Transforming Care: The Value of Lean for Physicians



PCPI Webinar

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TOYOTA PRODUCTION SYSTEM



Organizational Culture

An Integrated System

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John Shook Lean Enterprise Institute

MANAGRAGUT SYST

LEADERSHIP STRADUNES

BASIC THINKING, MUDSET, ASSUMPTION'S That underlie the transformation

PROBLED NOT WE TROPING TO SOL

What problem are we trying to solve?

Lean Thinking = Scientific Problem Solving by everyone on the team

The endless transformation of waste into value from the customer 's perspective.

Womack and Jones, *Lean Thinking*

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Dave LaHote, Lean Enterprise Institute

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Dave LaHote, Lean Enterprise Institute

All teammates take initiative to find and fix root causes of most important problems daily. Leaders help. John Shook, Lean Enterprise Institute

Teaching Physicians Scientific Problem-Solving Should Be Easy!

All physicians learn one model in Med School:
 The "problem" is a patient's medical issue
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 - A population (a group of patients you follow)
 - A safety or quality problem
 - A throughput or workflow problem

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 - A population (a group of patients you follow)
 - A <u>safety</u> or <u>quality</u> problem
 - A throughput or workflow problem
- You can also help your staff learn to do this
 - Solve problems together
 - Help them remove the obstacles that get in the way of a good day at work

Lean Thinking is the Scientific Method Applied to Daily Work

Scientific Method

- Observation
- Hypothesis
- Intervention
- Results/reflection
- Revise hypothesis
- New intervention...
- Structured abstract



Lean Thinking

- Go see, ask why, respect
- Plan P
- Do D
- Check/reflect
 C
- Adjust A
- Repeat PDCA cycle...
- A3, Value Stream Map

Lean Thinking -Just like great medical care

Tackle work problems with the rigor, investigation, and systematic thinking we use for <u>patient problems</u>.

Help every worker become an <u>expert clinician</u>.





Lean Thinking is Like Great Medical Care for Daily Work

Great Medical Care

- Collect data personally, systematically, at the bedside (H&P)
- Impression and plans
- Tests and treatments
- Assess results & reflect
- Revise impression & plan
- Std write-up, presentation

Lean Thinking

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- Value Stream Map, A3

Α

"Equally Important Pillars"

THE TOYOTA WAY **CONTINUOUS** RESPECT FOR PEOPLE IMPROVEMENT

What is Lean Healthcare?

- Lean is built on three bedrock concepts:
 - 1. respect for people
 - 2. scientific method to seek perfectior
 - 3. clear purpose: to align systems, strategy, and performance to yield customer value as the result.



Source: John Toussaint, MD

Lean Respects & Supports Staff

- Ensure people have what they need to do the work
- Don't put people in a broken process
- Doesn't drive cost cutting through layoffs
- Not blaming people for systemic errors
- Don't overburden people
- Have proper staffing levels
- Listen and engaging people in improvement
- Give help and support when needed
- Allow people to do meaningful work
- Work to your level of licensure

"everybody improving, everywhere, and every day"



Masaaki Imai - Founder KAIZEN Institute

1989 NEJM Article

SOUNDING BOARD CONTINUOUS IMPROVEMENT AS AN IDEAL IN HEALTH CARE

Kaizen = "the continuous search for opportunities for all processes to get better"



Dr. Donald Berwick



See videos at www.leanblog.org/franciscanvideos

3:32 / 3:42



"The culture here is staff input into everything. They want staff figuring out how to fix things. What can we do to make our job easier? They allow us to implement things to see if it will work."

See videos at www.leanblog.org/franciscanvideos

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P-D-C-A Cycle J Shook



P-D-C-A Cycle



P-D-C-A Cycle



P-D-C-A Cycle



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- Do our work every day in a standard way <u>that we created</u>
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- Find and fix the root causes of the problem
 - So it never happens again!



Modified after Spear

Be alert to things going wrong



John Shook

Be alert to things going wrong



John Shook



How do we help workers remove obstacles to a good day at work? Lean Thinking In One Slide. Modified from Dave LaHote with permission

The Scientific Method (PDCA Cycle)



The Scientific Method (PDCA Cycle)



A Quick Summary of Scientific Problem Solving



- Go and See
- Ask Why
- Show Respect

A Quick Summary of Scientific Problem Solving

1. <u>Go and See</u>

- Like an <u>H&P</u>: observe the actual work!
- What's happening v. what should be happening?
- Draw a map or a diagram. Do we all agree?

Learning to See Waste







Value Stream Mapping: Learning to See...Together



• "Ah ha" moments:



- I never knew this is how it worked!
- I can't believe what a mess this process is!
- No wonder we're frustrated!
- It's a miracle a patient (investigator, trainee, grant, bill...) ever gets through it!

