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# Lean at the Department of Public Health

Presentation to the San Francisco Health Commission

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City and County of San Francisco  
**DEPARTMENT OF PUBLIC HEALTH**

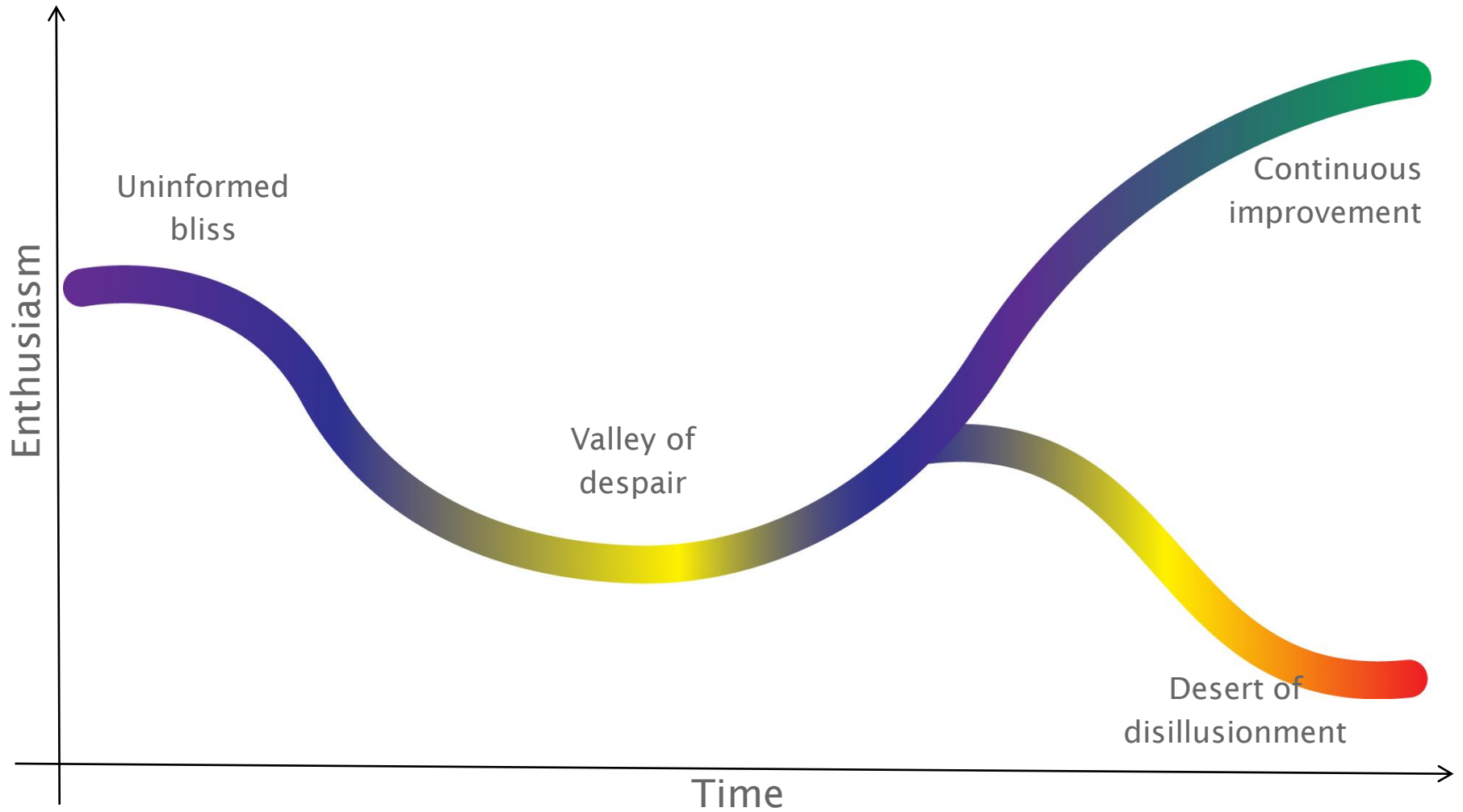
# What we'll cover

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- Background
- Taking a systems approach
- Introduction to Lean
- Lean in practice
- A3 Thinking – PDSA cycles

