County of Los Angeles
Registrar-Recorder/County Clerk

Lean Six Sigma

Project Management in the Public Sector

Presenter Background

Alexander Ogunji, Quality Assurance Manager & Lean Six Sigma Program Director

- 10 years of County Service
- Lean Six Sigma Program Director since 2014
- Lean Six Sigma Master Black Belt
- Has provided Lean Six Sigma Project Management Consultation for several projects across the County

Agenda

- Lean Six Sigma Program’s Mission & Vision
- What is Lean Six Sigma?
- Lean Six Sigma Belt System
- LSS Methodology: Key Concepts
- Process Improvement Idea Boards

Lean Six Sigma Program

Mission:

Develop a culture in the workplace that cultivates the cycle of continuous improvement by using Lean Six Sigma tools.

Vision:

Inspire and empower all staff to continuously improve operations by challenging the status quo.

Organizational Structure & Roles

DEPARTMENT HEAD

Views completed process improvement project presentations.

CHIEF DEPUTY

Receives process improvement updates from Champions and views completed project presentation.

CHAMPION

Ensures that all process improvement opportunities are given a chance to be completed and they remove any obstacles or give any approvals needed at the Division level.

CONSULTANT

Provides project support to all Idea Boards and ensures the application of the DMAIC methodology for process improvement projects.

FACILITATOR

Conducts bi-monthly Idea Board meetings to review and discuss identified problems, facilitate project selection and provide updates on project progress.

Program Achievements

In 2011, Dean Logan integrated the Lean Six Sigma Program to RR/CC to enhance customer service, accountability, accuracy, and efficiency.

Major LSS Program Wins

2014

RR/CC trains 80% of employees at Yellow Belt level

2016

95% of RR/CC's Sections have established Idea Boards

2017

Quality & Productivity Commissioner's Legacy Award: Lean Six Sigma Program

2019

Gold Eagle Award: Moving Families from the Hotline to the Helpline

2019

Inaugural Countywide Continuous Improvement Summit

LSS Training Countywide

28 Participating County Departments

- **Yellow Belt Level: Over 3,000 staff trained**
- **Green Belt Level: Over 800 staff trained**
- **Black Belt Level: Over 40 staff trained**

What is Lean Six Sigma?

Lean & Six Sigma

- **Identify & Eliminate**
  - Waste
  - Processes
- **Optimize**
  - Resources
  - Streamline
- **Repeatable**
  - Customer Experience
  - Customer Value

LEAN

+

SIX SIGMA

The History of Lean & Six Sigma

- Lean begins at Toyota
- Taiichi Ohno, Production Engineer & Executive Vice President
- Toyota Production System (TPS)

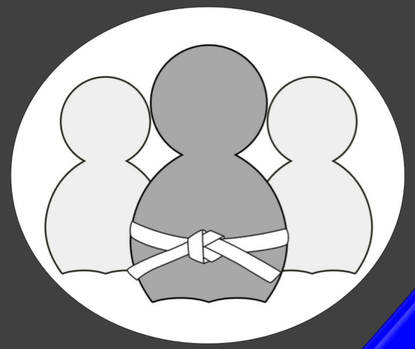
1940 1950 1960 1970

- Six Sigma at Motorola
- Bill Smith, Engineer
- 1988 Baldrige Quality

- Lean Six Sigma is introduced to RR/CC

1980 1990 2000 2010

Lean Six Sigma Belt System



Champion

Senior leader trained to recognize project opportunities and sponsor/support projects.

MASTER BLACK BELT

They are responsible for the overall program management and supporting Black Belts.

BLACK BELT

Trained to lead projects requiring collaboration across multiple departments. They have expertise in the DMAIC methodology and root cause analysis.

GREEN BELT

Trained to lead projects requiring collaboration across multiple sections. They learn how to understand, identify and resolve variation and defects.

YELLOW BELT

Trained in overall DMAIC methodology and basic problem solving.

LSS Methodology: Key Concepts

The 8 Wastes

Which wastes can you identify in the process?

Remember "The 8 Wastes", by using the acronym - DOWNTIME			
D  **Defects:** Efforts caused by rework, scrap, & incorrect information.	**O**  **Overproduction:** Production that is more than needed or before it is needed.	**W**  **Waiting:** Wasted time waiting for the next step in a process.	**N**  **Non-Utilized Talent:** Underutilizing talents, skills, & knowledge.
T  **Transportation:** Unnecessary movements of products & materials.	**I**  **Inventory:** Excess products & materials not being processed.	**M**  **Motion:** Unnecessary movements by people (e.g., walking).	**E**  **Extra-Processing:** More work or higher quality than is required by the customer.

DMAIC

DEFINE

- Identify the problem and its impacts

MEASURE

- Collect Data related to the problem(s)

