is it?



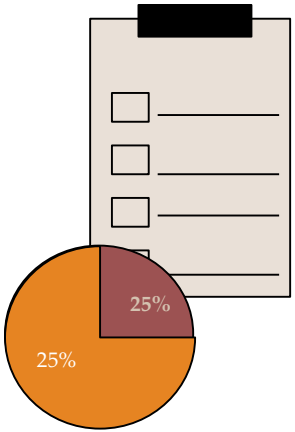
"A problem well stated is a problem half solved"
~ Charles Kettering

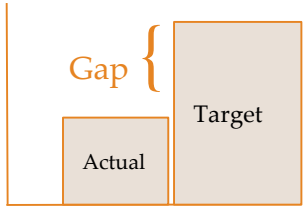
Current state: How do things look now?

Gather input

So, first step is to understand the current state

- Look at the data: What do you know? How do you know it?
- How far is performance from the target? What is the gap?
- Go to where the process happens and observe (Process Map)
- Talk to patients and staff to get their input (Driver Diagram):
  - "What gets in the way of this working well for the patient? For you?"
  - "Why does it happen that way"
  - "How do you know when to…?"
  - "What else do you think I should know about this process?"

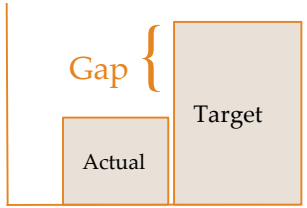




Future state: Where are we trying to go?

Setting your goal

- Understanding value to the customer (patient)
- How to set goal targets: QIP, HEDIS, UDS, strategic plan
- Visualizing the “gap” with your data



Identify The Root Cause(s) of a Problem

Investigating the question: "What causes are preventing us from meeting our target?"

Be sure to start with a problem instead of a solution. It is tempting to assume we know what will fix the problem before it is thoroughly examined.

Root Cause Analysis

- An in-depth process for identifying the most basic factor(s) underlying a variation in performance ("the problem")
- Focus is on systems and process
- Focus is not on individuals

Coaching Tip

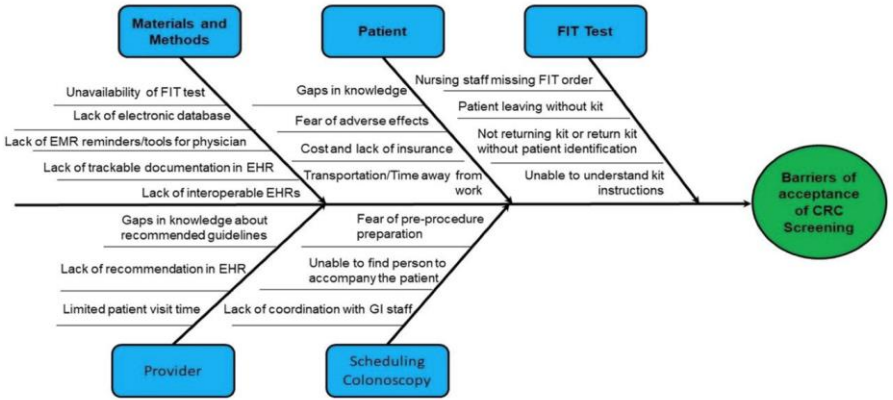
Hard on the process; easy on the people

Root Cause Analysis is not about finding who to assign blame. It is about making the invisible, visible and understanding how a system or process leads to the outcomes observed

Root Cause Analysis: Brainstorming

Root Cause Analysis: Fishbone Diagram

Fishbone diaphragm: root cause analysis identifying barriers to acceptance of CRC screening.