Background

# Change curve



# Executive leaders commit to an approach

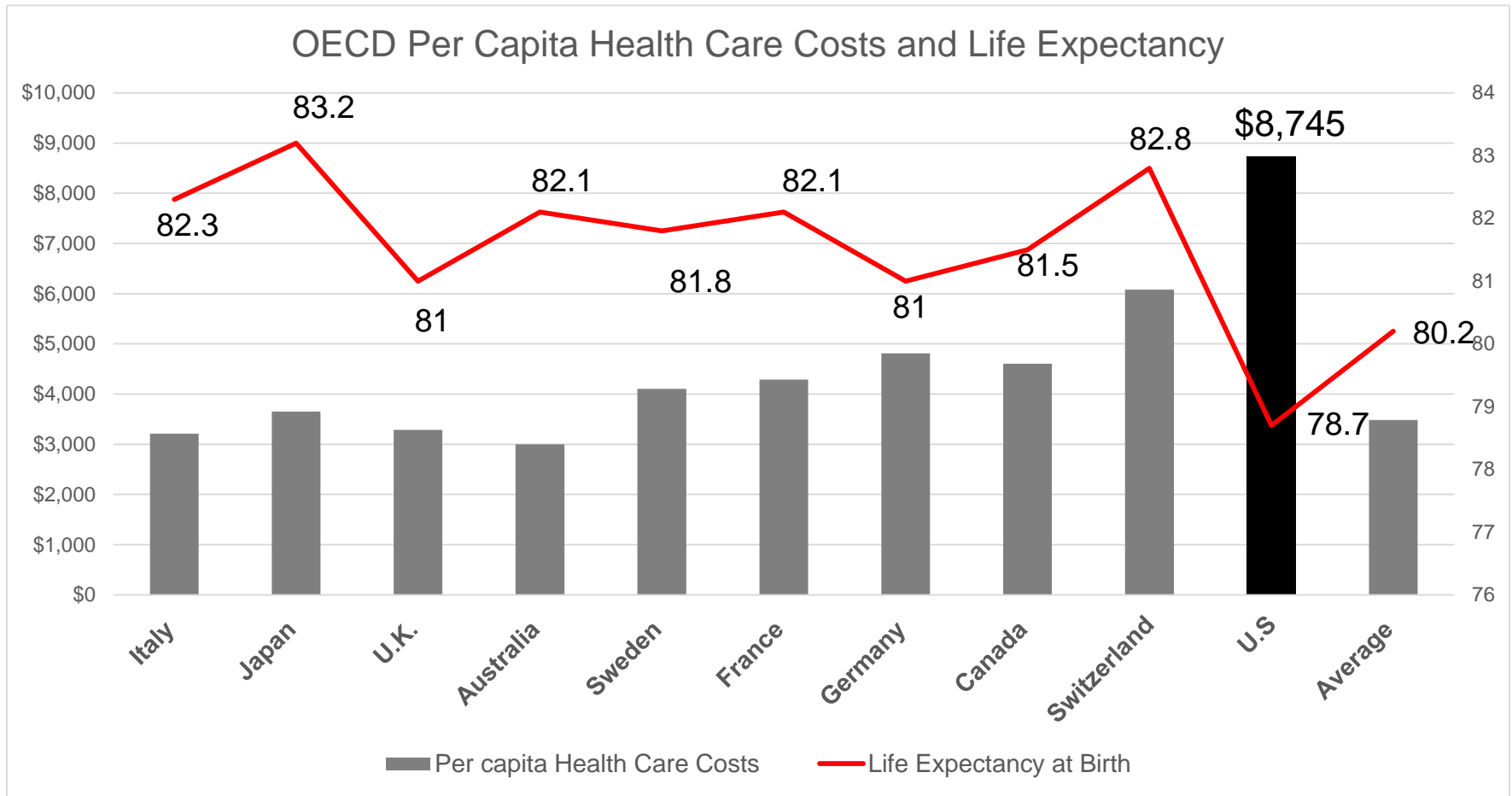


If it were easy it would already be done

# A compelling case for change



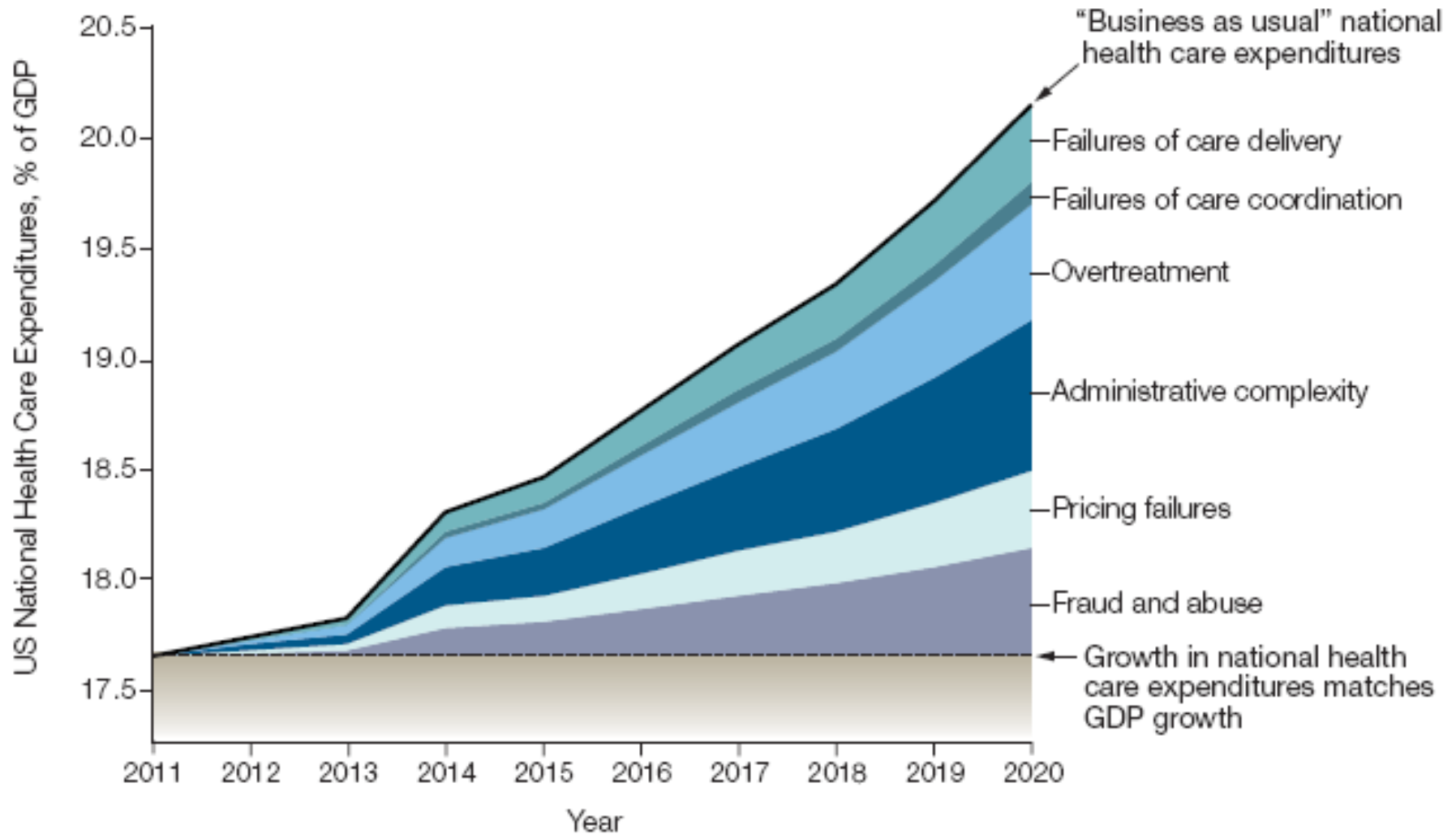
# Affordable?



Source: "OECD Health Data 2014," Organization for Economic Co-operation and Development



# Waste in healthcare

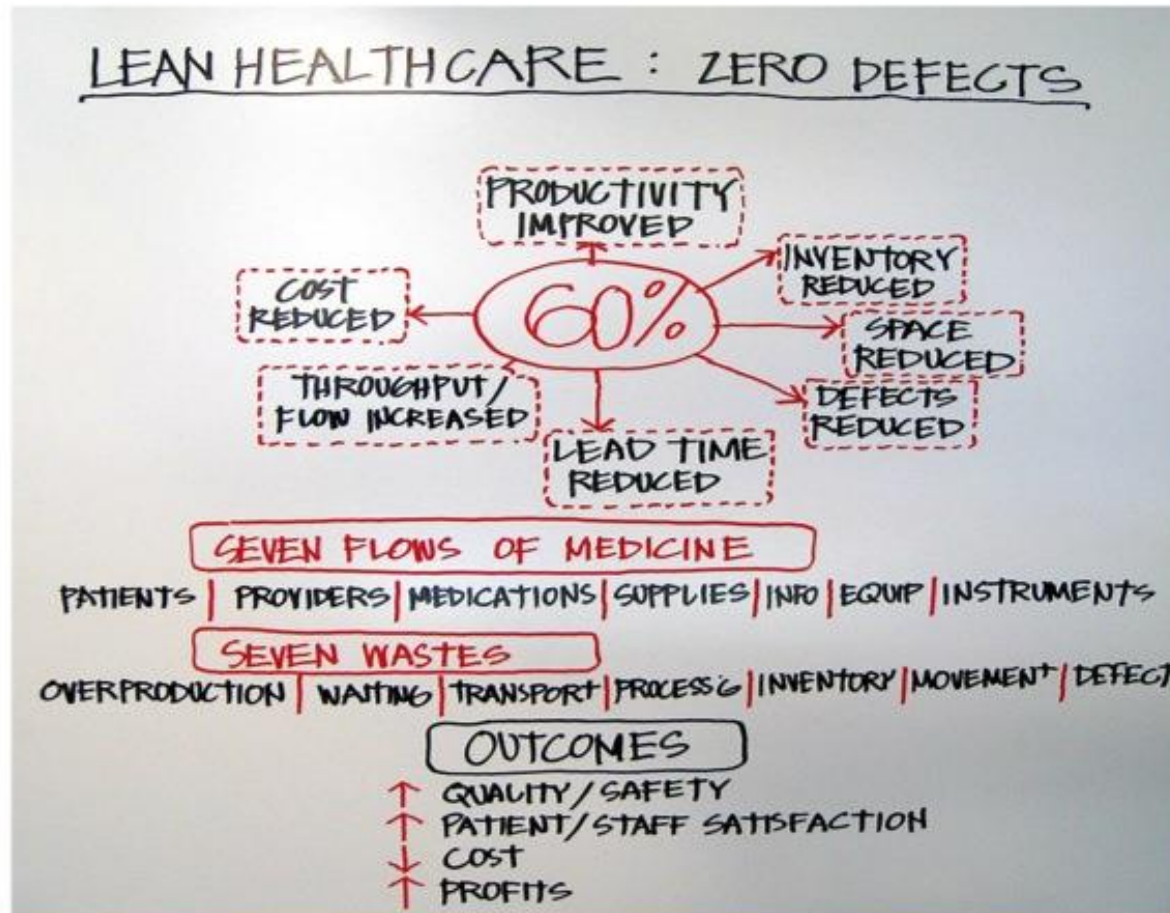


"Eliminating Waste in US Healthcare" by Dr. Don Berwick and Andrew Hackbarth JAMA, April 11, 2012





# The essence of lean in healthcare



Lean management system

# Taiichi Ohno



*“You should submit  
wisdom to the company.  
If you don’t have any  
wisdom to contribute,  
submit sweat.  
If nothing else, work hard  
and don’t sleep.  
Or resign.”*

# Recent results – clinical value streams

		ER	OR	Inpatient
<b>Improvement</b>	<b>Access gain</b>	5% (volume increase)	6 hrs./day or 1,500 hrs./yr.	
	<b>Productivity gain</b>	3,500 hrs. (nursing)	2,000 hrs.(nursing)	7,000 hrs. (nursing)
	<b>Unit cost reduction</b>	6%		
	<b>Inventory reduction</b>		\$146K	\$87K
	<b>Capacity gain</b>	5%	40%	
	<b>Defect reduction</b>	>50% (diversion hrs.)	35% (on-time starts)	\$3.7M (coding)
	<b>Revenue increase</b>	\$500K	\$1.3M	
	<b>Length of stay reduction</b>	40%		10%
			6.7% (after redesign)	

\*Select results from a sampling of RCG clients.



# Recent results – administrative value streams

		Revenue Cycle	Patient Safety	Facilities Design
<b>Improvement</b>	<b>Defect reduction</b>	62% (coding)	77% (ommitted meds)	
		78% (information)	70% (patient falls)	
		95% (authorization)		
	<b>Revenue increase</b>	\$7M (6mo)		
	<b>Lead time reduction</b>	25%	90% (adverse + sentinel events)	
	<b>Space reduction</b>			15%/\$7.3M

\*Select results from a sampling of RCG clients.