ANALYZE

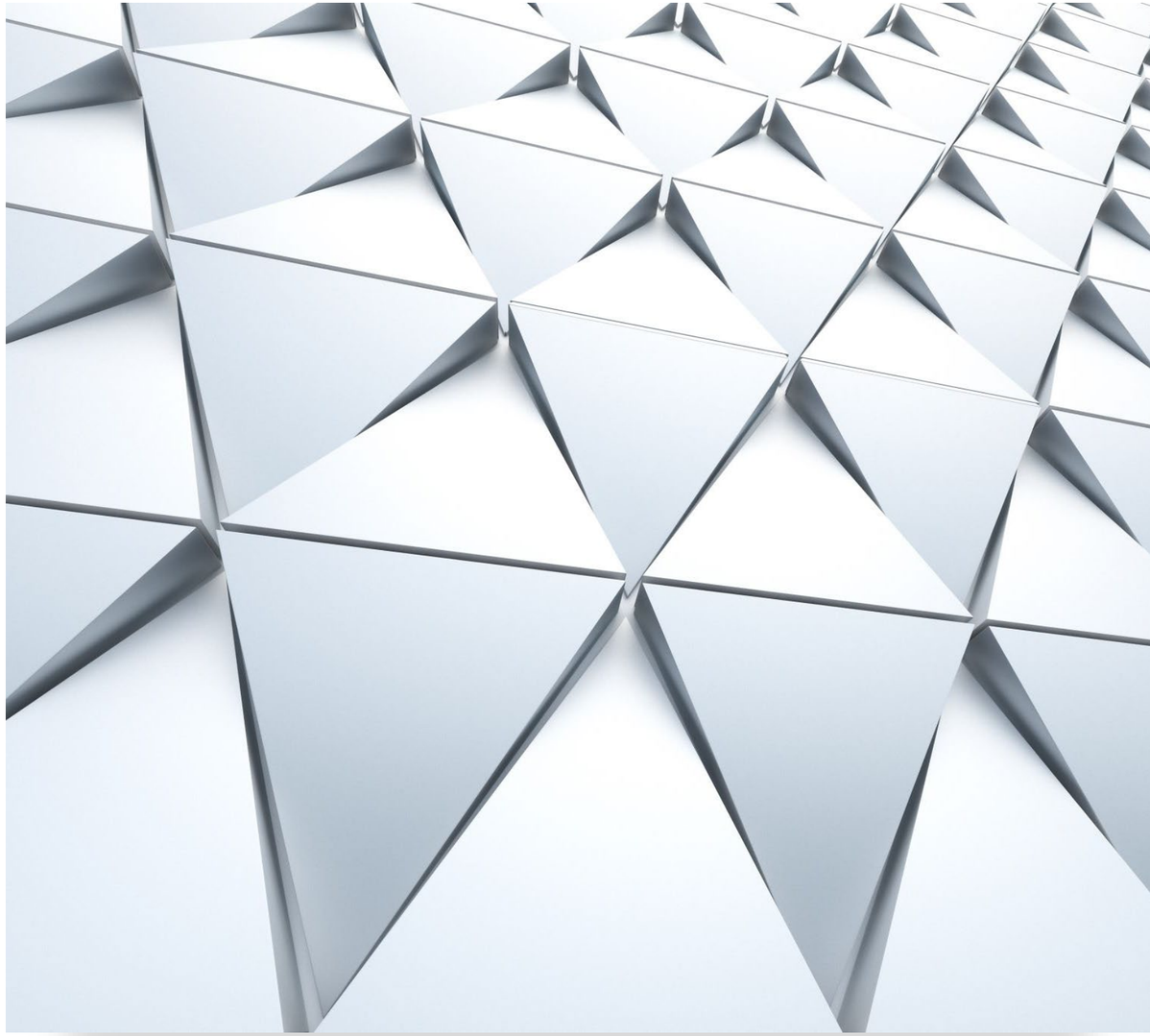
- What is the root-cause? Validate your hypothesis using data.

IMPROVE

- Based on data and analysis, develop solutions(s)

CONTROL

- Create a plan to sustain improvements for future process owners to uphold



Define: Identify the Problem & Impact

Project Consultants utilize this tool to manage the scope and goal of all Green Belt projects

Approximate or preliminary data should be included

Include measurable goal (i.e., cycle time, defects)

Improving Timely Access to Initial Medical Exams for Foster Youth (BOS)

Los Angeles County Registrar-Recorder/County Clerk

DEAN C. LOGAN
Registrar-Recorder/County Clerk

PROJECT CHARTER: Increasing timely access to IMEs

PROBLEM STATEMENT:

State regulations (CDSS MPP Division 31-206.361) and local policies (DCFS Policy Manual 0600-500.00) require that children newly detained by the Department of Children & Family Services (DCFS) receive an Initial Medical Exam (IME) at the six County Medical Hubs within 30 days of detention. However, preliminary analysis has shown that it takes an average of 55 days for children to receive an IME, with an average cycle time range of 40 to 79 days across the six Hubs.

GOAL STATEMENT:

Reduce the cycle time for DCFS' newly detained children receiving IMEs at the County Medical Hubs from an average of 55 days to under 30 days. Establish a transparent process to report quarterly on compliance with the IME timeliness standard. Ensure staffing resources are allocated to meet the demand for IMEs at each of the six County Medical Hubs. Streamline and improve workflows at the Medical Hubs to improve the IME cycle time.

BUSINESS CASE AND BENEFITS:

We must ensure that the County has baseline health information for DCFS-involved children when they enter our care so that we can meet the health needs of these children. If the County does not remedy this problem, DCFS-involved children may experience poor health outcomes because their health needs were not addressed in a timely manner, which could negatively impact overall child well-being and foster care placement stability.

The potential benefits to the County include reduced agency liability, avoided costs to the county, reduced redundancies and increased productivity at the Medical Hubs, and improved outcomes for DCFS-involved children.

SCOPE IN:

- Establish or clarify IME policies and procedures
- Create data tracking and accountability system
- Standardize hub workflows
- Realign resources to meet each hub's IME demand

SCOPE OUT:

- State regulations for IME timeframe
- Caregiver behavior in taking children to IME appointments
- Health insurance/Medi-Cal billing requirements

TEAM LEADS

Green Belt Project Team from the Office of Child Protection
- Minsun Meeker, Barbara Spyrou, Carrie Miller

Subject Matter Expert Team Members - Dr. Shannon Thyne (Department of Health Services), Helen Berberian (DCFS), Anna Long (Department of Public Health), Anabel Rodriguez (Department of Mental Health), Gita Cugley (DMH Consultant)

