2016 SHIP Lean Training & Mini-Project

Webinar 2

Introduction to Lean Tools

February 16, 2016

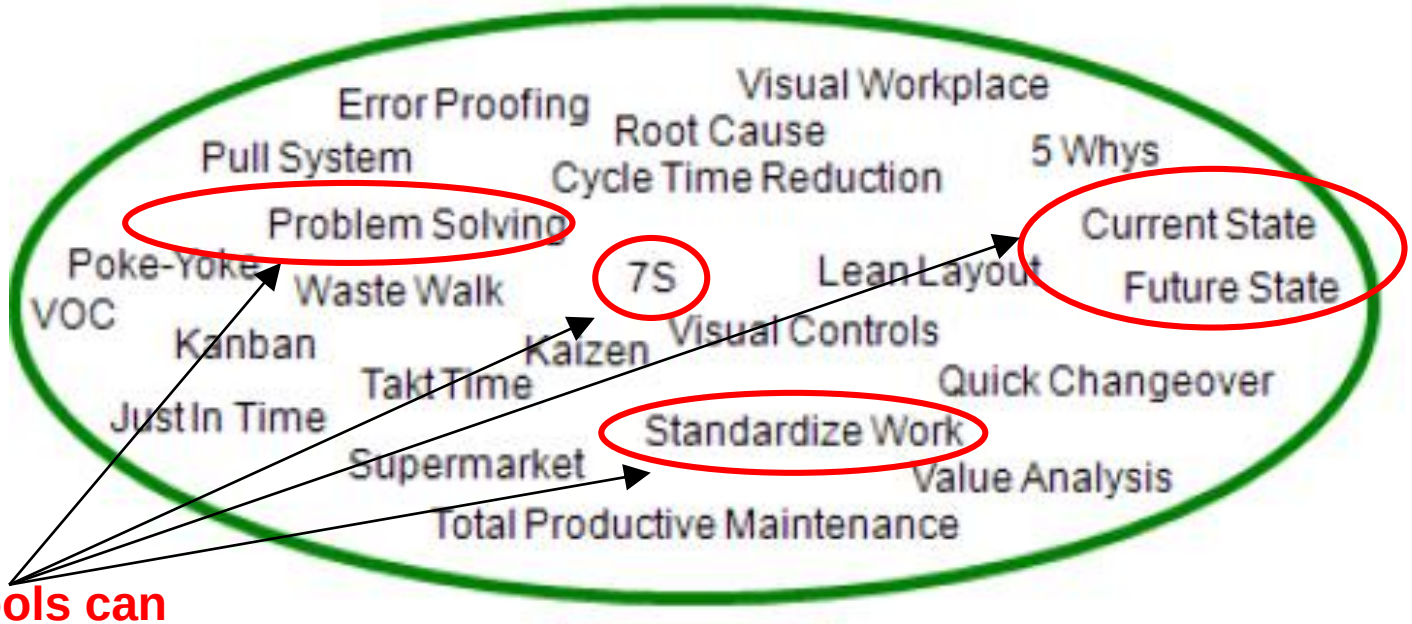
Presented by: John L. Roberts, MA

Today's Agenda

Introduction to Lean Tools

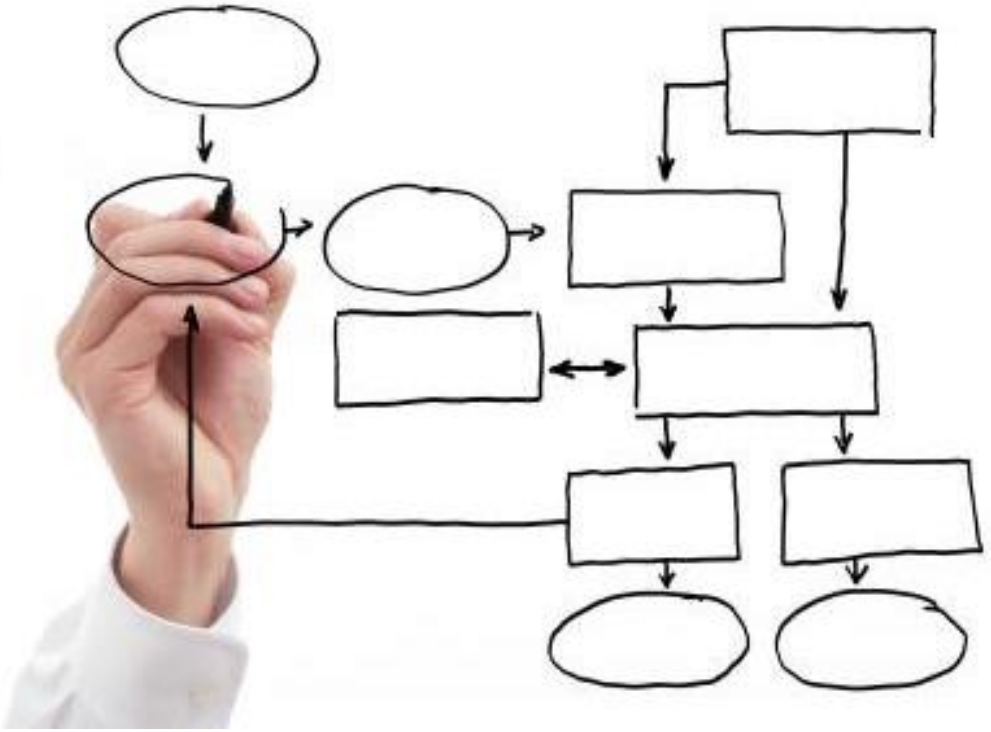
- Value Stream Mapping
- 5S: Worksite Organization
- A3 Problem Solving
- Standard Work

In the World of Lean Tools…..