## Lean adoption is growing in the public sector

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- San Joaquin General Hospital
- San Mateo Department of Health/Aging and Adult Services
- San Mateo Medical Center
- New York City Hospitals + Health
- Denver Health
- Veteran's Health Administration
- US Army

# Systemic Approach

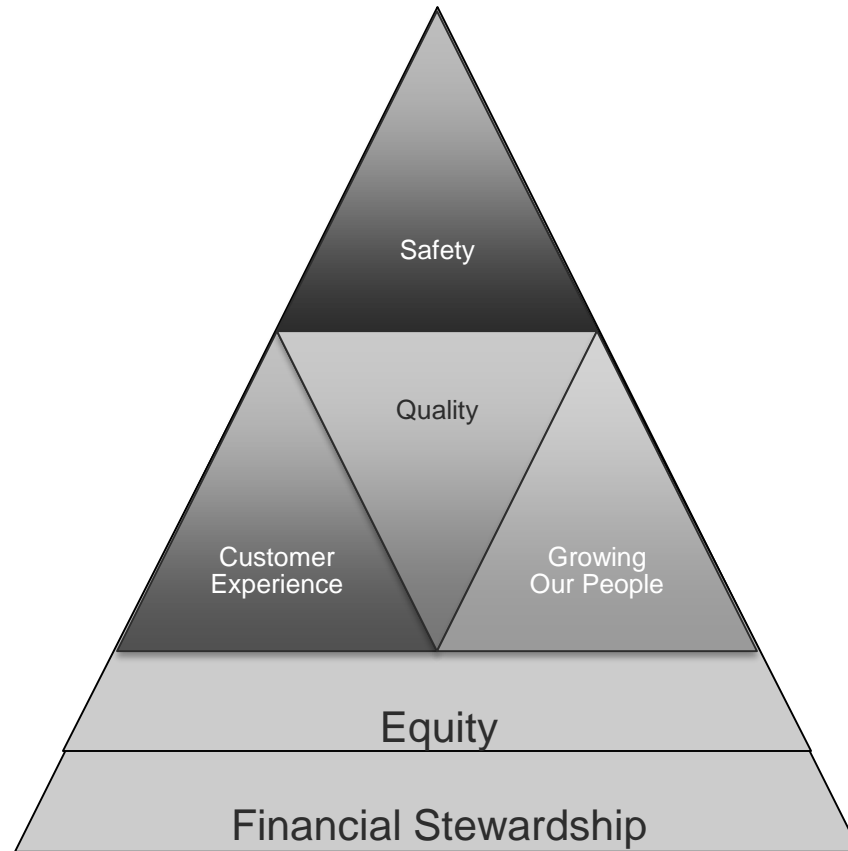
# Building Blocks

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- Strategy Deployment
- Engagement
- Breakthrough Improvement
- Incremental Improvement
- Management System

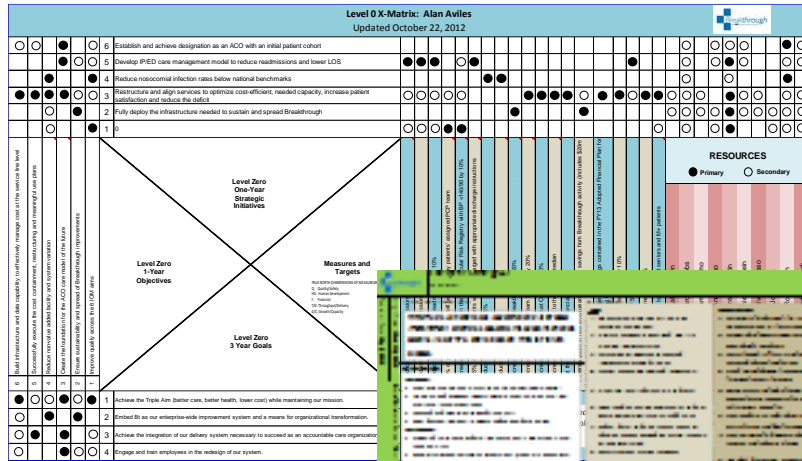
# True North

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# Strategy Deployment



X Matrix: "What"



A3: "How"



Successive A3s cascade to the work area

# Leader's Role

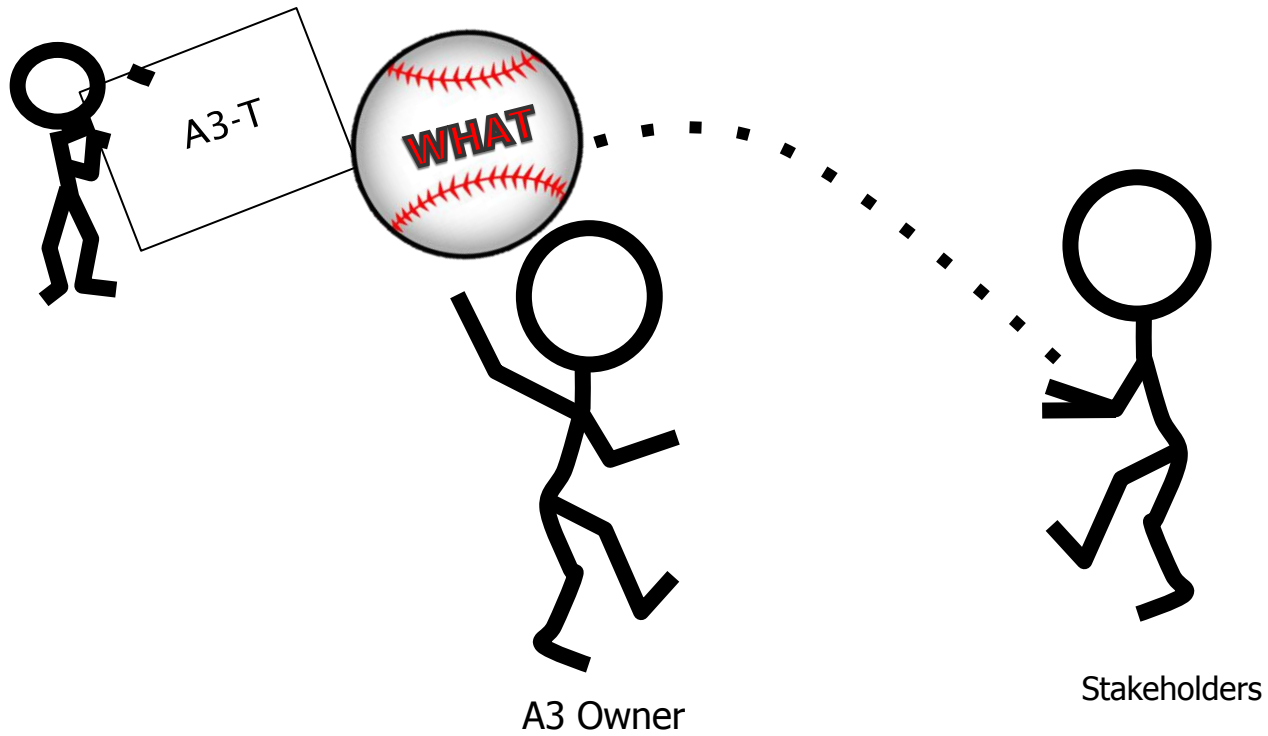
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- Clarifying, not leading, questions:  
*“Help me understand...”*
- Constructive coaching to prompt further thought:  
*“Are the results clear? Are you getting where you want to go?”*