Smita Bakhai et al. BMJ Open Qual 2018;7:e000400

BMJ Open Quality

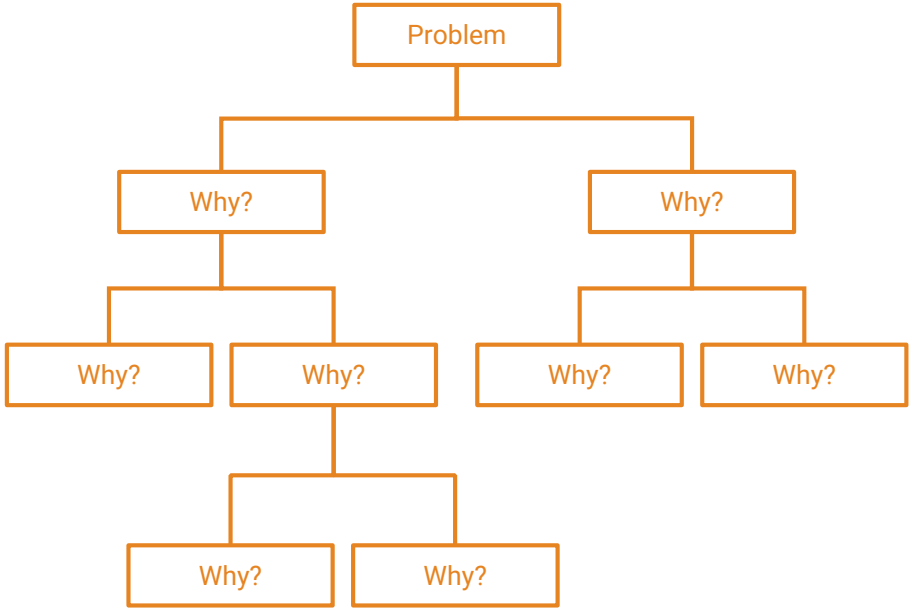
Source: https://bmjopenquality.bmj.com/content/7/4/e000400

5 Whys

An interactive question-asking technique, used to explore the cause and effect relationships underlying a particular problem

How to Complete the 5 Whys:

1. Identify the problem (write on the whiteboard or piece of paper)
2. Ask “why?” the problem happens and write down the answer
3. Ask “why?” again and write down the answer
4. As “why?” as many times as needed (might be more than 5) until the team is able to identify the root cause(s)



Participant Question:

- **Have you used Root Cause Analysis to better understand the problem you are working to improve?**

- If you have used Root Cause Analysis (e.g., brainstorm, fishbone diagram, 5 Whys) as part of an improvement project, **type into the chat** what problem you were trying to solve and what strategy you used

Activity!

We are going to role play a 5 Whys exercise. We will need 5 volunteers.

Instructions for our volunteers:

1. You will receive a script in the chat.
2. Team Member 1 begins, reading the first passage of the script.
3. Team Members will take turns responding as part of the activity according to the script.
4. Ready? Let's go!

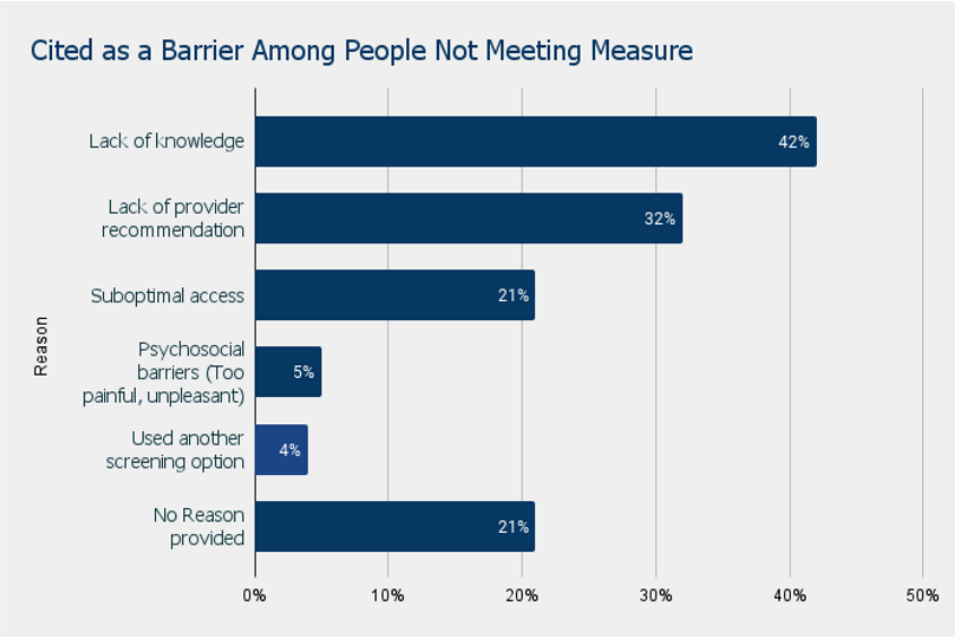
Background on our Problem

A health center has a colorectal cancer screening rate that is consistently below the desired target of 46%.

A survey of patients revealed a number of potential barriers.