These tools can solve 95% of your organization's issues

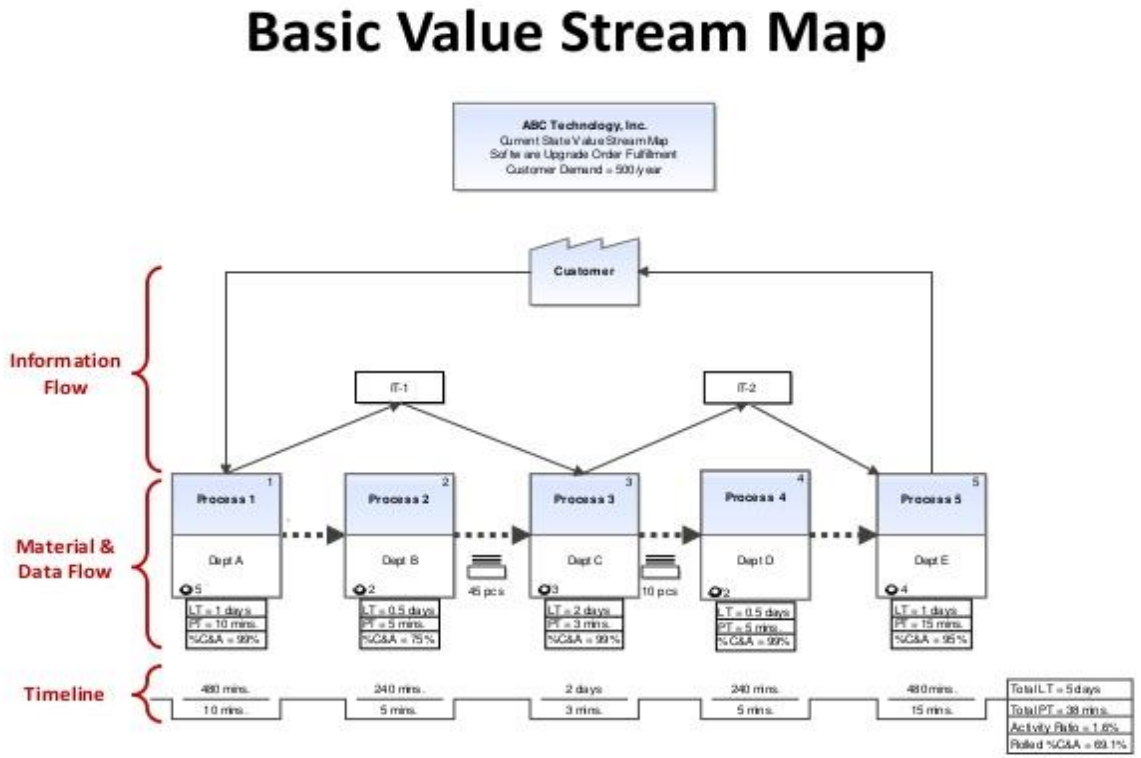
Introduction to Value Stream Mapping



Where there is a product (or service) for a customer, there is a Value Stream.

The challenge lies in seeing it.

Value Stream Mapping (VSM)



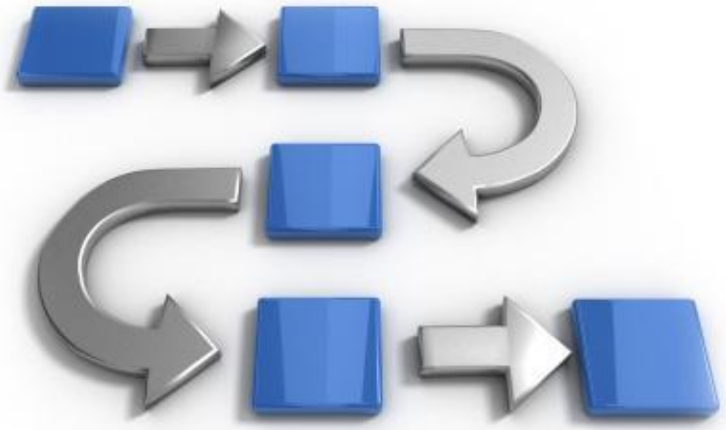
Purpose:

"To See the Flow"

Graphical representation of **patient, material and information** flow

What is a Process?

A **process** is a set of steps that transform one or more inputs into one or more outputs.



"If you can't describe what you are doing as a process, you don't know what you're doing."
W. Edwards Deming

What is a Value Stream?

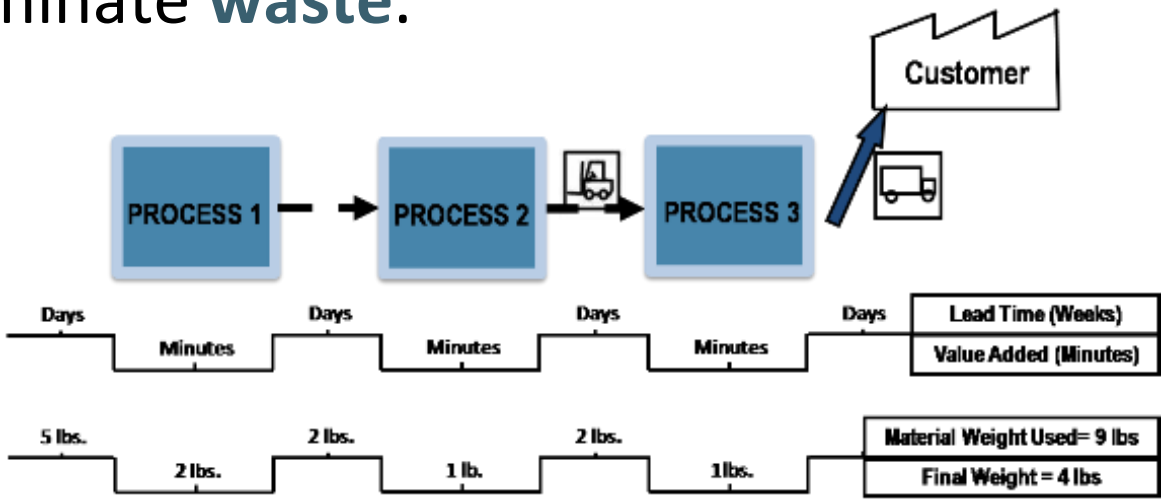
- Defines value from the customer's perspective
- All of the actions and tasks, both value added and non-value added, required to bring an item (an idea, information, product or service) from its inception through delivery.
- Value streams vary in scope: reach beyond the enterprise to single process size

Purpose of Value Stream Mapping & Analysis

- Develop a common understanding of the current process
  - The relationship of process steps
  - A true picture of the process
- Create a baseline to measure improvements against
- Define a vision of the future process
- Identify opportunities for improvement
- Design an implementation plan for improvements

VSM in Healthcare

- Define **value** from your customer's point of view.
- Determine which steps **add value** and which ones add waste.
- Standardize and **improve** Value Added processes.
- Eliminate **waste**.

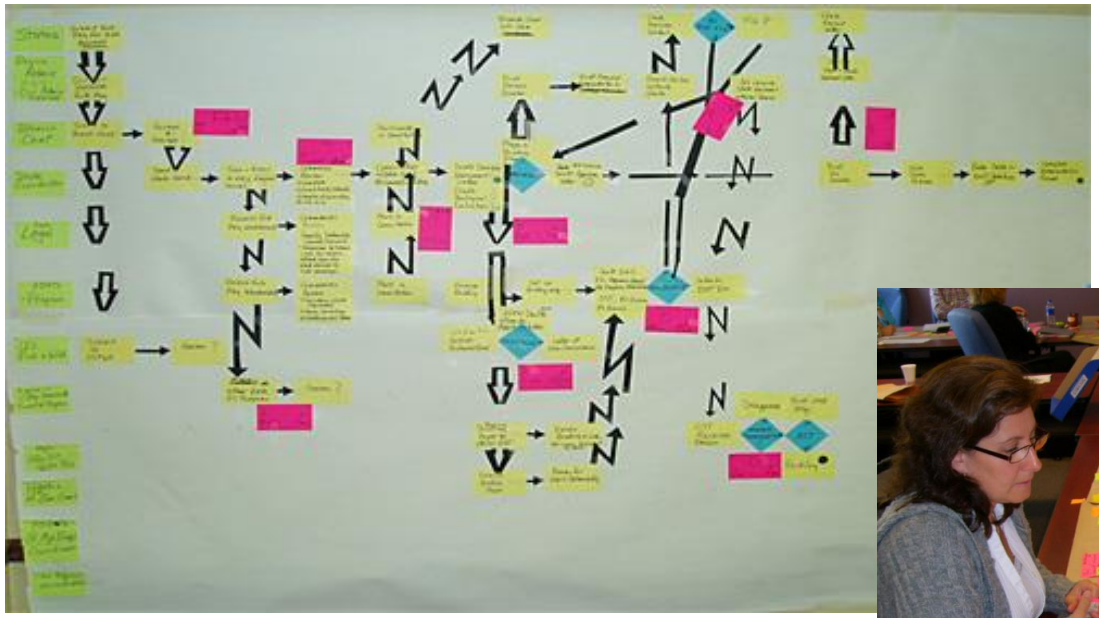


Why is VSM Helpful?