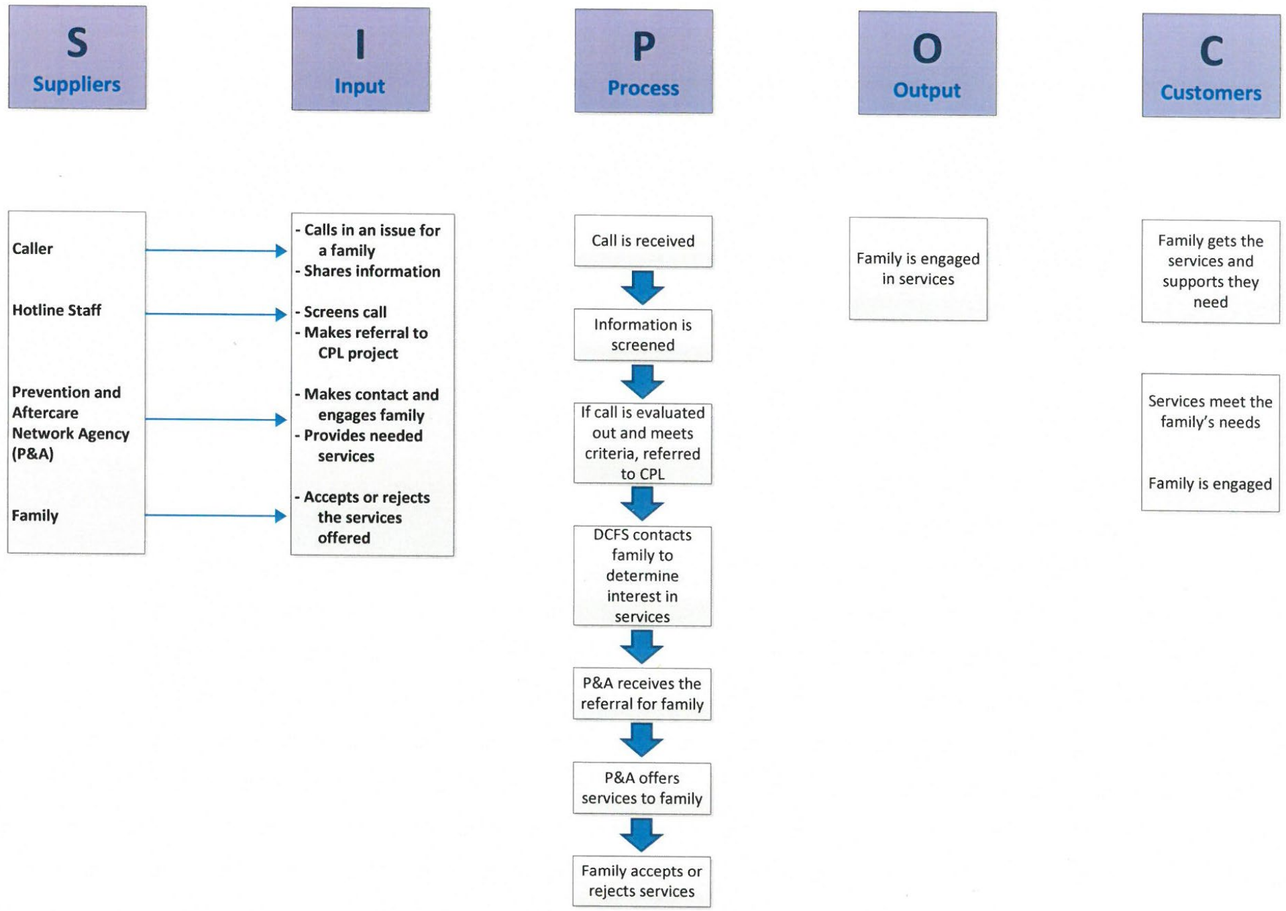
Resource Team Members - Hub Directors from individual hubs; DHS, DCFS, DPH, DMH, and Health Agency leadership

Process Discovery

- A **SIPOC map** provides a high-level view of a process
- Teams use this as a roadmap for their *gemba* walks

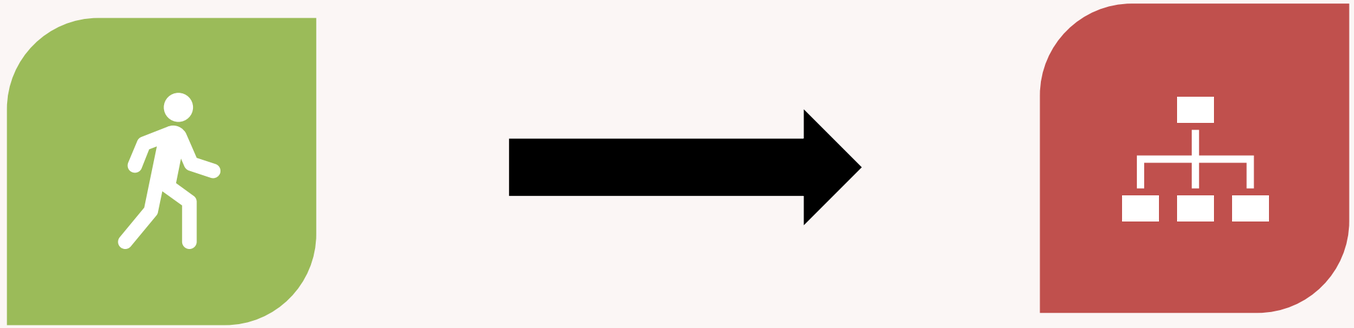
SIPOC MAP

Moving Families from the Hotline to a Helpline (BOS)



Gemba Walk & Mapping the Process

Gemba: Japanese term meaning ‘the actual place’



GEMBA WALKS WITH SUBJECT MATTER EXPERTS **P**ROVIDE TEAMS THE ABILITY TO SEE THE PROCESS FROM START TO END

A **DETAILED PROCESS MAP** ALLOWS TEAMS TO BETTER UNDERSTAND AND ANALYZE THE PROCESS IN ITS ENTIRETY

Gemba Walk

Gemba walks prove or disprove our assumptions about a process

GEMBA WALK RULES

Gemba is a Japanese term meaning: the 'real place'

TEAMS SHOULD ABIDE BY THE FOLLOWING:

Introduction.

Your subject matter expert (SME) may never have participated in a gemba walk. It is important to mention the purpose of a gemba walk, namely, to observe and learn about the process from a SME. It is not a test!

DOCUMENTATION

Detailed note taking of each process step is key to producing a detailed process map.

With the exception of the lead interviewer, all team members should take detailed notes of process steps and commentary from the SME. Following the gemba walk, all notes should be used to create a detailed process map.

DATA

Obtain metrics from SME.