RCA is going to help better understand one particular barrier:

“Lack of knowledge (Didn’t know I needed it; Never heard of it; Thought I was too young)”



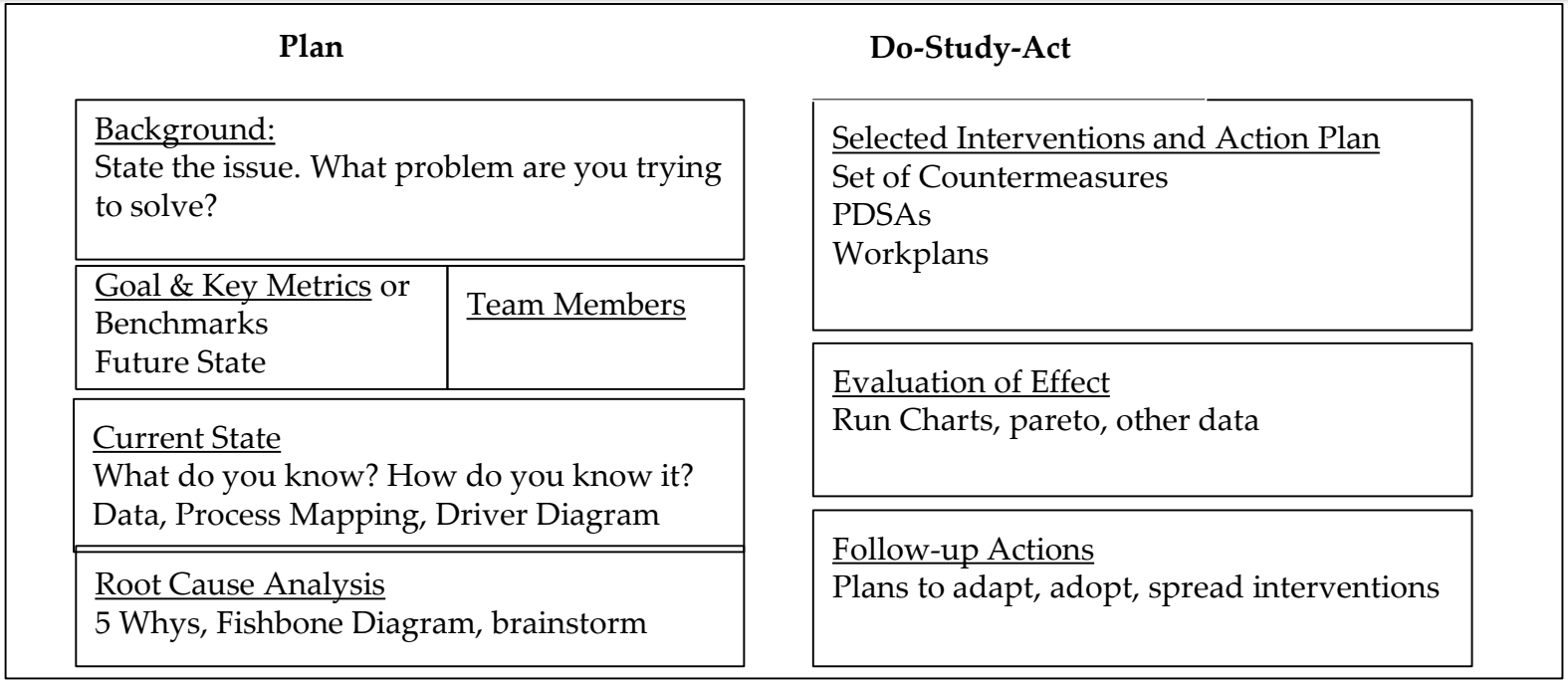
Source: https://www.sciencedirect.com/science/article/pii/S2211335521001984

“5 Whys” Activity

Problem Statement
When we asked unscreened patients why they did not get their colorectal cancer screening, 42% of patients cited a lack of knowledge as the main barrier. Our health center provides patient education materials on this preventive screening. So **why** are so many patients unaware they need it?

