Using Lean and A3 Thinking to Manage Improvement Projects

Presenters:

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







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 <u>new focus</u> leading to new behaviors and therefore new culture.

Simple definition - deep meaning

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

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

Adapted content from Mike De Luca, Torre Consulting





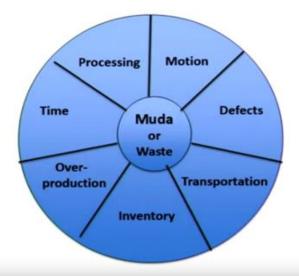


"Go See, Ask Why, Show Respect" "Hard on the Process, Easy on the People"

The Waste Wheel

Type I: Nonvalue added, currently required

Type 2: Nonvalue added, can be stopped immediately without detriment



Defects
Overproduction
Waiting
Not utilized talent
Transportation
Inventory excess
Motion waste

Excess processing

 $\textbf{Source:}\ \underline{https://www.coursera.org/learn/fixing-healthcare-delivery-advanced-lean}$

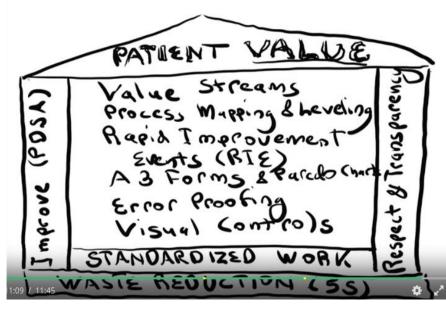






Lean Production System Key Elements

- 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



Background

Current State

Goal

Root Cause Analysis

Do-Study-Act

Selected Interventions and Action Plan

Evaluation of Effect

Follow-up Actions

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







Rapid Improvement Date Updated: 10/21/2014

Trauma to ICU

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 Lead: Marilyn Cohen

UCLA Health

Due

5/16/2014

5/16/2014

5/16/2014

2.21

Responsible

Marilyn Cohen, Dr.

Liz Overbeck, Nichole Roberts, Kayla

Vandegrift, Erik Coll

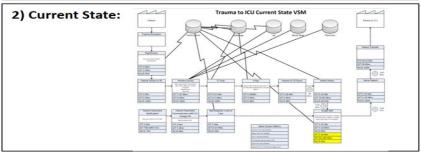
Marilyn Cohen, Dr.

McCullough, Dr.

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Crver

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.



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 patie arriving in ICU when a bed is available by 9/26/2014.

5) Solutions: **Root Cause**

Trauma residents waiting to write admit orders.	Communicate through Dr. Cryer that orders need to be written before leaving CT.
Delay in nurse report due to nurse availability	ED Charge and ICU Charge to communicate basic report while patien is in CT. ED Primary nurse to transport patient and give bedside report to ICU nurse.

Project Team: Erik Coll, DJ De Vase,

Vandergrift, Graham Donald MD

bed request.

Elizabeth Overbeck, Nicole Roberts, Kayla

Tested Solution

Trauma resident to submit admit order

from CT scanner and ED MD to submit

6) Check:

Weekly trauma to ICU data sent every Friday

2.

Delays in submitting bed request

and confusion as to who submits

Mean Arrival in the ED

to Depart ED

Cases with patient in ED > 2 hrs to be reviewed and root cause documented

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	Goal & Metrics	Baseline	Target	Curren
	Median Arrival in the ED to Depart ED	4.38 Hrs	1.5 Hrs	1.75

4.94 Hrs

Patients in ICI) waiting for facilities and facilities and facilities for the companyability of the Companyabi	Delay in Admit Orders Unches standard for who writes the admission orders tions and defend the Tourne	MO Assumption that patient is receiving KU linest one while in the SD and no increasing updates
resident and automation for the automation of the discharge orders, but if method change, etc.	interes within a distribution prifer. places within the validispility to see and contribution places within the validispility to see and contribu- places within the validispility to see and contribu- places and the valid to the see an expect of an administration prifer most be entered as administration prifer most be entered as administration of the validispility of the see and the validispility of validispility of the validispility of validispility of the validispility of the validispility of the validispility of validispility of validispility of validispility of vali	15 nominal delibra Cu Rome Patient averages 5 hours
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Buildide nurse can be covering surroune or in a select room of time of call	Not compute answering the	

Delay in Bed Request

7) Act:

needed.

Marilyn to continue sending weekly Trauma to ICU data to team. Issues to be brought up with team and monthly Trauma Committee as

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

1.5 Hrs

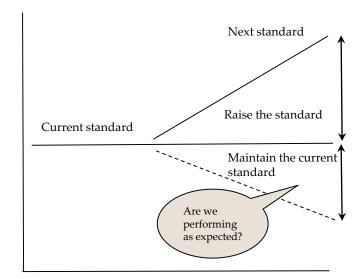
What problem are we trying to solve?