Prior to gemba walk, metrics should have been identified for the project. During gemba walk, inquire where or how data could be obtained. Additionally, collect anecedotal evidence from SME (i.e. cycle time).

BE A GOOD LISTENER

Refrain from educating, informing or correcting the SME.

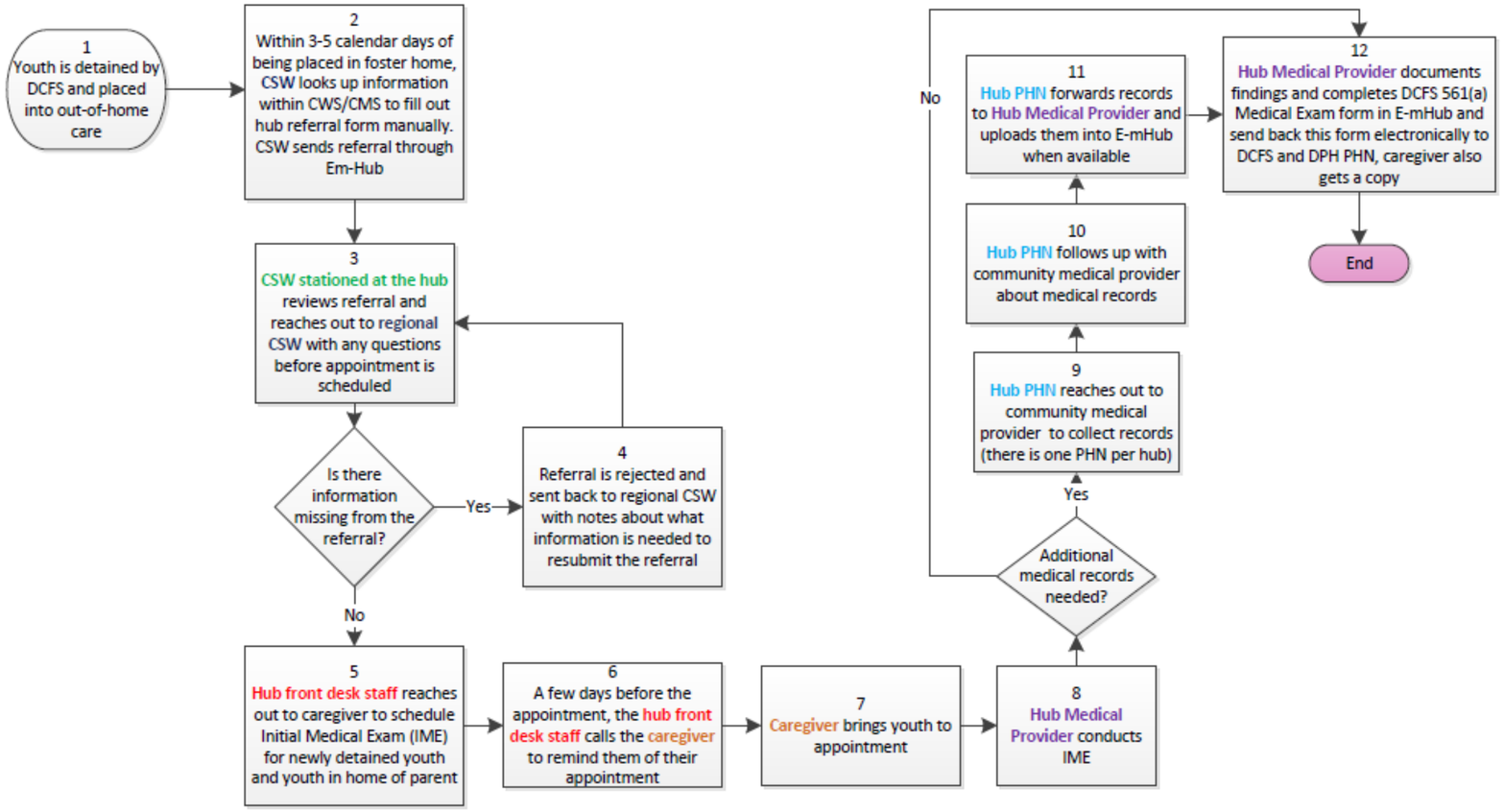
If a team member has additional knowledge or information regarding the process, discuss during a separate project meeting. Be accepting of any ideas, suggestions and/or recommendations, even if they may not be feasible.