- Helps **visualize** connections, interactions and flows of patients, materials and information.
- Provides a way for healthcare providers to easily **identify and eliminate** waste.
- Identifies the **constraints** – any resource whose capacity is less than customer demand.
- Helps employees **understand** the organization's entire Value Stream and not just a single function of it.

Current State Map

The way it “really” is today…….



Value Stream Mapping

Normally a Value Stream Mapping team is comprised of three to eight participants led by a Value Stream leader.

During the Value Stream Mapping process, team members will use additional Lean tools, methods and techniques.

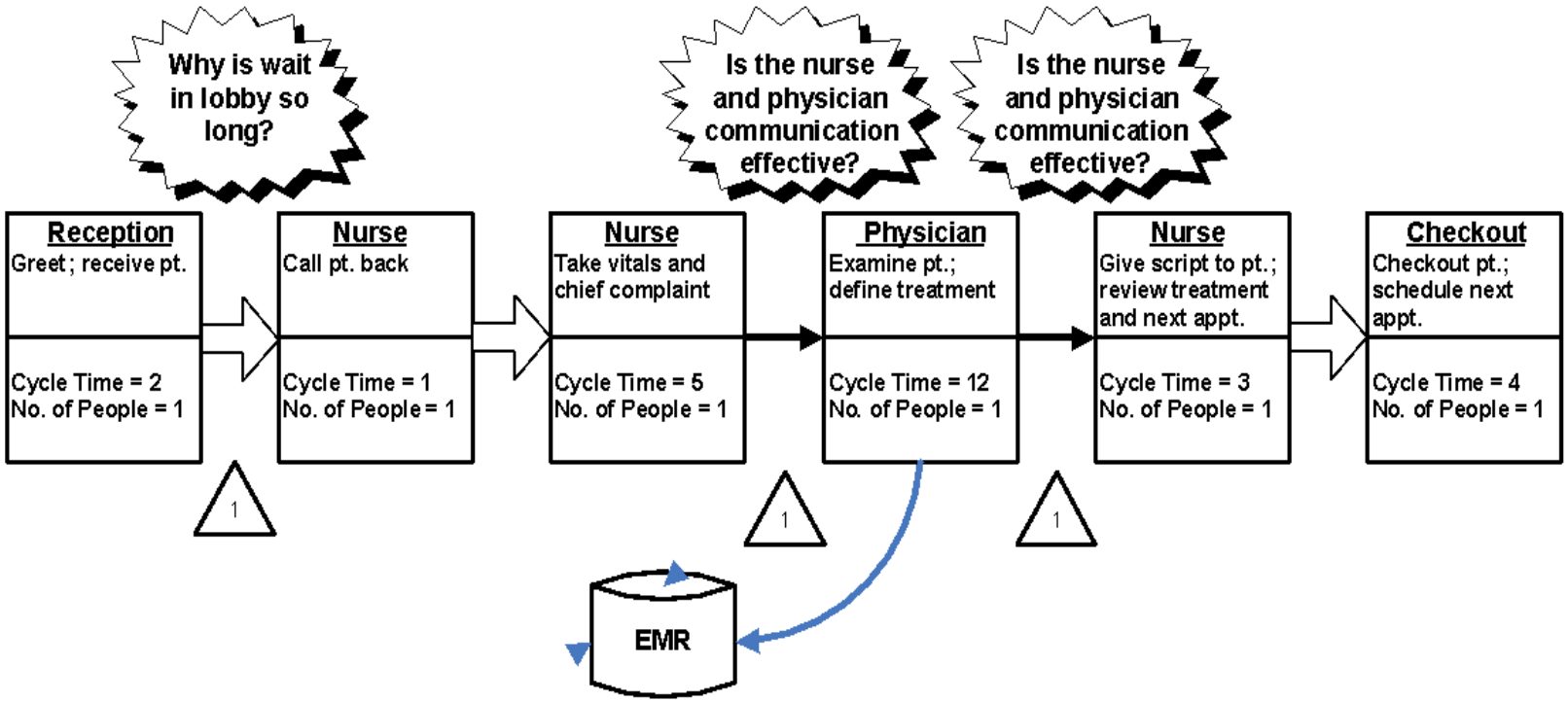
Tips for creating a VSM

- The process of Value Stream Mapping should involve the **whole team**.
- Actually **walk the process**….follow the material and information through the process starting at the beginning.

Getting Started with a VSM

- Define the **boundaries**
- Define the **value**
- Identify the **tasks and flows** of patient and information between them
- Identify **resources** for each task and flow
- Create the **Current** State Map
- Visualize the **"ideal state"** and create a Future State Map
- Develop **action plans and tracking**

Current State Value Stream Map for Patient Office Visit



Seven Forms of Waste *[Waste adds no value in eyes of the patient]*

1. Confusion [activities that require clarification questions ; looking for things]
2. Motion/conveyance [Physical movement to complete a task]
3. Waiting [Waiting for a procedure , medication to arrive , order from provider]
4. Overprocessing [doing more than is necessary]
5. Unnecessary Inventory [excess things ; stored supplies that are obsolete]
6. Defects [errors, incorrect act or decision or misunderstanding]
7. Overproduction [Doing more work than is necessary ; redundant paperwork]