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





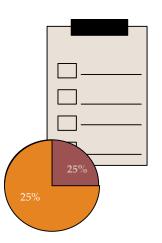


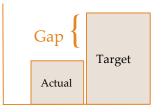
Current state: How do things look now?

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?"







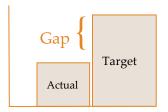




Future state: Where are we trying to go?

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

how to brainstorm: RULES

DEFER JUDGEMENT

GO FOR VOLUME

ONE CONVERSATION at a time

BE VISUAL

HEADLINE

Stay on TOPIC Encourage WILD IDEAS

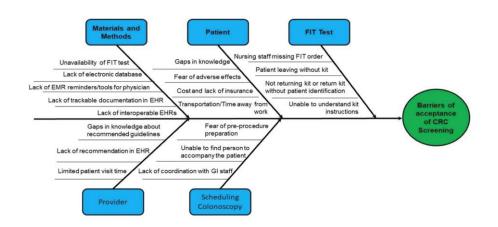






Root Cause Analysis: Fishbone Diagram

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





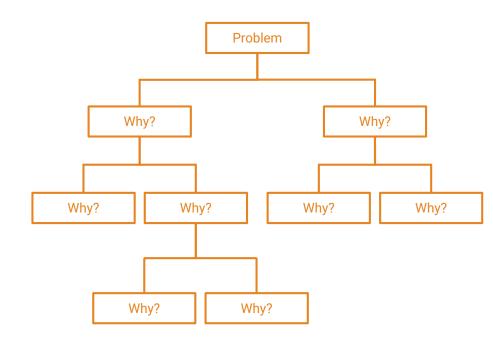


5 Whys

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!







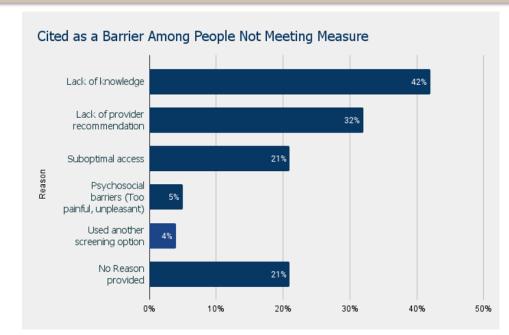
Background on our Problem

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

Plan

Background:

State the issue. What problem are you trying to solve?

Goal & Key Metrics or

Benchmarks

Future State

Team Members

Current State

What do you know? How do you know it? Data, Process Mapping, Driver Diagram

Root Cause Analysis

5 Whys, Fishbone Diagram, brainstorm

Do-Study-Act

Selected Interventions and Action Plan

Set of Countermeasures

PDSAs

Workplans

Evaluation of Effect

Run Charts, pareto, other data

Follow-up Actions

Plans to adapt, adopt, spread interventions

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







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2) Current State:

Trauma to ICU

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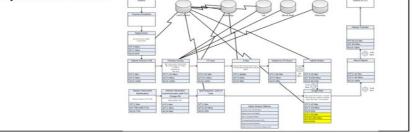
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5)	Solutions:
	Root Cause

nurse availability

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--	--

Delay in nurse report due to

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Crver ED Charge and ICU Charge to communicate basic report while patient Liz Overbeck, Nichole Roberts, Kayla

is in CT. ED Primary nurse to transport patient and give bedside report to ICU Trauma resident to submit admit order from CT scanner and ED MD to submit

6) Check:

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

Median Arrival in the ED

to Depart ED Mean Arrival in the ED

to Depart ED

Baseline

4.38 Hrs

4.94 Hrs

Target Current

1.5 Hrs

1.5 Hrs

Responsible

Marilyn Cohen, Dr.

Vandegrift, Erik Coll

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Crver

arriving in ICU when a bed is available by 9/26/2014.

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/QualityOutcomes Council/Quality%20Improvement%20and%20Lean%20Overview.pdf

) Root Cause Analysis: Clack of Physical Bed	Delay in Admit Orders United standard for like with within the admitted replies Since audithined the Dearnal inform without administed orders	MD Assumption that patient is receiving KD lined core white in the ED and so issumediate must be patient upstales ED reserve look striker to KD Reserve.
tion of distinger celebra. Not of workload execution, etc.	three wash for radialisate is raid and confirm findings before writing shocks order. But it issues that for find to be engoged as obtained and finding land as well as well as Stordards and efforting unconstant and whenfalled and when reference or transmission and when and and when reference or transmission and when and and and when reference or transmissions.	Patient averages 5 hours
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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

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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 (<u>link</u>)
- A Quick Guide to Starting Your Quality Improvement Projects (<u>link</u>)
- Lean in Health Care Overview (<u>link</u>)
- Introduction to Lean Thinking (<u>link</u>)
- Lean Health Care Organization: Catalysis (<u>link</u>)