Document the Current Process

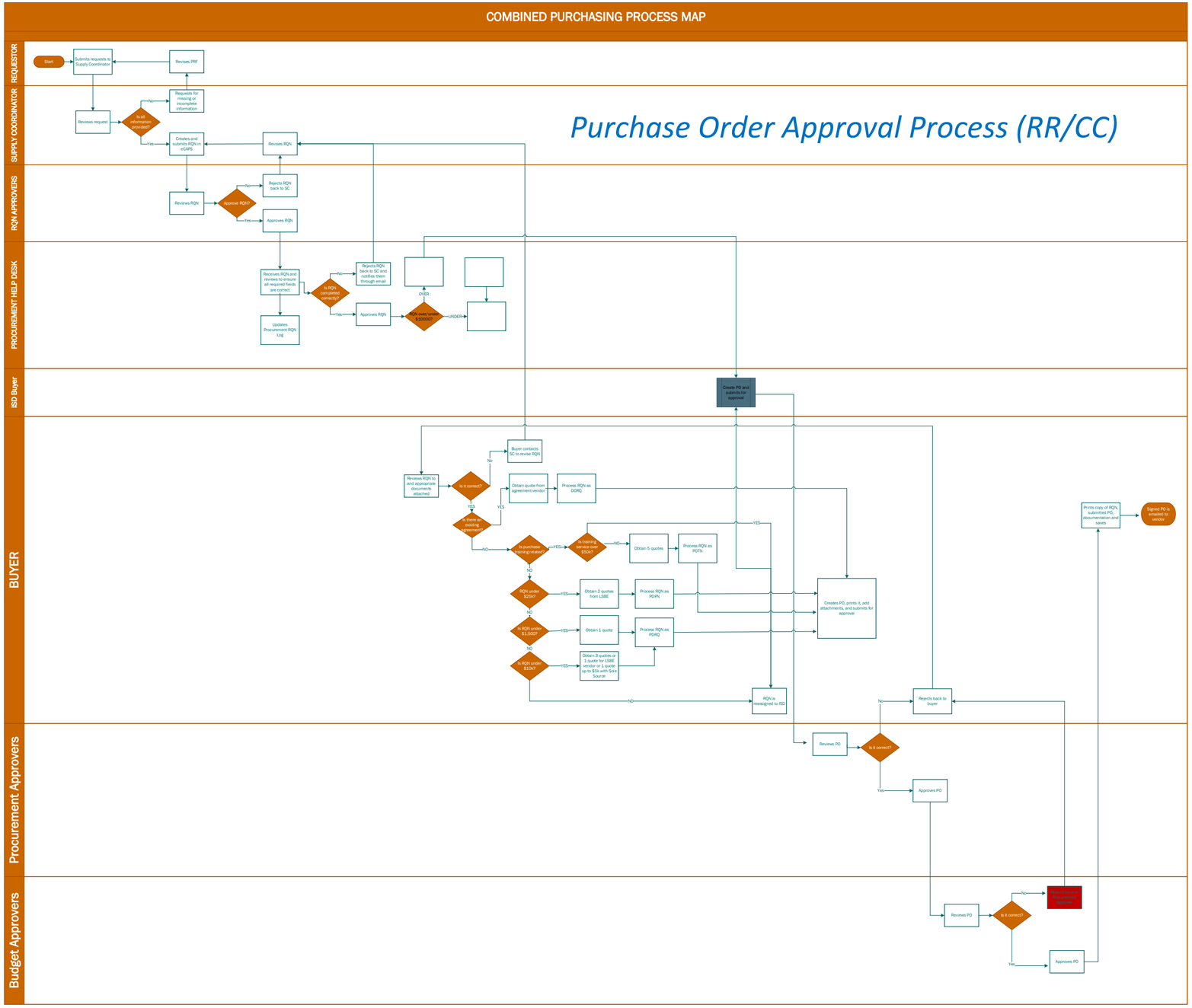
It is critical to document all steps observed during the *gemba* walk(s). Processes may vary by *Subject Matter Expert (SME)*, therefore multiple *gemba* walks may be needed.

Workflow Diagram

Improving Timely Access to Initial Medical Exams for Foster Youth (BOS)



Once a detailed map is completed, can your team identify any of the 8 wastes?



Swimlane Map

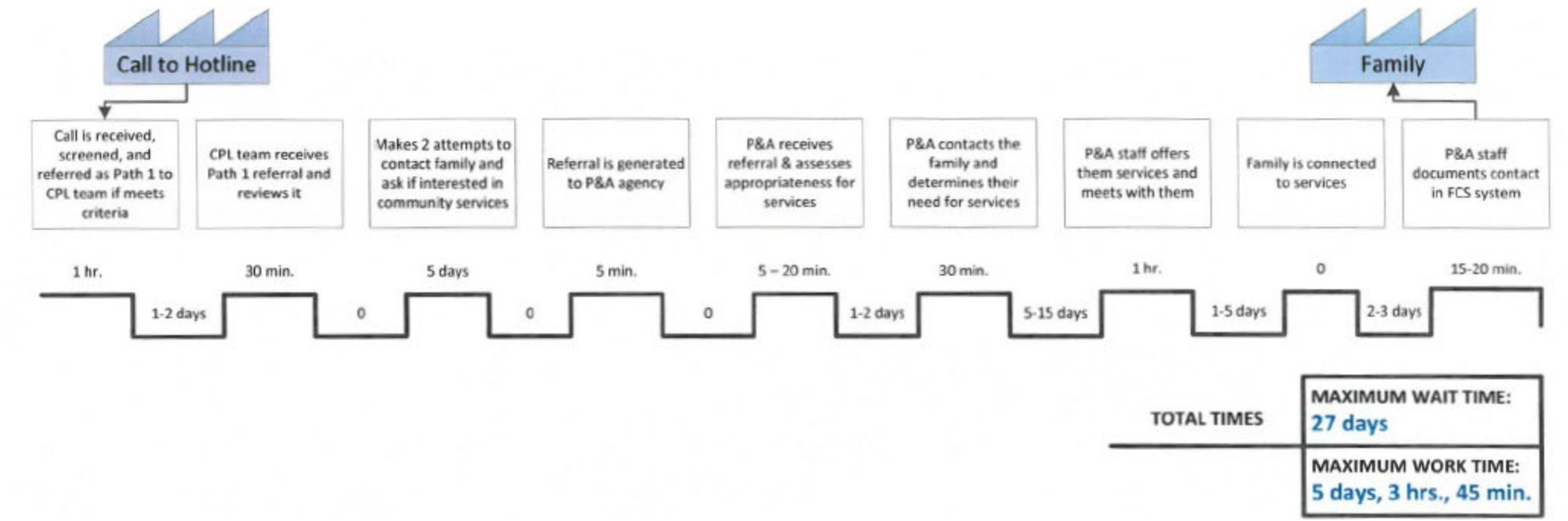
This map displays process **handoffs** and other potential wastes such as **non-value add process steps.**

Value Stream Map

This map captures the **work time** and **wait time** of each process step and handoff

- Ideal for projects seeking to reduce cycle time, also known as processing time.