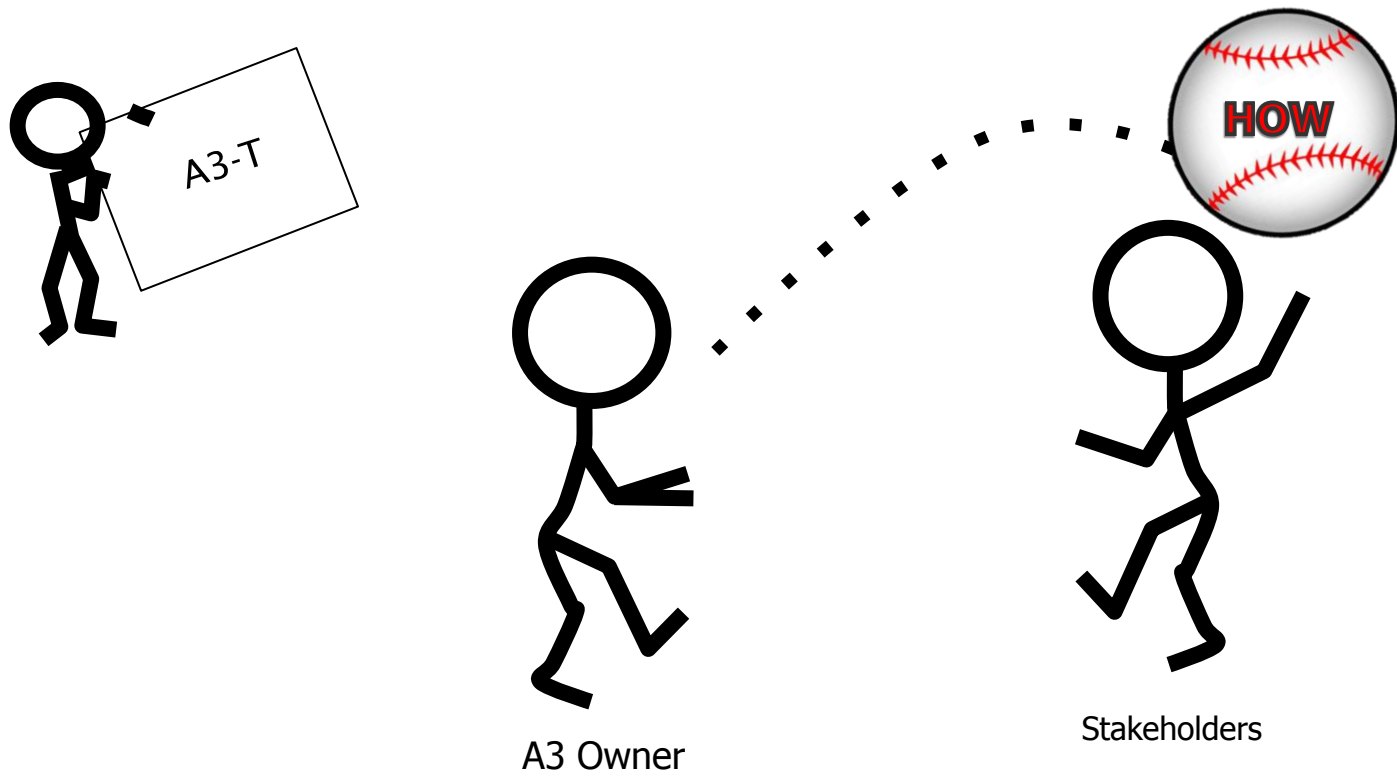
Go See.  
Ask Why.  
Show Respect.

- Fujio Cho, Toyota

# Humble inquiry - catchball



# Catchball





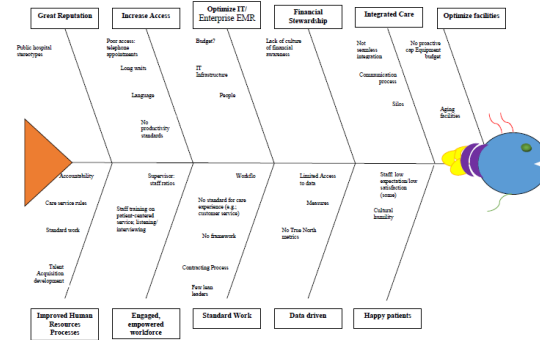
## Collaborative Development of Mission and Vision

We provide high quality healthcare that enables all San Franciscans to live vibrant, healthy lives.

To be every San Franciscan's first choice for healthcare and well-being.



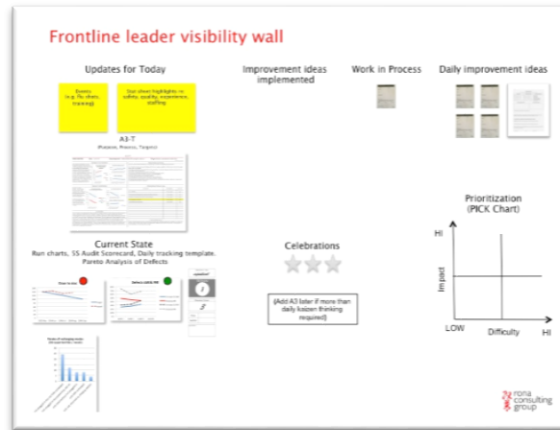
# Defining True North



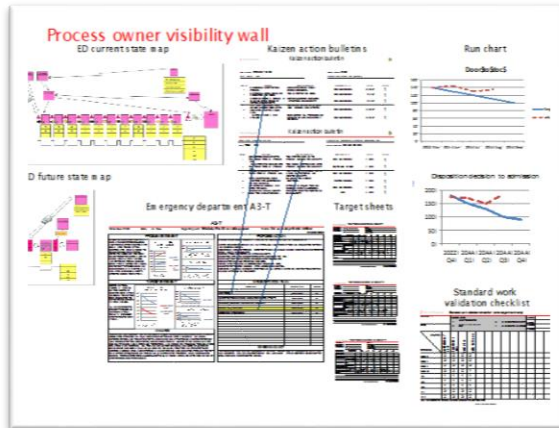
- Equity
- Growing our People
- Quality (outcomes)
- Safety (prevention)
- Financial Growth
- Care Experience

# Visually Managing with Visibility walls

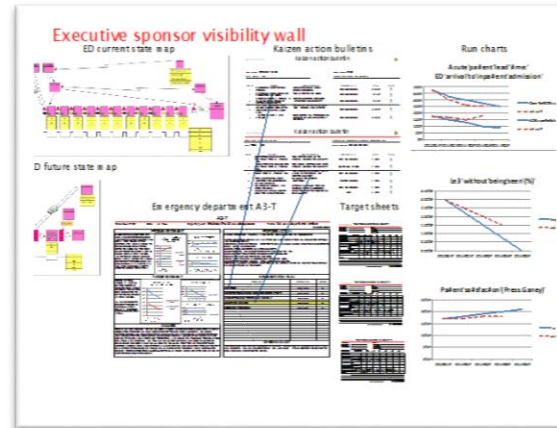
## Frontline leader visibility wall



## Process owner visibility wall



## Executive sponsor visibility wall



# Introduction to Lean



## What is lean?

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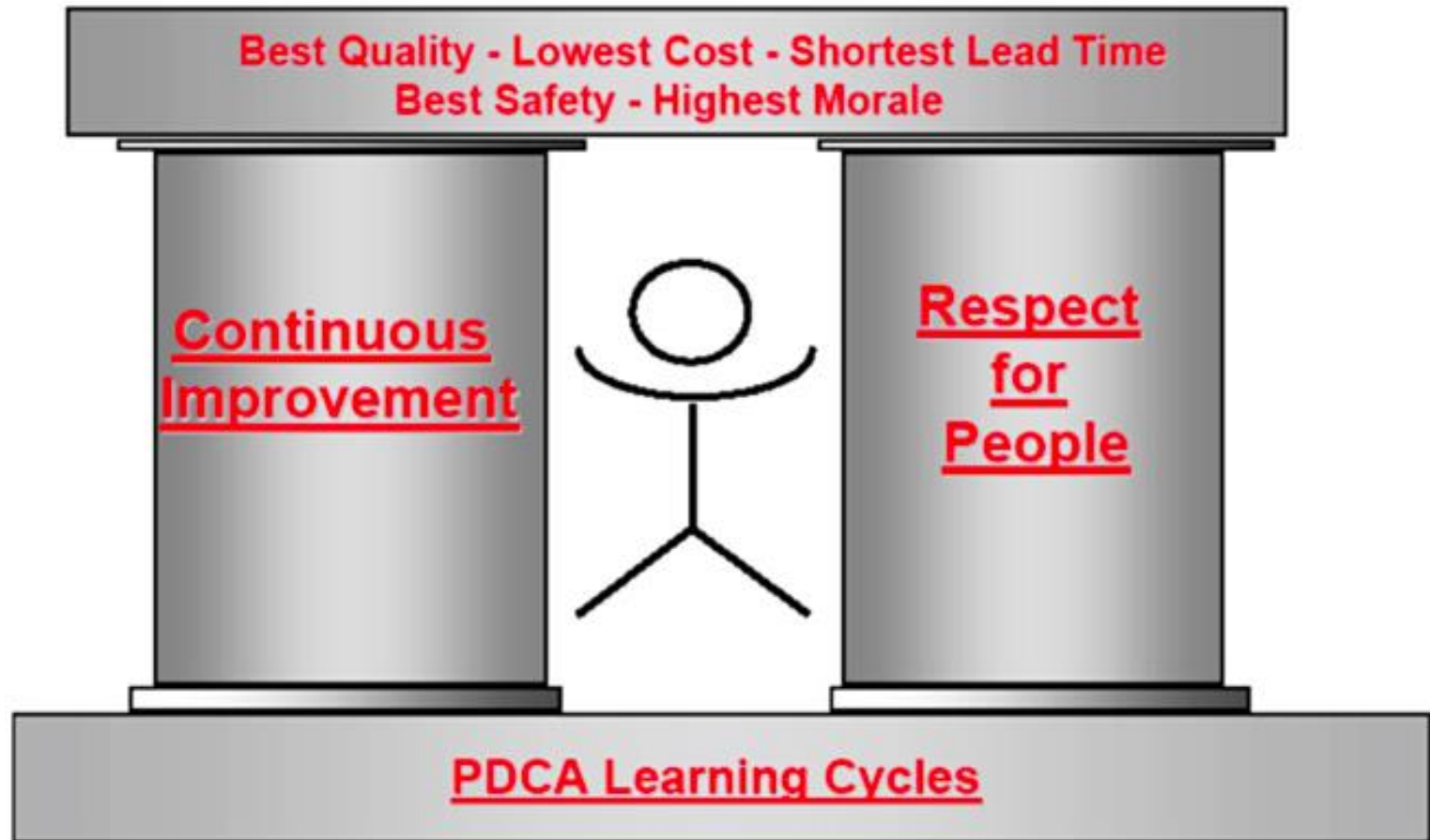
- A system for leading, managing and continuously improving the work that we do and the services we provide.