Legend

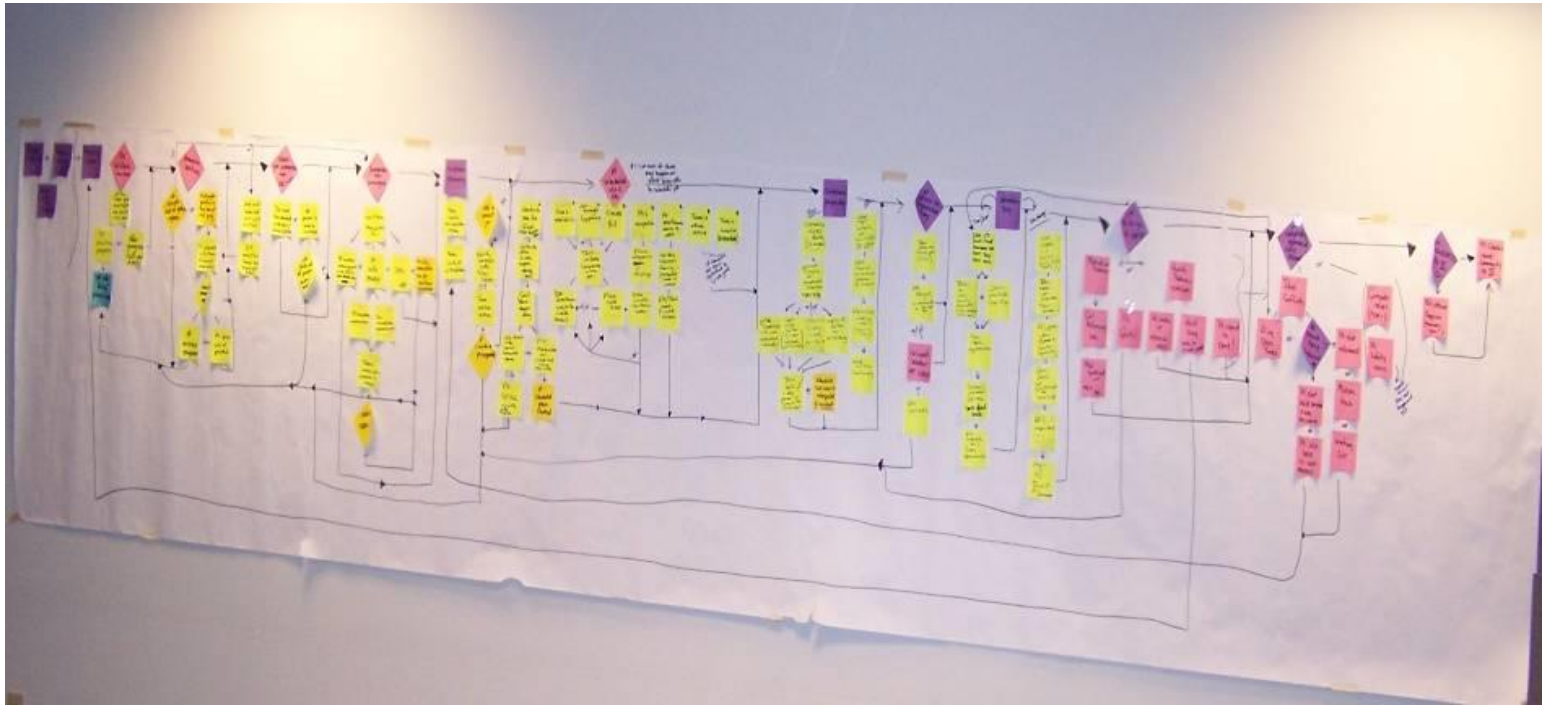
1. All times in minutes
2. Value-Added Time has value in the eyes of the patient [Pt. would pay for it if given option]
3. Non-Value Added Time has no value in the eyes of the patient [Pt. would not pay for it if given the option]

45 min.	60%
30 min.	40%
75 min.	100%

James Shirley Management Consultants Inc. [7/29/10]

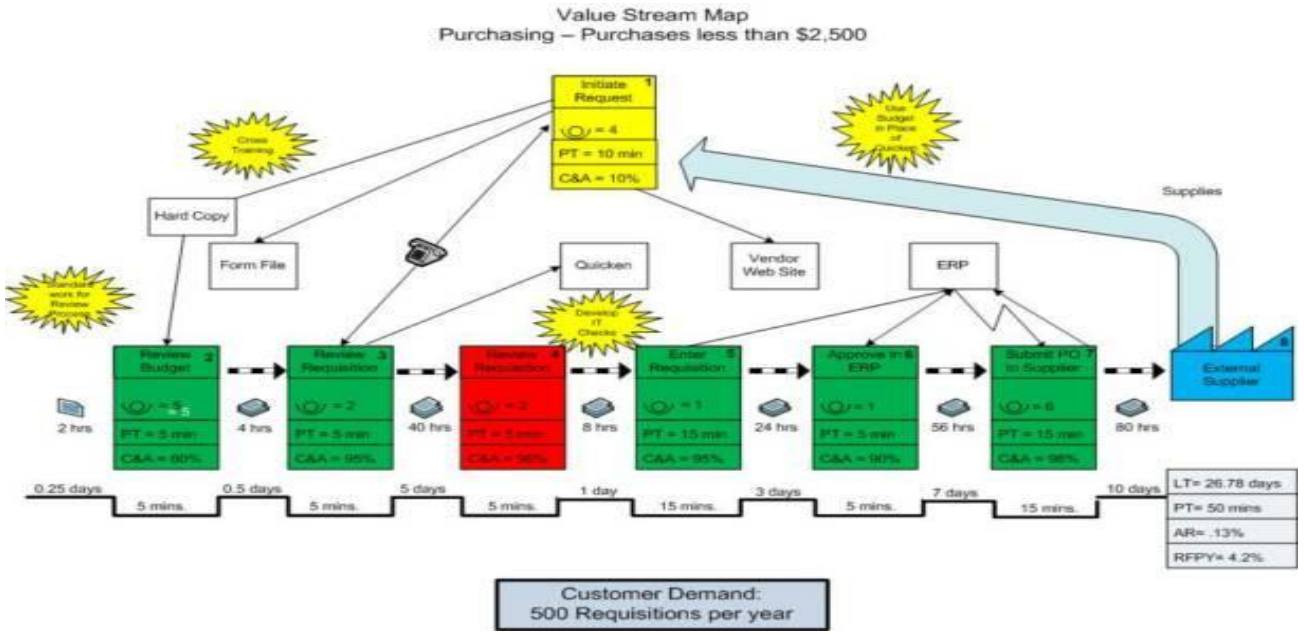
Next Step: Future State Map

Where do we want to be?



Value Stream Mapping

Using the current state map, we identify all the areas where there are significant opportunities for improvement, and mark these on the map.



Common practice is to use "**Kaizen bursts**", where each burst represents an opportunity for change that can be addressed through a short, focused, 3 to 5 day team-based improvement activity.

Future State Map

- Any non-value added steps
- Long lead-times or queue times
- High difficulty levels
- Accurate and complete levels that are less than 95%
- Where priorities do not match
- Reliability of equipment less than 95%
- Quantities or batching work
- Long processing times

Value Stream Mapping

What	Who	When
Consolidate and update laboratory reference guide	Mary	31-Aug
Identify and train pilot unit	Joe	7-Sep
Run pilot	Joe	14-Sep
Finalize new process	Team	21-Sep
Train all nursing staff	Mary	15-Oct

Once we have developed our Future State Map, we create a build a **detailed Implementation Plan**, and use that plan to **implement the necessary changes**.

Each round creates a new Current State from which to launch the next round of changes.

Keys to Success

- Have the right people in the room
- Empower the team to make immediate changes to the process
- Full participation from all team members
- Attack process, not people
- Agree on measures and how they will be collected
- Review action plan frequently for progress

Introduction to 5S

Workplace Organization

5S is short for:

- Sort,
- Set in Order,
- Shine,
- Standardize and
- Sustain

5S represents 5 disciplines for maintaining a visual workplace (visual controls and information systems).

The 5S Model

Sort - All unneeded tools, parts and supplies are removed from the area

Set in Order - A place for everything and everything is in its place

Shine - The area is cleaned as the work is performed

Standardize - Cleaning and identification methods are consistently applied

Sustain - 5S is a habit and is continually improved

6th S - Work areas are **safe** and free of hazardous or dangerous conditions

Workplace Organization

Waste occurs when supplies are not properly maintained in the workplace and become either damaged over time or outdated.

An organized work environment allows us to manage and control our inventories with less waste.

Workplace Organization

Another example of waste is the time lost to searching for things in a cluttered and disorganized workplace.

You can minimize waste of motion through better location and identification of equipment and supplies.