Moving Families from the Hotline to a Helpline (BOS)



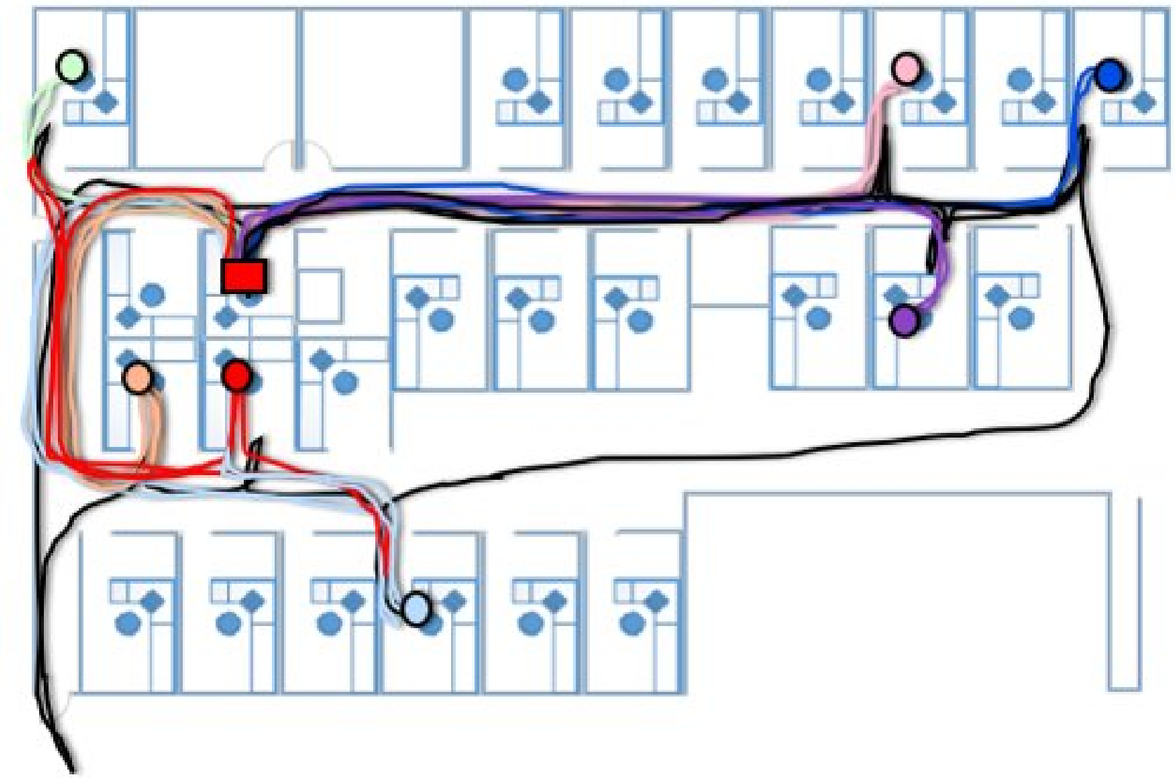
Spaghetti Map

A visual representation of the physical flow of materials, paper and people through the tasks (or) activities of a process

Hourly Voter Turnout Reporting Process (RR/CC)

This visual depiction of **Motion** in a process helps understand:

- The importance of a layout
- The current layout
- How a layout affects the process
- How to change a layout to reduce wasteful activities such as inefficient flow



Define Checklist

- Are all elements of the Project Charter completed?
- Has a high level and detailed map been created of the current state?
- Have stakeholders been identified and informed of the project charter?

Measure: Collect data Related to the Problem

Data Collection Planning

- Identify the baseline measurements
- Where is data stored?
- Who can provide the data?
- How will the data be extracted or collected?
- Does data need to be collected manually?
- How will data be displayed?

Baseline Data

- When collecting baseline data, project managers ensure Operational Definitions are created
- **Operational Definition:** A clear, understandable description of what's to be observed and measured, such that different people taking or interpreting the data will do so consistently

Improving Timely Access to Initial Medical Exams for Foster Youth (BOS)

Average number of days for CSWs to make IME referrals was **10 days** –exceeding the DCFS policy for CSWs to make IME referrals within **3-5 days** for foster children

Inadequate staffing at certain Hubs due to resource Misallocation and vacancies

Hub	2017-18 # of IMEs	# of Medical Providers*
ESGV	973	2
HDRHC	908	1.5
MLK	873	7
LAC+USC	1,174	6
Harbor-UCLA	771	6
Olive View-UCLA	685	6

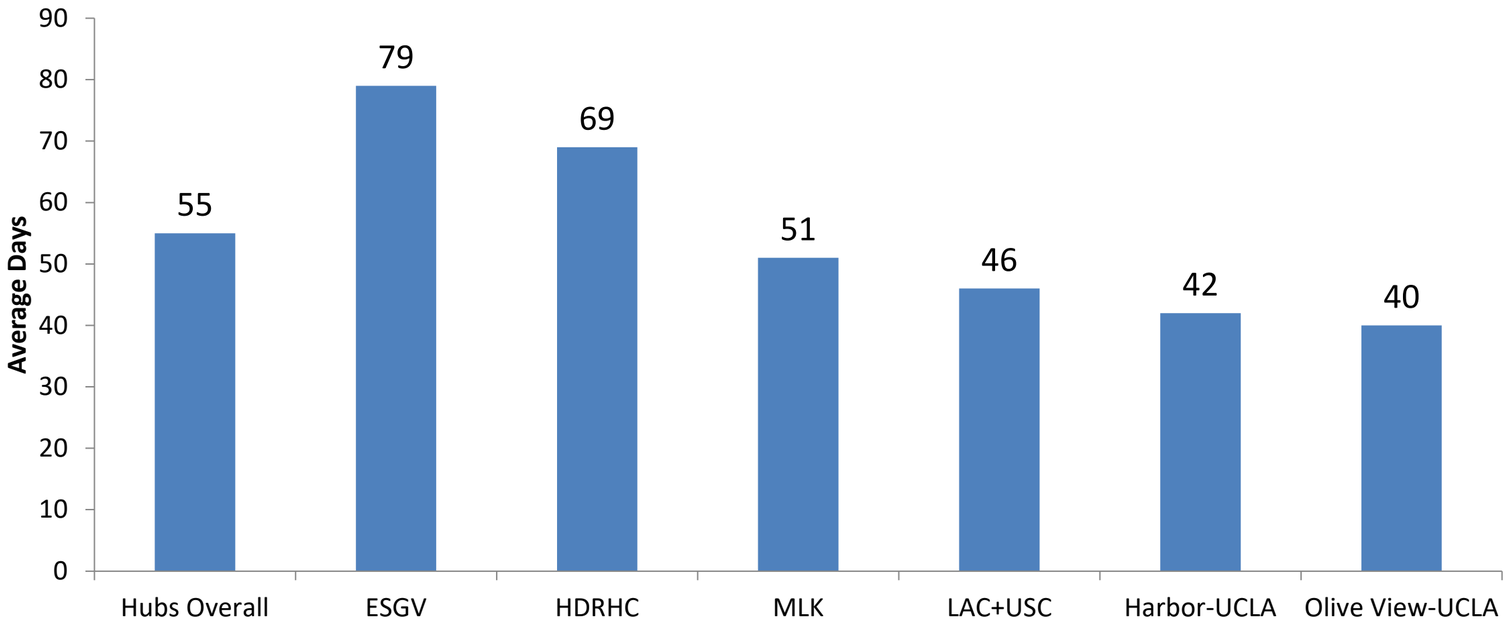
* This count reflects medical providers who perform IMEs; these providers also provide other services, like continuity of care visits. Some hubs have additional medical providers who specialize in forensic medical exams.