## Lean is the means to:

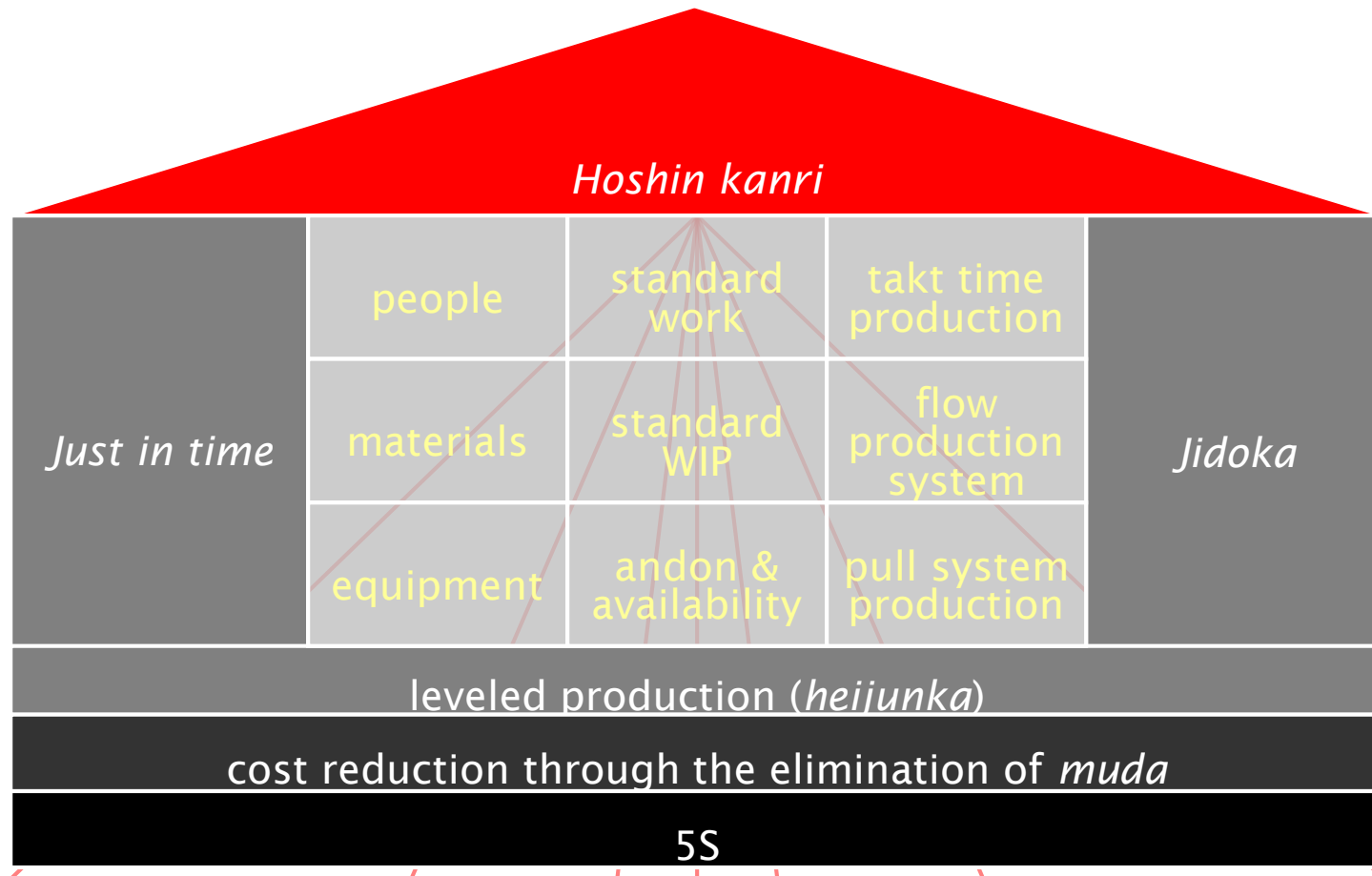
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- Ensure achievement of strategic priorities
- Create a standardized method for planning, implementing and improving that engages everybody, everyday
- Provide development and promotional opportunities for staff
- Eliminate waste and improve efficiency and performance

# Lean Values



# Toyota management system

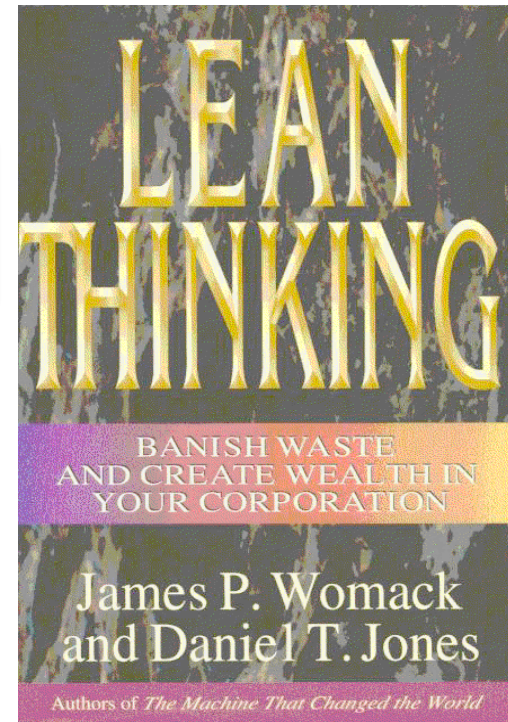
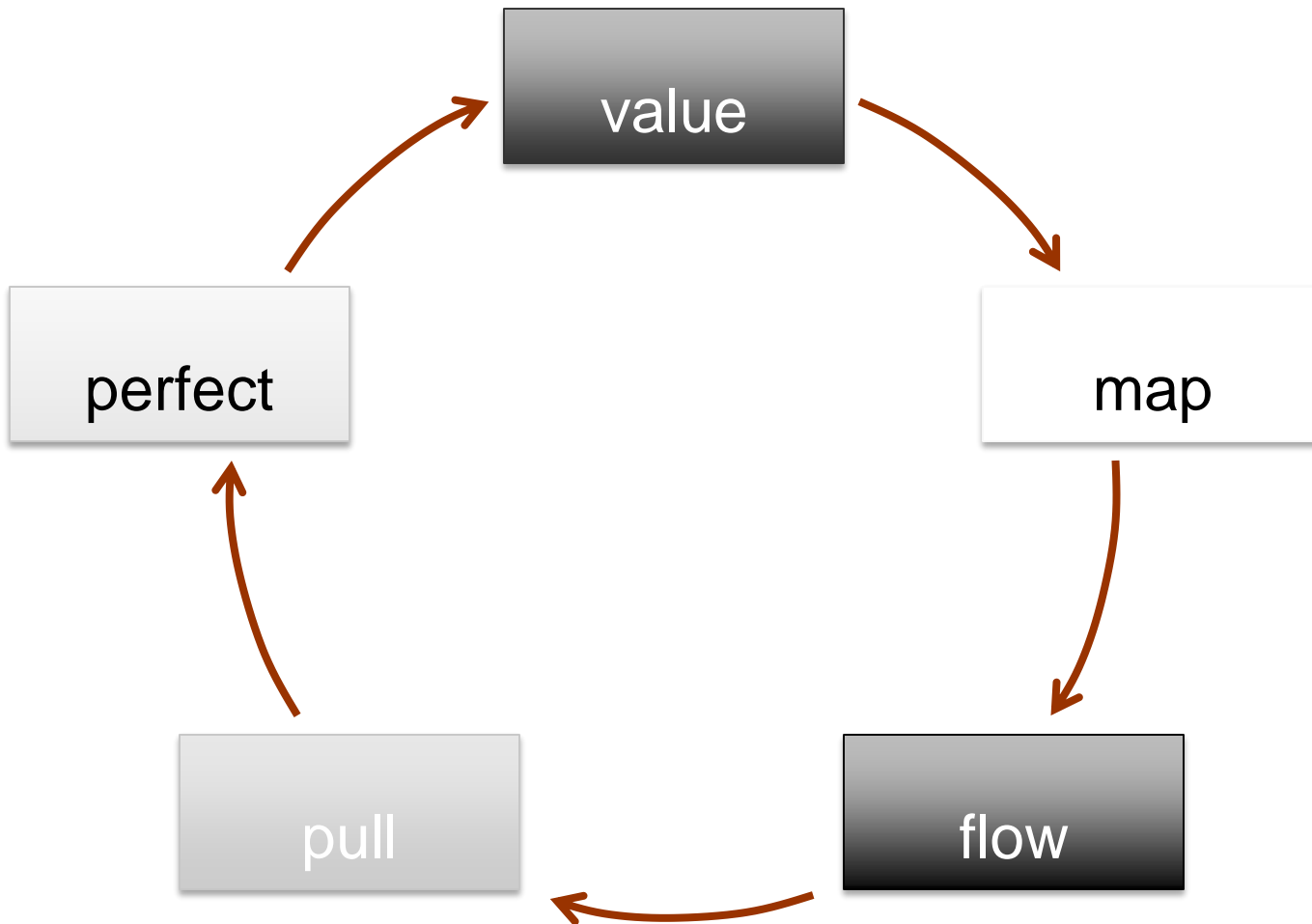