Current Conditions

- Unorganized Workbenches
- Product Flow not Obvious
- Time wasted looking for things
- Hoarding of supplies
- Poor Utilization of Space
- General Clutter
- Supply Shortages and “Hidden” Inventories

Workplace Organization

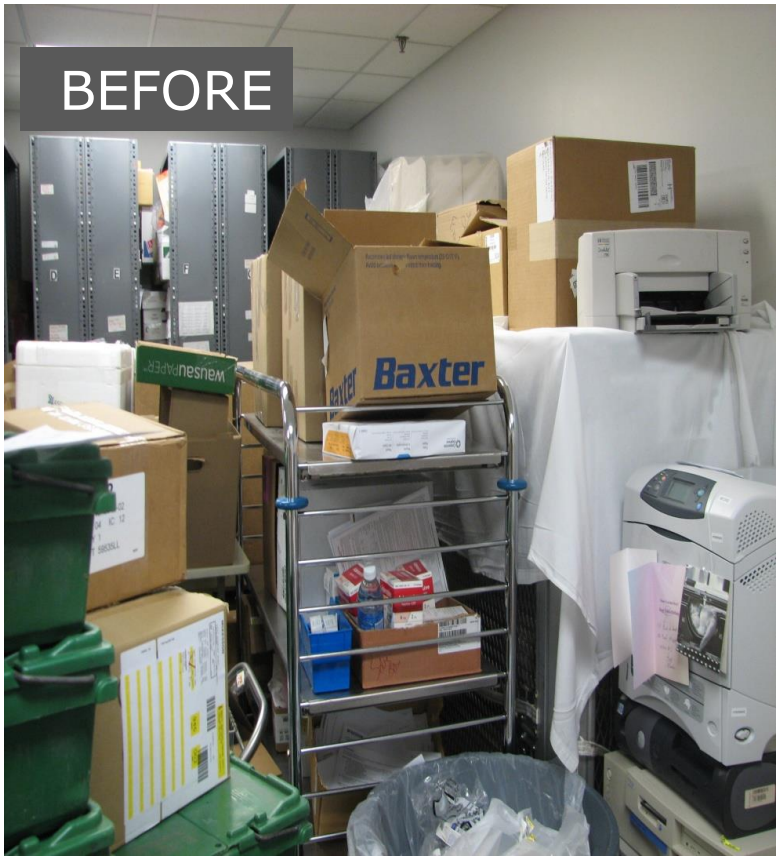
Through the proper use of 5S methodology, you can expect to:

- Decrease waste of space
- Decrease waste of people resources
- Improve safety
- Improve the overall quality of patient care
- Improve integration of patient services (flow)
- Decrease staff motion

Step 1: Sort

Separate the needed from the not needed

Step 2: Set in Order



A place for everything & everything in its place!

Step 3: Shine

"Scrub" and inspect equipment to ensure it is in perfect working condition...

Add inspecting equipment into your work routine.

Regularly "shine" to ensure everything is in perfect working condition

Step 4: Standardize

Note: Blue taped outlines and labels ensure equipment is quickly found and returned to the same spot every time.

Standard Work requires determining the best method then following that method every time.

Step 5: Sustain

Develop a method for sustaining your gains

33

Workplace Organization

There are three steps in the **Standardization** process:

- First, assign 5S responsibilities
- Next, integrate the 5S duties into regular work duties
- Then, continually check on the 5S maintenance level

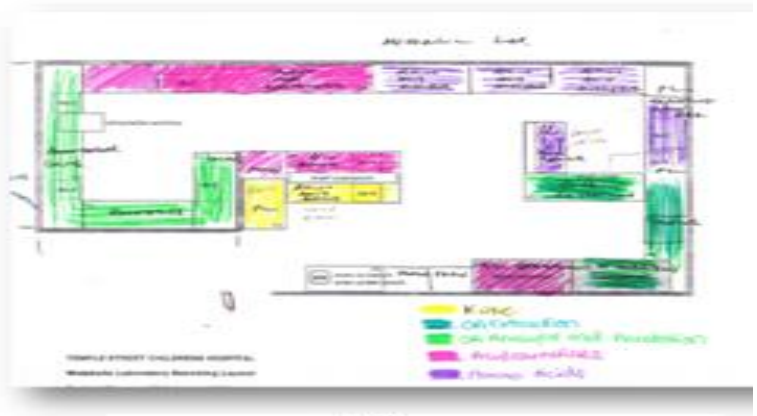
The third step is critical so that we don't wait until a significant degradation of the 5S activity occurs before taking action.

Workplace Organization

The “Set-In-Order” phase should result in reduction of wasted time and motion because equipment and supplies are close to the work area and are easy to access.

Reducing unnecessary motion is one of the key objectives.

Before



After

Workplace Organization

If better organization and labeling could save even a few seconds, when you multiply by the number of times a document is accessed, the savings can be substantial.

Introduction to A3 Problem Solving

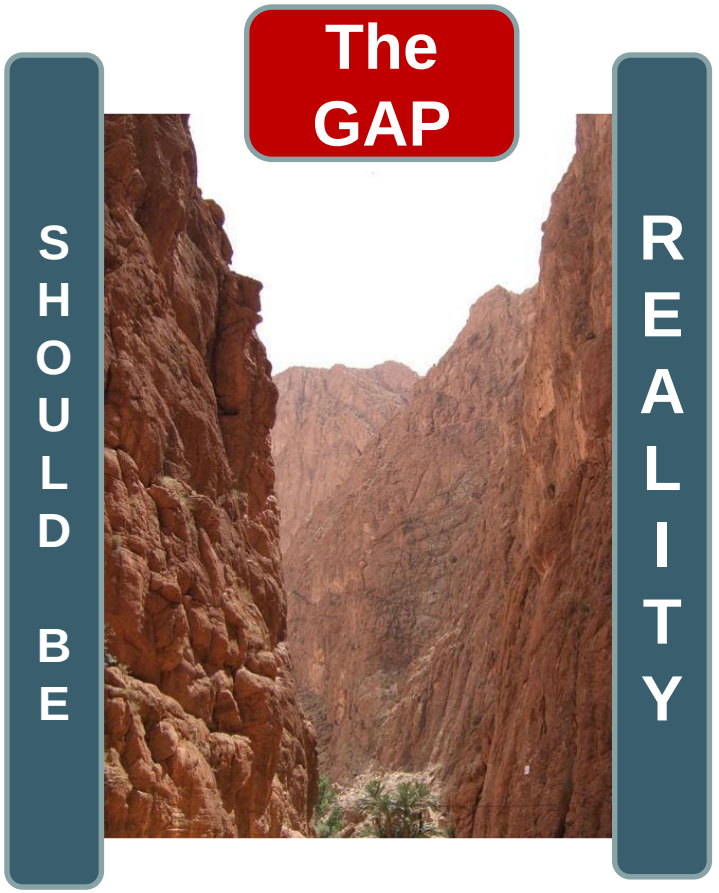
Problem Solving 101

What is a problem?

- Gap between what "Should Be" and "Reality"

Why are problems hard to solve?

- People treat symptoms
- No clear goals
- No consensus



What is the problem?

- Most people are smart enough to solve problems. Most people don't do it right.
- They don't define the problem and jump into conclusions.
- Some analyze it to death without trying out anything.
- Many rely too much on themselves, when multiple people typically have a better chance of solving the problem.