Sources: E-mHub, 2nd Quarter, 2017; E-mHub, 2017-18 IME count; DHS for staffing

Baseline Data

- Graphically display data collected for further analysis
- Collect data that will pinpoint the patterns and causes of the problem(s), also known as ***Stratification Factors***

Average number of days between detention and Initial Medical Exam (IME) completion was **55 days**, with a range of **40 to 79 days** across the 6 Medical Hubs – far exceeding the **30-day** requirement for foster children



Cycle Time Example

Electronic Signature Work Order Approval Process (CEO)

Phase	Work Time	Wait Time	Total	Proportion
Phase I – Getting Contractor Signature	2 hr. 5 min.	167 hr.	169 hr. 5 min.	**65%**
Phase II – Getting County Risk Manager Signature	1 hr. 8 min.	54 hr. 30 min.	55 hr. 38 min.	**21%**
Phase III – Sending Work Order to Contractor	46 min.	36 hr. 20 min.	37 hr. 5 min.	**14%**
Total	**3 hr. 59 min.**	**257 hr. 50 min.**	**261 hr. 49 min.**	**100%**
Proportion	**1.5%**	**98.5%**		

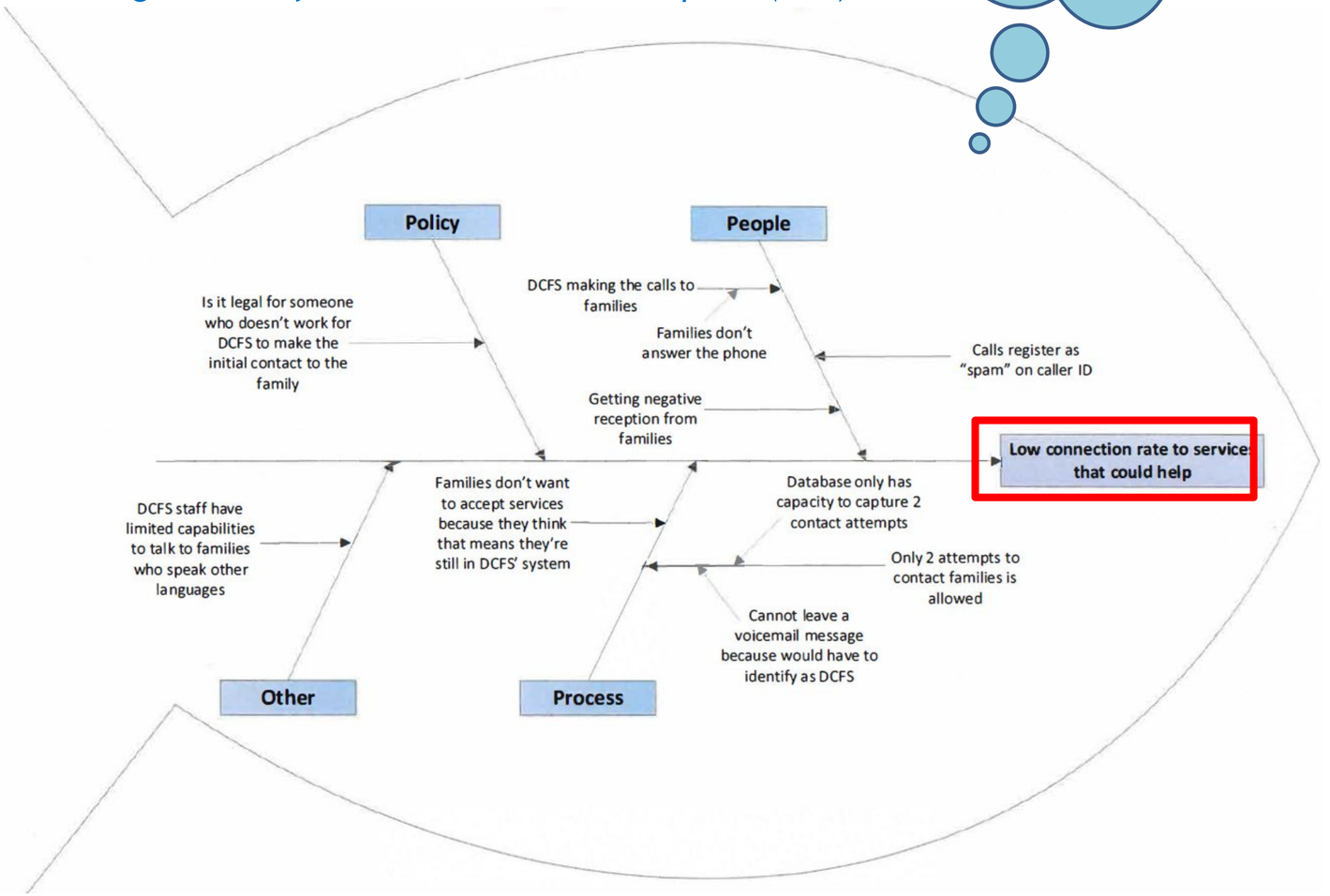
Measure Checklist

- Are baseline measurements selected?
- Has a data collection plan been developed?
- Has the data been collected?
- Did you graphically display the data and do baseline calculations?