# Approach

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- Plan
- Engage People
- Right Approach, Right Tools, Right Place
  - ▲ Set the stage with learning and doing – just in time
  - ▲ Learn to see and eliminate waste
  - ▲ Create flow
  - ▲ Reduce non-value added variation
  - ▲ Reduce the opportunity for mistakes
  - ▲ Plan Do Check Act (PDCA cycles of improvement)

# Implementing the Toyota Management System



# Seek and Eliminate Waste

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- Learn to see waste
- Learn to eliminate waste



## 7 (+1) Wastes

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- Transportation
- Inventory
- Motion
- Waiting
- Overproduction
- Overprocessing
- Defects
- (Not Using Human Potential)





# A community of problem-solvers

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*“No one has more trouble  
than the person who claims to have  
no trouble.”*

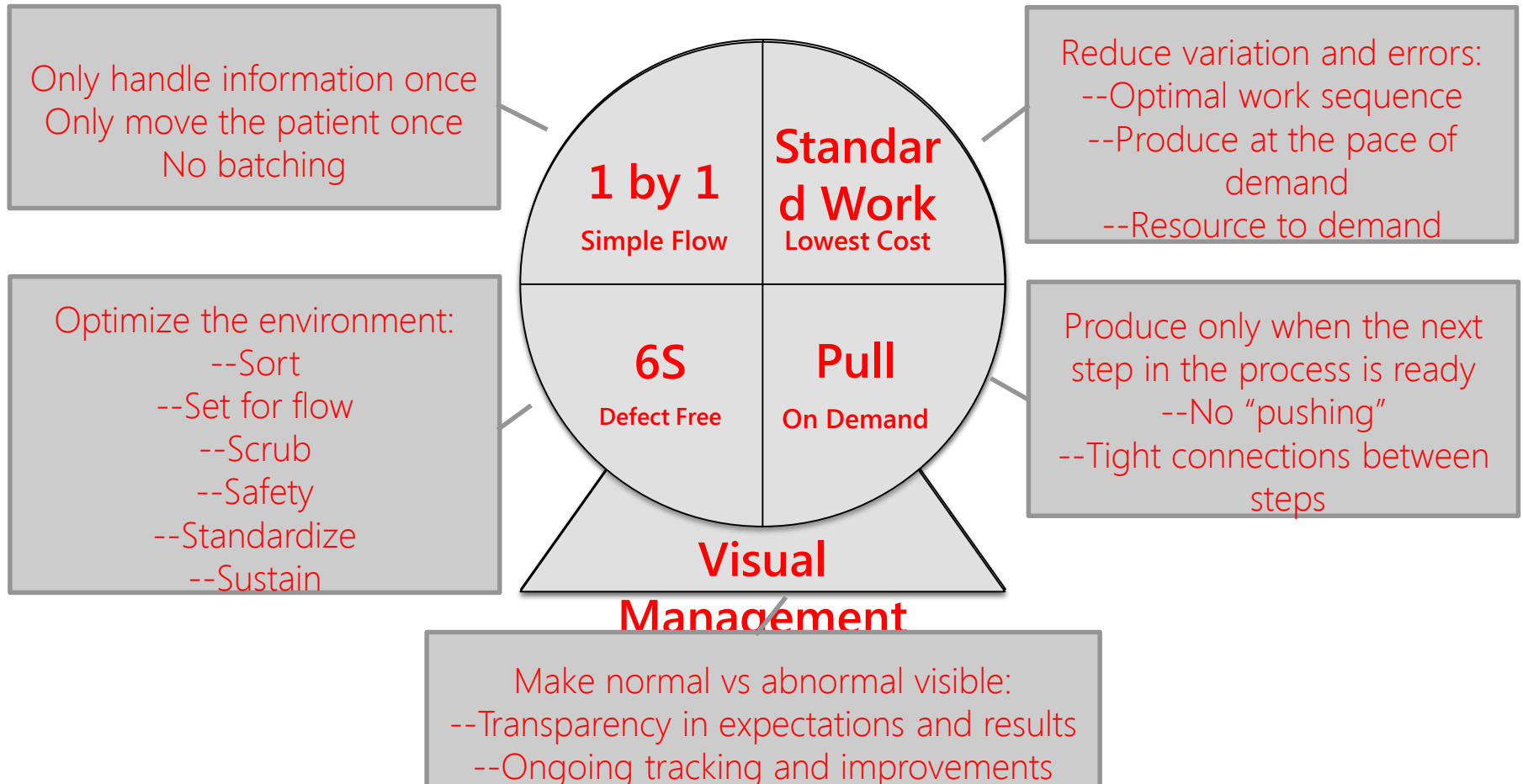
*Taiichi Ohno*

# Create Flow – the absence of waste

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# Elements of Flow



# Lean in Practice – Improvement Workshops

## Develop infrastructure

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- Fully engaged leaders
- Dedicated lean staff
- Gradual transfer of lean knowledge and responsibility to managers and staff
- Training –
  - ▲ Didactic, simulations, in the work-site
  - ▲ Just in Time
  - ▲ Learn as you go
- Space for collaborative team work and idea generation

# A community of problem solvers





# What needs to flow



Patients.  
Providers.  
Supplies.  
Medications.  
Information.  
Process.  
Equipment.

# Value as defined by the customer or client

- Externally determined.
- Customer driven.
- Improves the current state



- Speak to me in my primary language
- Treat me with respect
- Make me feel better
- Clean facilities



# Wasteful processes

A horizontal bar chart with a grey gradient. The bar is divided into two sections. The larger section on the left is labeled '95% waste' and the smaller section on the right is labeled '5%'. The right end of the bar tapers to a point.

95% waste

5%

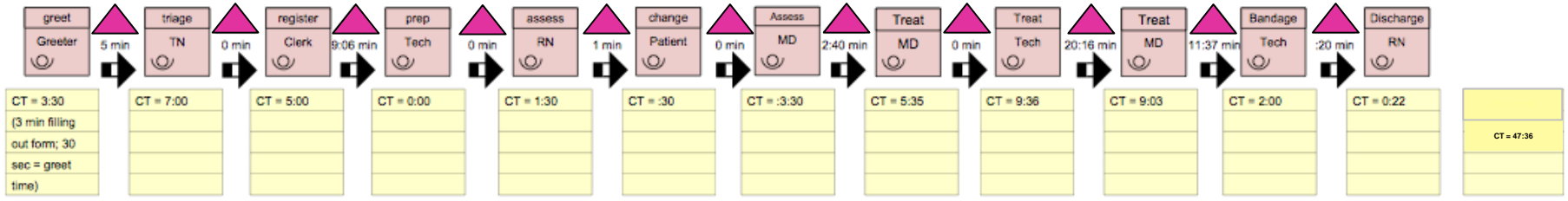
# Map to understand what we do

process step

wait time

process step

wait time



process cycle times

process cycle times

process lead time



# Level out the workload

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- Level out the workload (heijunka). “Work like a tortoise, not the hare.”
- One by one without batching