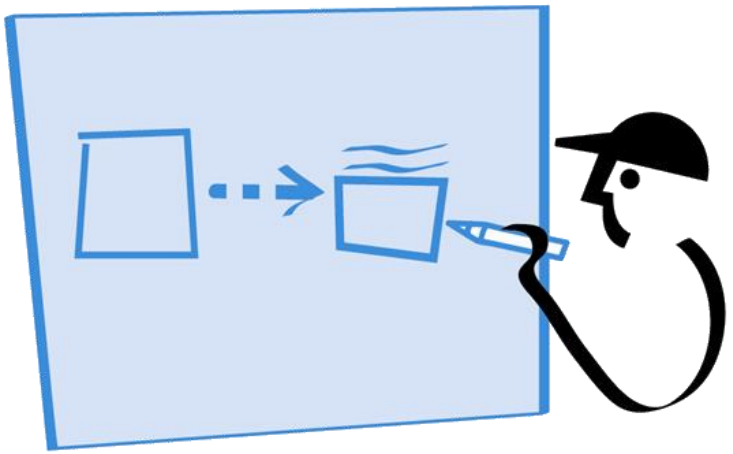
Why problems are not solved in hospitals

- Different departments see the problem differently
- People leap to solutions rather than identify the real issue-symptoms instead of root cause
- Solutions are adopted before their implications are fully considered
- Once the 'fire' has stopped blazing people think that the problem is solved
- The solution implementation isn't properly managed
- Nobody notices that the solution isn't actually working properly
- When the focus shifts elsewhere, things drift back to how they were

Why Add Structure to Problem Solving?

Structure promotes better…

- Thinking
- Understanding
- Communication
- Consensus



Learning by Doing

Effective learning is really what A3 thinking and problem solving is all about – learning what we can about the way work currently transpires to develop a new way to work

Advantages of team-based problem-solving:

- Those closest to the work know best how to perform and improve their jobs
- Application of a broader range of knowledge from multiple disciplines
- Broader, more creative solutions
- Greater chance of risk-taking
- Teams tend to be more successful in implementing complex plans
- Higher level of ownership of results

Team Make-Up

- Typically, problem solving A3 teams are made up of small groups (approximately 3-5 people)
- Having process owners or value-adders is a must
- A good cross-functional representation is recommended
- This allows the people closest to the problem to make an impact

About the A3 Report

Format

- No set format
- A3 (11.7” x 16.5”) size paper (Ledger in US-11 x 17)
- Some momentum to go to 8 ½ x 11 sheet
- Handwritten OK, even encouraged

Content

- Summary of a lot of work
- Should include as much graphical content as possible

Types of A3s

- Problem solving-most common
- Proposal (higher level)
- Status

What is an A3?

Title:		Fresh Eyes:		Subject Expert(s):	
Owner:		Team:			
PDSA Coach:					

Start Date:	
Revision Date:	
Revision #:	

Background / Current Conditions	PLAN	Analysis / Root Cause / Countermeasures (potential solutions)
	DO	Experiments to Root Causes
	STUDY	Study (Planned vs. Actual Results)
Goals / Targets	ACT	Act / Adjust

Print Date

What is an A3?

- **Background:** Clarifies problem, adds context
- **Current Condition:** Overview of the current process; establishes problem
- **Goal:** Specific targets to define success
- **Problem Analysis:** Overview of how you found the source of the problem (Root Cause)

A3 Problem Solving

Countermeasures:
Specific actions taken to solve the problem

Effect Conformation:
Specific proof that the CMs worked

Follow-Up Actions: Steps to provide deeper/broader improvements

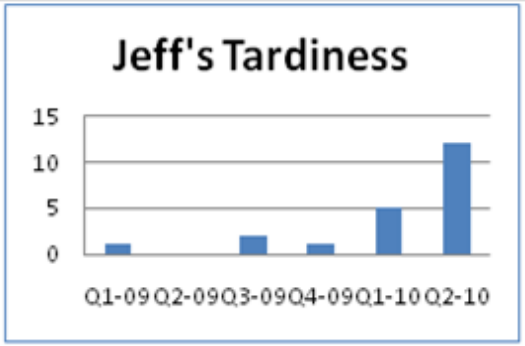
Start with a theme….

Theme: Reducing Jeff Hajek's tardiness

Background

Tardiness has become a problem, jeopardizing job

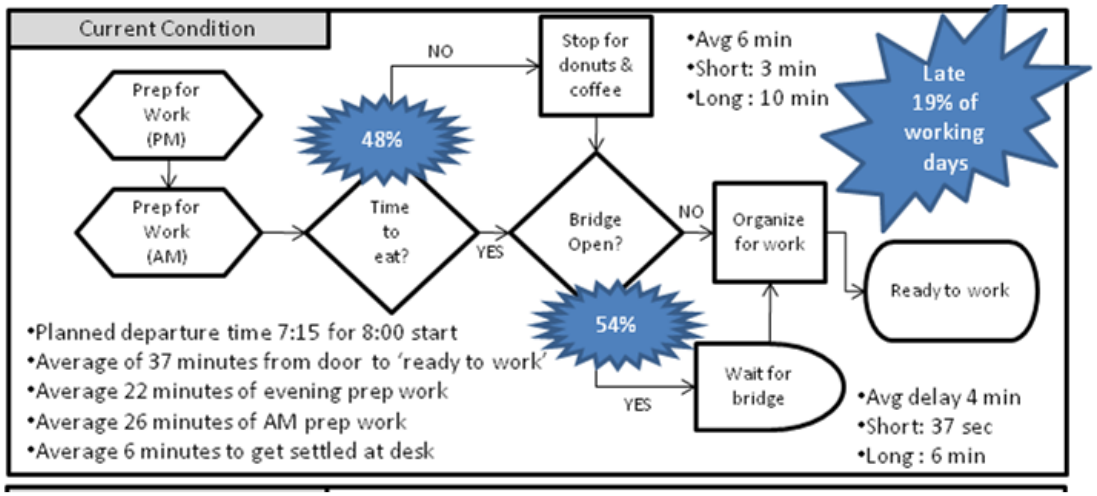
- Last year, attendance was good—4 tardies all year
- This year, starting in March, averaging one per week
- I want to minimize the time spent preparing and driving
- Tardy defined as not being ready to work at 8:00



Set the stage:

- What's going on? Why important?
- Match background to audience
- Link to corporate goals
- Use visuals!

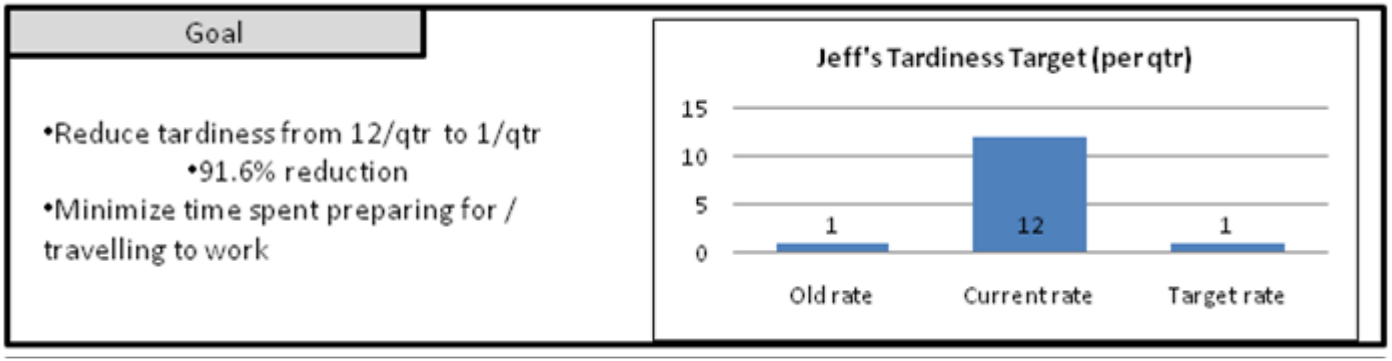
What is the Current Condition?