Why?	TM2: In a brief observation of two providers in clinic we saw that only one-half of patients were provided the health education materials
Why?	TM3: When we asked the Medical Assistants why many patients are not receiving materials they said that patients refuse the materials offered
Why?	TM4: Patients have shared that the health education materials are not in their language
Why?	TM5: Health education materials in Spanish and Chinese are only refilled once per month but often run out by mid-month
Why?	TM2: Our health education department only schedules a print of materials every other month based on historical use data from 3 years ago
Root Cause:	Not enough health education materials are printed in Spanish and Chinese to meet current patient need

A3 and PDSA Together for Learning and Improvement



Source: https://www.coursera.org/lecture/patient-safety-project-planning/building-your-a3-4NFqQ

Trauma to ICU Rapid Improvement

Date Updated: 10/21/2014

Project Lead: Marilyn Cohen
PE Facilitator: Keith Cox
Project Champion(s): Barbara Anderson, Dr. Cryer, Chris D'Amore, Dr. Martin, Mark Mayes, Jennifer Osborne, Joann Rigali, Dr. Vespa

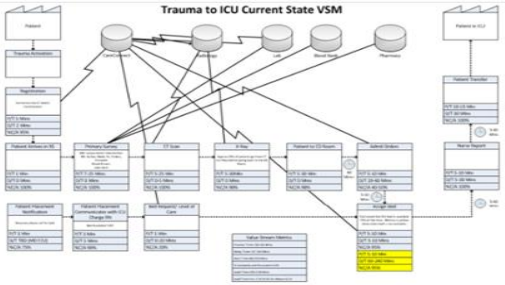
Project Team: Erik Coll, DJ De Vase, Elizabeth Overbeck, Nicole Roberts, Kayla Vandergrift, Graham Donald MD

UCLA Health

1) Problem Statement:

Critical trauma patients spend an average of 5 hours in the ED before going to the ICU. This causes unsafe patient conditions, potentially negative outcomes, staffing and patient flow issues in the ED, and a decrease in patient and staff satisfaction.

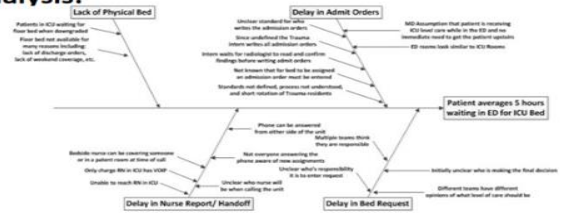
2) Current State:



3) Goal:

To reduce the amount of time the critical trauma patient spends in the ED waiting for an ICU bed. Goal is 1.5 hours from patient entering the RS to patient arriving in ICU when a bed is available by 9/26/2014.

4) Root Cause Analysis:



5) Solutions:

Root Cause	Tested Solution	Responsible	Due
Trauma residents waiting to write admit orders.	Communicate through Dr. Cryer that orders need to be written before leaving CT.	Marilyn Cohen, Dr. Cryer	5/16/2014
Delay in nurse report due to nurse availability	ED Charge and ICU Charge to communicate basic report while patient is in CT. ED Primary nurse to transport patient and give bedside report to ICU nurse.	Liz Overbeck, Nichole Roberts, Kayla Vandegrift, Erik Coll	5/16/2014
Delays in submitting bed request and confusion as to who submits it.	Trauma resident to submit admit orders from CT scanner and ED MD to submit bed request.	Marilyn Cohen, Dr. McCullough, Dr. Cryer	5/16/2014

6) Check:

1. **Weekly trauma to ICU data sent every Friday**
2. **Cases with patient in ED > 2 hrs to be reviewed and root cause documented**

Goal & Metrics	Baseline	Target	Current
Median Arrival in the ED to Depart ED	4.38 Hrs	1.5 Hrs	1.75
Mean Arrival in the ED to Depart ED	4.94 Hrs	1.5 Hrs	2.21

7) Act:

Marilyn to continue sending weekly Trauma to ICU data to team.

Issues to be brought up with team and monthly Trauma Committee as needed.

Source:https://www.uclahealth.org/nursing/workfiles/QualityOutcomesCouncil/Quality%20Improvement%20and%20Lean%20Overview.pdf

Using the A3 Tool throughout the project cycle

- Key audiences for sharing your work
- Beginning
- In-Progress/Inherited
  - Subprojects/"Parent and Child A3s"
- Report-Out

Questions & Answers

Thank you!

Webinar Evaluation Link: Insert Link here and in chat

Amanda Kim, PHC Senior Project Manager
Email: **akim@partnershiphp.org**
Melanie Ridley, HANC QI Consultant
Email: **melanie@ridleyconsulting.net**
Gabe Deckert, HANC Project Director
Email: gabriel@thehanc.org

Additional Resources

- Questions and Coaching on A3 Thinking (link)
- A Quick Guide to Starting Your Quality Improvement Projects (link)
- Lean in Health Care Overview (link)
- Introduction to Lean Thinking (link)
- Lean Health Care Organization: Catalysis (link)