# Understand the pace of demand

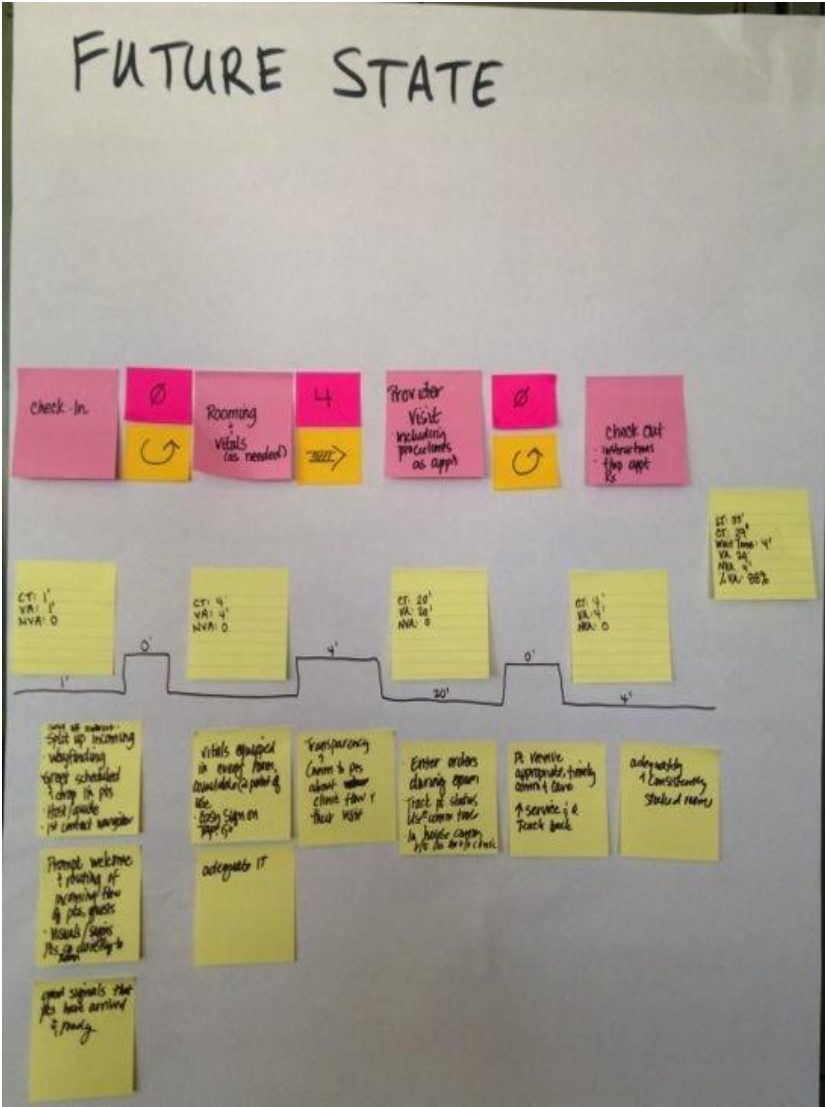
- How much of what do we need to provide?
- How much time do we have to do it



# Ideas for Improvement



# Future State Primary Care Visit







# Castro Mission Health Center Kaizen II - MEA Workflow



January 13 – 17, 2014



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San Francisco General Hospital  
Pharmacist Verification, Mistake Proofing & Pick Up  
Process



August 11-15, 2014



# SFDPH Population Health

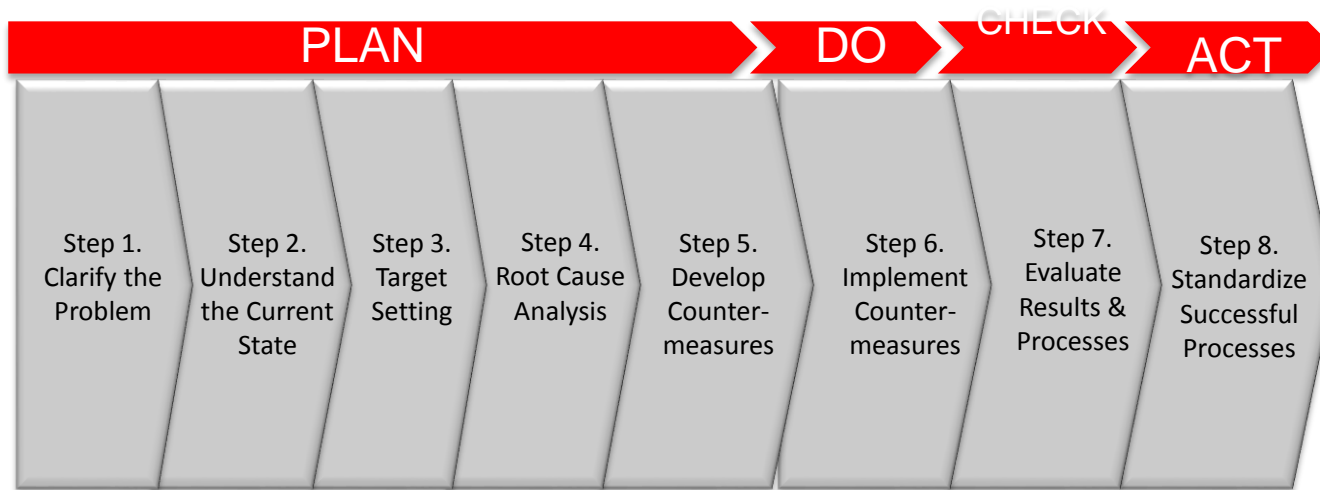


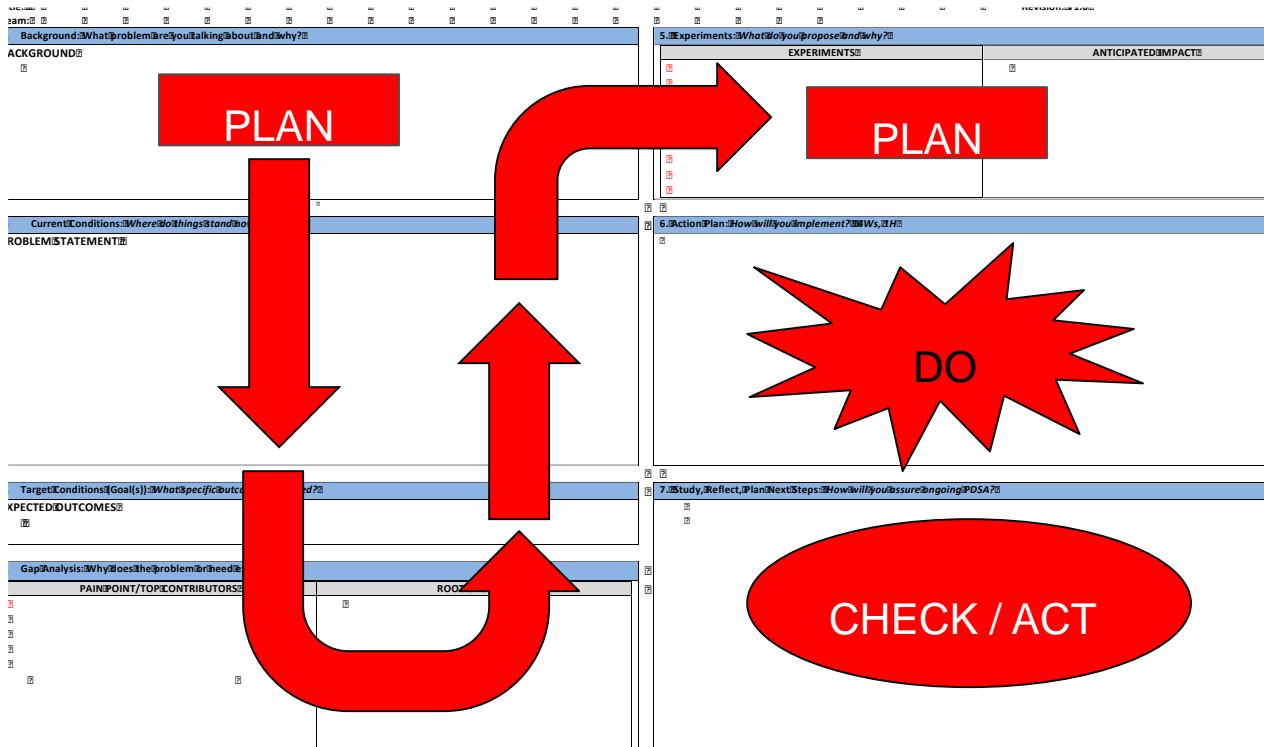
- Working in interdisciplinary teams
- Move noisy equipment out of work area
- Stock only what is needed, where it is needed



# A3 Thinking

# The PCDA Cycle





# A3 document system

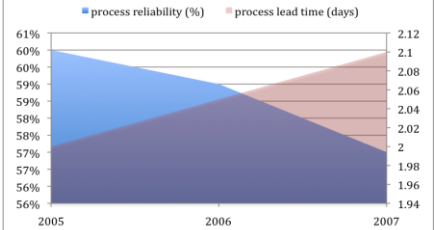
## A3-T

### Proposed team charter

### Theme: Improve process reliability to decrease process lead times

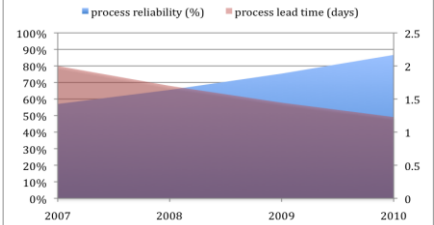
#### PROBLEM STATEMENT

During the past three years, process reliability has declined by 10% and lead times have grown by 12%. This has contributed to a significant deterioration in customer experience and an estimated % increase per unit costs.