Lay out the facts:

- How are things done now?
- Clarify the problem (highlight specific issues; avoid assigning causes)
- Use visuals!

What is Our Goal?



Establishing targets:

- How is success defined?
- Establishes a standard
- Use visuals!

Find the Root Cause

Do the detective work:

- Find the underlying cause
- May require substantial data collection
- Confirm assumptions; talk to everyone

Countermeasures

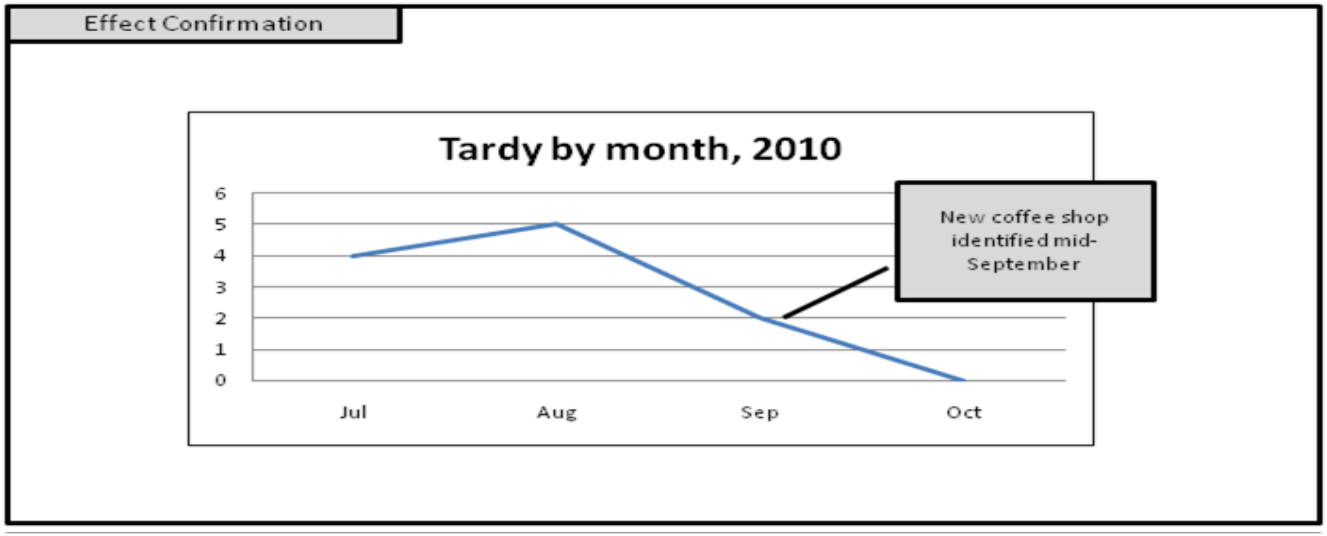
Countermeasures

Suspected Cause	Action Item	Responsible	Due	Finding
Stopping early for coffee eliminates option to skip.	Find new coffee shop closer to work.	Jeff H.	9/14/10	ID'ed and tested new shop. Decent brew, good donuts.

Improving the system:

- Decide how to remove the root cause
- May take many actions
- Probably action plans for each CM
- Cleary state why (cause), what, who, and when. Add results.

Effect Confirmation



Check your work:

- Confirm that the countermeasures work
- Should match predictions
- Use visuals!

Follow-Up Actions

Follow-Up Actions

Action Item	Responsible	Due	Status
1. Open donut shop on-site at office	John Doe	3/1/11	Scheduled start 12/1/10
2. Improve AM process to prevent skipping breakfast	Jeff H	1/31/11	Data collection in process

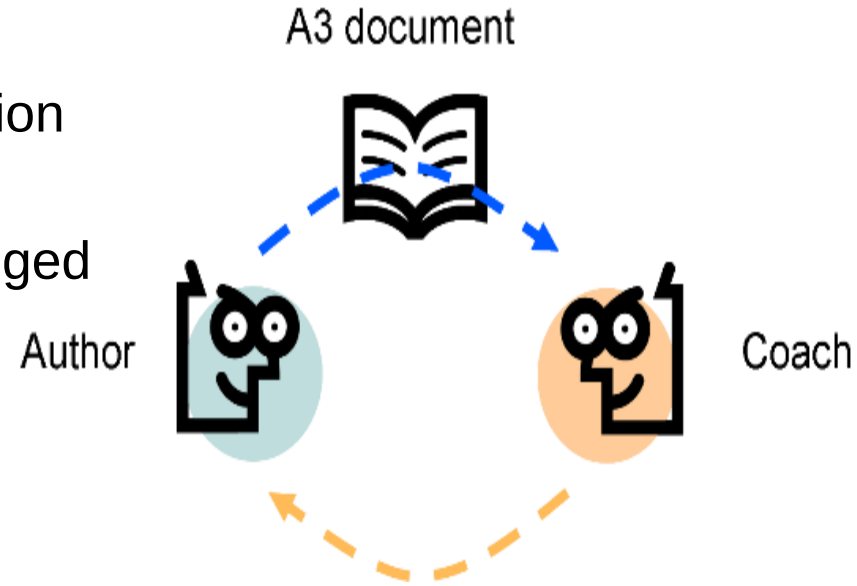
Don’t stop here…

- Decide if further improvements needed
- Decide how to spread the gains to other groups

Summary of A3 Thinking

Simple report built on sophisticated thinking:

- Objectivity and Openness
- Structured thinking
- Clear, concise communication
- Systems thinking
- Ideas reviewed and exchanged
- Continuous learning
- Teamwork and Alignment
- Process AND Results



Problem Solving One Way

When everyone in an organization has the confidence in one consistent way to solve problems, it is incredibly powerful.

Standard Work

What is Standard Work?

Standard Work is the most effective combination of activities that will **minimize** non-value added activities while **providing** high quality care.

Let me ask you a question, would you…

Add eggs to an omelet before cracking them?