-All heard from physicians, nurses, staff, managers



Psychiatry Referral Process

Current State Map



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2. <u>Ask why</u>

- Like a <u>Differential Diagnosis</u>
- What might be causing the problem? (root cause analysis)
- Methods, Materials, Machines, Men and Women?
- What do we know? How do we know it?
- What do we need to know? How will we find out?

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3. <u>Show respect</u>

- Don't jump to solutions; don't tell people what to do!
- Trust those closest to the work; help them try their ideas.
- If it doesn't work, ask what they learned and what they want to try next.

Reducing Podiatrist Walking



Restocking Checklist

Dr. Serpe's Cart		(0)
		NON
Тор:	Gloves Large Cotton Balls Consent Forms	
First Drawer:	Iodine Swabs Cotton Tipped Applicators Misc Tape Ethyl Chloride Lidocaine 2% with Epi Lidocaine 2% Silver Nitrate Sticks Rubber Bands Triple Antibotic Ointment	
Second Drawer	Iodoform Packing Strips Plain Packing Strips 25G 11/27 needles Jud syringes ISGI 15" needles Gause Rolls Different Sizes Unna Boot	
Thrid Drawer	Different size Hole Punches Source Removal Tray Dr. Serpe's Instruments #15 Bludes 4X47	
How of B	Towels Sheets Elastic Gauze	

- Created standardized cart
- Along with standardized rooms, eliminated the need to leave the room during patient encounters

"All hands on deck"

<u>Every worker</u> applying the <u>scientific method</u> to <u>every part of daily work</u>.

Turn all daily work into an <u>experiment</u> and every worker into an <u>investigator</u>.

- Steven Spear

What Do We Know About Plans, Experiments and Failure?

- Plans are useless, planning is essential. (Eisenhower)
- No battle plan survives first contact with the enemy. (von Moltke the Elder)
- Nothing ever goes according to plan. (LaHote)
- Half the plans you make are wrong...you just don't know which half (Billi).
- A plan is an experiment you run to see what you don't understand about the work. (Spear)
- Most experiments fail...to prove the hypothesis. (LaHote)
- I never failed. I found 10,000 ways that don't work. (Edison)
- The only experiment that fails is one you don't learn from. (Billi)



Lean in Daily Work

- Intact work teams trained by their leader
- Select and monitor their value metrics
- Create standard work
- Huddle daily with visual controls
- Workers identify problems, propose countermeasures, run experiments (*not a suggestion box!*)
 - Everyday Lean Ideas (ELIs): 4 box problem solving

Key Measures (Ambulatory Care True North Measures)

Improvement Category	Potential Connecting Measure
Safety	- Hand Hygiene - Falls (infusion / procedure areas)
Quality	 Patient Satisfaction Care Quality Measure
Timeliness	 New Patient Access Clinical Encounter Time
Financial Stewardship	 Margin Charge Reconciliation
People	- Faculty & Staff Engagement

Daily Huddle: To get us all on the same page

- Cardiac Rehab Clinic
 - Daily Huddle, <10 minutes
 - What happened in past 24 hours?
 - A cardiac arrest team went to wrong room
 - A "Red Call" (emergency) handled well
 - Who owns the problem? Next step?
 - Are we ready for today's business?
- <u>Cardiac Rehab Clinic Huddle</u>



Picture of Problem:



Picture of Implemented Idea:



Description of Problem: Folding Chairs being hung the wrong way in patient rooms

- Impact of Problem: Lowers potential risk of someone getting hurt on the hook
- Reporter of Problem: Wendy Tow, Tim Mysliwski

Description of Idea: Put a picture above the chairs showing the proper way they should be hung

Impact of Idea / What Did We Learn? Photo above the chairs will help everyone to know the correct way to hang them

Date Idea Implemented:6/12/15

Problem/Solution Summary

Picture of Problem:



Picture of Solution:



Description of Problem:

Currently each team member has a box of recycling that has to be individually fed into a slot in the main recycle bin. The process is time consuming.

Impact of Problem:

The time it takes to feed the documents one at a time takes the team away from performing value added work for our customers. Leads to waste of motion and overproduction.

Description of Solution:

Payment Posting requested and received their own key to the recycling bin allowing each team member to simply dump their box into the recycle bin.

How do we know it works?

Completed the recycling in 5 seconds versus 2-4 minutes.

Date Solution Implemented: 10/13/09

Reporter of Problem: Payment Posting Team

Lean Learning / Solution Summary



Description of Problem:

Medical staff and check-in staff frustrated when patients forget to return to Ortho check-in after X-rays.

Impact of Problem:

Results in clinic delays; frustrated staff and upset patients.