#### TARGET STATEMENT

We will increase process reliability and lead time by 15% by the end of the current fiscal year. This should contribute to yearly 7.5% (approximately) reductions in per unit costs and to similar cost reductions in sustaining costs.



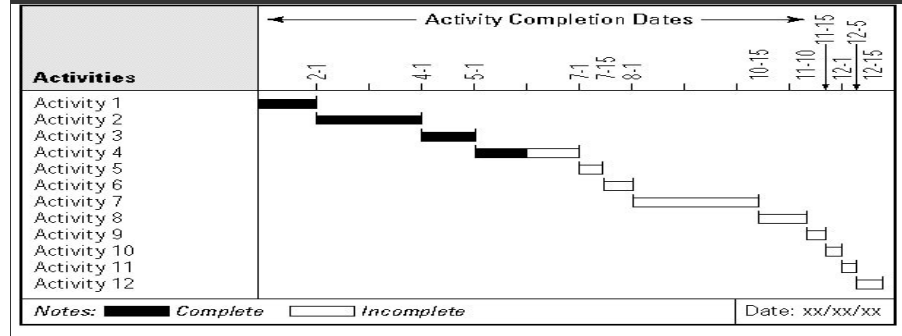
#### ANALYSIS

Process lead time is a function of how quickly we find and remove the seven deadly wastes: overproduction, waiting, transportation, movement, inventory, overprocessing, and of course defects. The presence of these wastes greatly increases the transactions cost of health care, and can be measured in terms of extended lead times, as we wait or search for the people, medicines, materials, or information necessary to complete our work, or while we stop to rework errors and defects, or while we stop to deal with the collateral damage of such errors and defects. By systematically eliminating the seven wastes, we increase process availability, efficiency, and quality, promoting the flow of patients, medicines, materials, and information throughout the healthcare system.

#### PROPOSED ACTION

In the coming year, we propose that all service lines and departments, guided by their value stream maps, will work to promote process flow by eliminating the seven wastes in their most critical processes. Through the catchball process, service lines and departments will interpret the overall targets of 15% improvements in reliability and lead time by explaining how these improvements will be made in the context of their respective operations. Although all staff members should be involved in measuring their own process quality, it is recommended that a “control part,” i.e., a frequently repeating patient experience or (in the case of some services lines and departments) service be chosen as a representative measure at the service or department level. Where appropriate, service lines and departments are encouraged to employ the resources of the organization’s KPO.

#### IMPLEMENTATION PLAN



#### CHECK AND ACT (verification and follow up)

Progress toward our targets will be checked frequently on the shop floor through the systematic adoption of visual management systems and daily stand-up meetings. In addition, site managers will conduct weekly standup visual reviews with all managers in attendance. Furthermore, the President’s Diagnosis will be implemented, based upon the Transformation Ruler. Monthly local self-audits will be conducted. Once a year, the CEO and President will conduct a formal diagnosis and make visits to each site.

Date:

Reporting Unit: Operations management team



# A3 - an iterative, living document

Hand-written in pencil...

**Topic: PHNIX Project "Reboot"**

**Background:** PHNIX project is 18 months behind schedule. Total \$ to date ~\$3,000,000. Total \$ to date ~\$3,000,000. Total \$ to date ~\$3,000,000.

**Current Conditions:** - Communication gaps between teams. - Lack of clear roles/responsibilities. - No dedicated project time. - No dedicated project team.

**Lessons Learned:** - Communication is key. - Clear roles/responsibilities. - Dedicated project time. - Dedicated project team.

**Counter measures:** 1. Reestablish Leadership team. 2. Establish Leadership Committee. 3. Assign program resources. 4. Use BP as opportunity to establish new collaboration model across programs/teams.

**Analysis:** - Scope too big - Reduce # of focus. - ID of develop where dependencies exist. - Decision making process needs to change - not working. - Involve all stakeholders. - Put responsibility/accountability on each team/individual.

**Plan to be developed:** - Delegate tasks to...

Or more formally drawn...

TEAM CHARTER	Date: 19-Sep-13	Reporting U/Castro Mission Health Center Primary Care	Theme Access, Service, Value																		
<b>PROBLEM STATEMENT</b> CMHC is a popular primary care clinic that has been identified as needing improvement. Patients experience bottlenecks at the front desk, feel they wait too long to see their providers and express that their questions and problems are not addressed. Some patients arrive earlier than their scheduled appointments and have to wait longer. Inefficiencies in patient flow and variation in service provision result in lead times that are too long and value added times that are too small. The lead time from patient arrival to discharge from clinic is currently 51'02" with 31'17" of non value added time. Variability in the way the clinic provides service creates variability in patient care experience.		<b>PROPOSED ACTION</b> Implement 5S workplace organization with shared accountability to ensure supplies, equipment and forms are appropriately stocked. Improve patient flow by eliminating all bottlenecks so PCP visit is rate-limiting step. Standardize procedures and workflows. Continuously coach staff and management to sustain changes so we can continue to improve and grow. Take advantage of existing Invision check in and registration processes. Standardize all workspaces. Create cells so staff can work from the cells closest to their areas. Streamline log in process (Tap and Go) to computer. Explore electronic communication tools to support improved work flows. Redesign space and flow at front desk.																			
<b>TARGET STATEMENT</b> Lead Time Reduction Reduce lead time for return visits from 51'02" by 30% (24') in 12 months, by another 10% (30'36") by 18 months. Reduce lab lead time by 50% from 51'28" to 25'44". Patient Satisfaction Improve patient satisfaction by 50% from baseline of ___ to ___ as measured by _____. Staff Satisfaction Improve staff satisfaction from ___ to _____. Access Improve 3rd next available appointment access.		<b>IMPLEMENTATION PLAN</b> <table border="1"> <thead> <tr> <th>ACTION ITEM</th> <th>RESPONSIBILITY</th> <th>DUE DATE</th> </tr> </thead> <tbody> <tr> <td>5S Workplace Organization</td> <td>MEB</td> <td>10-28-13/01-13</td> </tr> <tr> <td>MEA, Pre-Visit, Intake, Rooms &amp; Yards</td> <td>MEB</td> <td>12-09-13/13-13</td> </tr> <tr> <td>Provider Workflow / Discharge</td> <td>MEB</td> <td>01-13-01/17-14</td> </tr> <tr> <td>Registration</td> <td></td> <td></td> </tr> <tr> <td>Lab</td> <td></td> <td></td> </tr> </tbody> </table>		ACTION ITEM	RESPONSIBILITY	DUE DATE	5S Workplace Organization	MEB	10-28-13/01-13	MEA, Pre-Visit, Intake, Rooms & Yards	MEB	12-09-13/13-13	Provider Workflow / Discharge	MEB	01-13-01/17-14	Registration			Lab		
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<b>ANALYSIS</b> There is major confusion and misinterpretation in flow and processes. Multiple functions handled at the front desk slow down the visit registration process. Patients with shorter discharge needs sometimes are delayed behind other patients with more complex needs. Some patient's needs that can be quickly met are made to wait. Lack of standard work creates variability. MEA practices related to intake, rooming, visit order, variability in provider and staff start times affect clinic operations. Communication between provider, patients and nursing staff is not always clear. Staff is not maximizing electronic tools for team communication. Discharge instructions to patients are not clear. Resources are not in place or well organized to support the best possible patient and staff experience. The current layout of the clinic is not conducive to optimal workflows. There are limitations and defects with the current registration space being able to accommodate two lines.		<b>CHECK AND ACT</b> Monitor implementation of Kaizen improvement's weekly and workshop targets with completion of 30, 60 and 90 day reports as well as daily audits of standard work. Weekly review with executive team. Development of visual workplace and communication vehicles.																			



Thank you