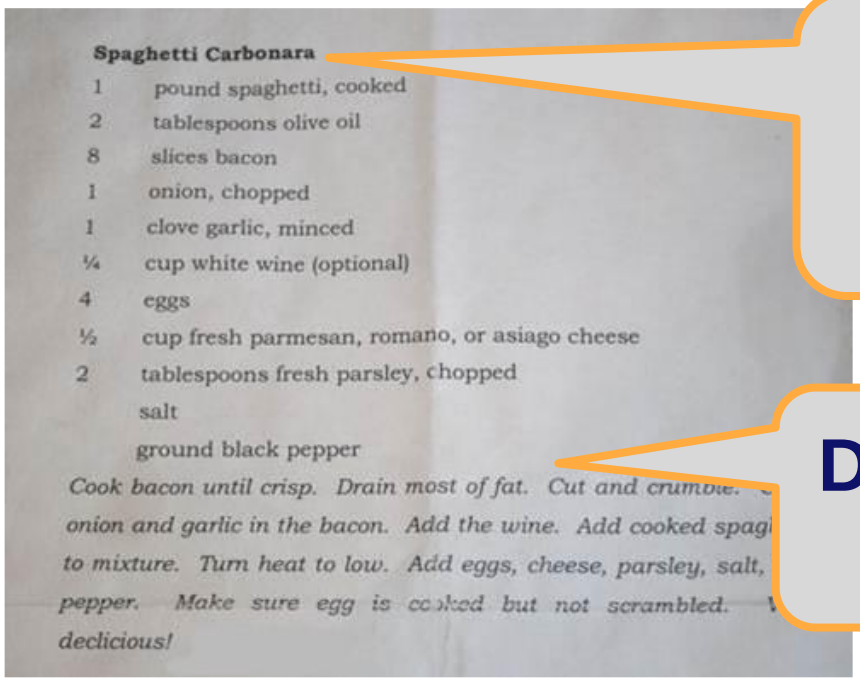
Serve multiple meals to your family?

Let too many cooks spoil the soup?

What is Standard Work?

Cooked based on need

Standard Work = Production Recipe



Spaghetti Carbonara

1 pound spaghetti, cooked
2 tablespoons olive oil
8 slices bacon
1 onion, chopped
1 clove garlic, minced
¼ cup white wine (optional)
4 eggs
½ cup fresh parmesan, romano, or asiago cheese
2 tablespoons fresh parsley, chopped
salt
ground black pepper

Cook bacon until crisp. Drain most of fat. Cut and crumble. ... onion and garlic in the bacon. Add the wine. Add cooked spagh... to mixture. Turn heat to low. Add eggs, cheese, parsley, salt, ... pepper. Make sure egg is cooked but not scrambled. ... delicious!

Precisely specified amounts of ingredients

Defined sequence to add ingredients

Why Use Standard Work?

We use Standard Work for the same reasons we use recipes.

Consistent Output

- Identical results every time
- Everyone makes it the same

Easier Planning

- Know meal requirements
- Know time to produce

Managing Materials

- Limits workspace size
- Know material needs

Definition of Standard Work

- Simple written description of the highest quality, most efficient way known to perform a particular process or task
- It describes the only acceptable way to perform the process or task
- The standard is expected to be **consistently** followed
- It's about approaching similar work in a similar manner – **formalizing the informal**

Ever hear this in your facility?

Standardized work doesn't always mean a long, detailed document like we have now. Do you ever hear statements like these:

"We haven't followed that process for years"

"We have a bunch of binders on the shelf"

"Our policies don't reflect reality"

"We only update our policies when the surveyors are coming"

Standardization

When 100% adherence to reliable methods occurs, you have standardization.

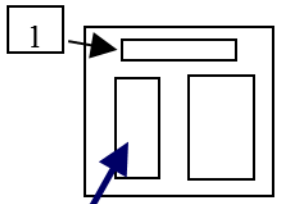
65

Example of Standard Work

Standard Work Instruction

Name of Process: _____

Task	Key Points	Time / Timing	Visual References
1. Enter Order	- Enter demographics (name, DOB, ht, wt,	2-4 minutes	
2. Prepare order	- Enter Rx info, enter physician/referral info	2-4 minutes	



Use diagrams or screen shots here

Standard Work Instruction

The Standard Work Instruction is used to carefully record standard tasks, standard sequences, tact time, and standard work in process, together with any safety and quality checks that need to be embedded in the workflow.

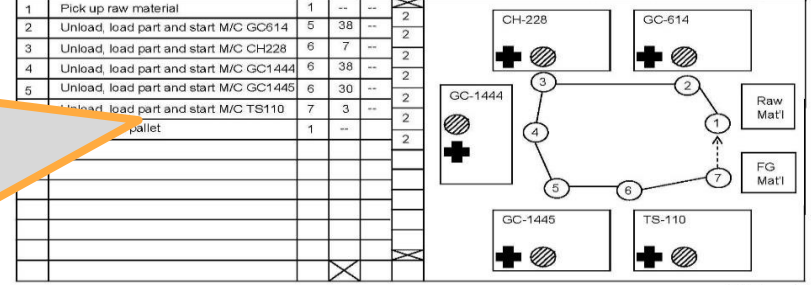
Standardized Work Chart

Acme Corp.
Standardized Work Combination Table
Date: By: Approved By:

Plant: Acme | Product: 8" Pinion Gear
Area: Gear Machining | Op. _1_ of _1_
Process: Gear cutting exercise | Pg. _1_ of _1_
Shifts: 2 | Takt Time: 46 secs. | Cycle Time: 46 secs.
Volume: 600

No.	Major Steps	MAN TIME	AUTO TIME	WAIT TIME	WALK TIME
1	Pick up raw material	1	--	--	2
2	Unload, load part and start M/C GC614	5	38	--	2
3	Unload, load part and start M/C CH228	6	7	--	2
4	Unload, load part and start M/C GC1444	6	38	--	2
5	Unload, load part and start M/C GC1445	6	30	--	2
	Unload, load part and start M/C TS110	7	3	--	2
	pallet	1	--		2

Working Sequence
Walking
Return to Start
Safety | SWIP | Quality



Slide 4-7

Standard Work provides a platform for improvement.

Standard Work – More Benefits

- Improved patient, resident, staff safety
- Enhanced process flow
- Clarifies roles
- Provides a good baseline or starting point for training new staff
- Reduces task ambiguity

Something to Think About

Without specific focus and standardization, processes tend to:

- *Degrade over time*
- *Performance decreases*
- *Increase in complexity*
- *Tasks become less coordinated*
- *Increased potential for errors*

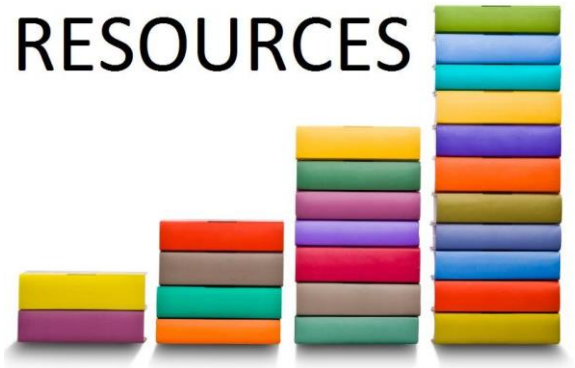
Standard Work Drives Improvement

Standard work functions as a diagnostic tool, or baseline for, exposing problems and inspiring continuous improvement.

It supports process standardization and further illumination of waste throughout the operations process.

It is a never ending process!!!

Documents to Review



Lean Mini-Project Overview

Lean Project Charter Template

- 5S Process Document
- Lean Healthcare Metrics Guide
- Quick Guide to Lean Metrics
- Quick Guide to A3 Problem Solving

Next Steps - Lean Project Preparation

Following today's webinar, work with your team to identify an appropriate Lean project and complete a Lean Project Charter using the Lean Project Charter Template.

Individualized support is available through Moodle using the Technical Assistance forum tool located at the top of the course homepage.

Due: Tuesday, March 8, 2016, 5:00 p.m. CST

Thank you!

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