Reporter of Problem:

Clinic – Front End Team

Description of Solution:

Laminated card given to patient by Radiology as reminder to check in at Ortho reception desk to complete visit. Impact of Solution / What Did We Learn? Still in pilot phase – patients returning to check in more frequently – should help reduce clinic visit delays Date Solution Implemented: April 7, 2010





Picture of Implemented Idea:



Description of Problem: <u>Release of</u> <u>Information</u> forms being given to PSA's w/o TEAM MA's being notified. Some forms not being imaged and requests lost.

Impact of Problem: Pt. information not getting sent from other facilities due to no ROI or no paper trail for ROI.

Reporter of Problem: Danielle Burton

Description of Idea: Place a basket in staff room for forms to be placed and collected by TEAM MA Impact of Idea / What Did We Learn? This will help TEAM MA's when providers ask about ROI's so that they know if the ROI was signed and what the status is.

Date Idea Implemented: 7/21/15



Picture of Implemented Idea:

Description of Problem: Patients are exiting inappropriate doors, going to signs that say exit.

Impact of Problem: Patients are leaving out of employee only exits, or others and not checking out.

Reporter of Problem: Heather Simkiss

Description of Idea: Have signs make that state it is for employees and it's not a patient exit.

Impact of Idea / What Did We Learn?

Patients will know what door to exit through.

Date Idea Implemented: 5/28/2015



Removing barriers that get in the way of people having a good day at work. (LaHote)



This illustration is inspired by and in part derived from the work by Scott Simmerman, "The Square Wheels Guy" http://www.performancemanagementcompany.com/

Results from the Michigan Quality System

Getting Lab Results to the Right Physician

- <u>From</u> 13% with no ordering physician
- <u>To</u> < 2%

Door to Balloon Time for Heart Attack

- From 75% within 90 minutes
- <u>To</u> 91%





Speed to Begin Radiation for Patients Referred for Brain Metastases

- From 3 visits over 5 days (consult, simulation, treatment)
- <u>To</u> 95% of patients start treatment within 24h, most on same day

Scheduling to Sports Medicine Clinic

- <u>From</u> 23 days (27 minutes of work)
- To 2¹/₂ minutes first phonecall for 90% of patients

PICC (Long-Dwelling IV Line) Placement for Inpatients

- From 35% placed in 12 hours
- <u>To</u> 71% in 12 hours; *46% fewer needed Interventional Radiology*

PICC Line Supply Cart 5S



Drawer: Pre-5S





Drawer: Post- 5S Saved each nurse an hour a day!



Engaged team: front line workers and managers



Rapid Antibiotics in Febrile Pediatric **Oncology Patients in the ED**

- Developed a clinical practice guideline (standard work) for high risk patients independent of blood counts
- Involved physicians, nurses, pharmacists, <u>families</u>
- Antibiotic ordered <u>before</u> the patient arrives at the ED
- Anesthetic applied to skin over infusion port <u>at home</u>
- Family has supply kit for accessing port at local ED Patients no longer pass another ED to start treatment
- Time between ED triage and treatment start was reduced from 207 to 100 minutes, still dropping
- Consensus on standard work v. individual memory and judgment

Tacrolimus dosing in kidney transplant

- –Developed protocol for tacrolimus target levels
- -Built on <u>consensus</u> among nephrologists on dosing and use of <u>single</u> preferred generic
- -<u>Dosing algorithm</u> (job aid) used each time

-<u>Standardized medication teaching</u> at discharge and postop visits

-Provided discharge meds

-<u>Standardized</u> the frequency and process of <u>lab</u> follow-up

Multiple countermeasures, rapid cycle experiments, pushing the "frontier of knowledge"

Q&A – Transforming Care: The Value of Lean for Physicians



AMA Webinar

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Tools alone are not enough...

What is your *management system* for:

- Identifying problems (or goals)
- Prioritizing
- Clarifying who is responsible
- Approving their plan
- Aligning the organization around the plans
- Deploying the plan
- Checking progress to the plan
- Adjusting the plan based on the check
- Calling for help ASAP when off the plan (andon) 68

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Overburden (*Muri*) The cork helmet problem...



Multiple top priorities...

"The camel can always carry another straw..."

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Web:

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- UMHS MQS Virtual Lean Resource Center (internal UMHS only): med.umich.edu/i/quality/tools/lean_assist.html
- Lean Enterprise Institute: www.lean.org webinars, books, meetings...
- Lean Transformation Model video (John Shook, "House video") www.lean.org/common/display/?o=2763
- Lean Healthcare Value Leaders Network: createvalue.org/networks/healthcare-value-network
- AMA StepsForward module: Intro to lean in office practice: www.stepsforward.org/modules/lean-health-care
- IHI. Going Lean in Health Care www.ihi.org/IHI/Results/WhitePapers/GoingLeaninHealthCare
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