FISHBONE DIAGRAM

Which issues should be solved to achieve impactful results?

Moving Families from the Hotline to a Helpline (BOS)



Analyze: Identify the root-causes

Project Consultants utilize root-cause analysis tools to effectively eliminate and/or reduce the main problem

Brainstorm the Root-Causes

The 5 Whys: The practice of asking the question ‘why?’

- Helps identify the root cause of a problem
- Determines the relationship between different root causes of a problem
- Usually carried out with a group of people that know the process
- No special technique is required

Develop Hypothesis for Root-Causes

- For every possible root cause, there is a hypothesis, theory or opinion to be **researched, proved, or disproved**
- Clarity around the hypothesis is important in collecting the appropriate data to prove or disprove it
- Select which possible root causes the team will research and develop a hypothesis statement for each one

Accident Reporting Project (RR/CC)

Green Belt Project Management

Hypothesis Statement(s) – Accident Reporting Project (Risk Management)

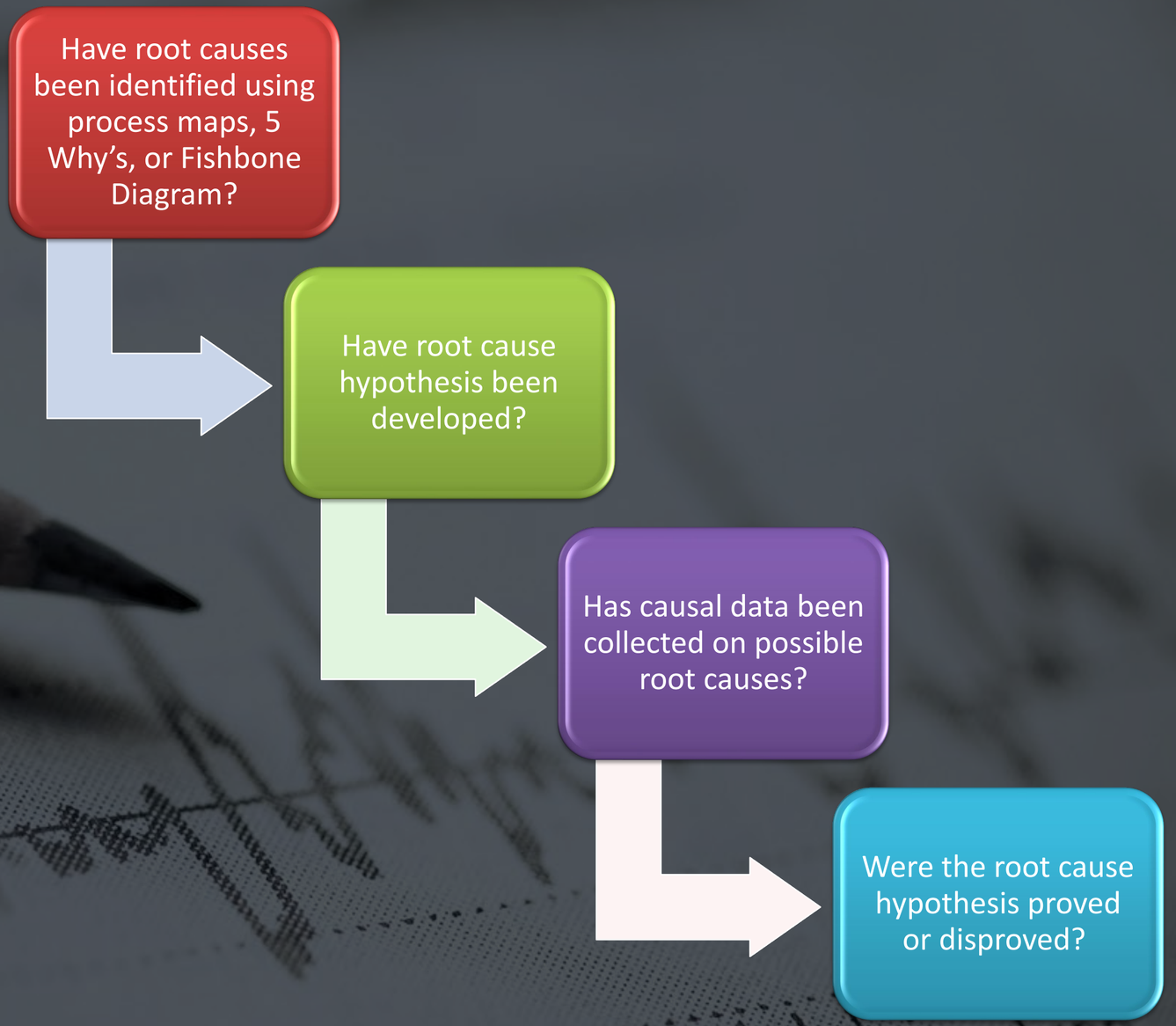
Possible Root Cause (x)	Hypothesis
`	People assigned to areas they are not familiar making it more likely for accidents to happen. Bar and pareto, number of accidents and whether the employee is familiar with the location
Work Culture	Management do not report incidents to Risk Management immediately if the incident is minor or near miss. Number of minor injuries and incident number of major accidents vs claims filed for each type Pulling accident vs. years of service, bar graph (normalize)
Lack of training	There is no detailed incident training given to staff outlining the process for reporting making temp employees more susceptible under report. Number of accident vs new staff with no county employment record. Bar graph
Lack of buy-in reporting incidents	Manager don't report minor incidents or near misses because of competing priorities especially during the election. Compare the number of incidents reported during the election and those no during the election Bar graph month vs incident reported by sections
Lack of Reporting	Risk Management receives claims from rental companies for damages that are not reported by the sections. Comparing claims filed by the rental company to reports by supervisors will help determine the difference between actual incidents and reported incidents. Bar Graph

Hypothesis Statement

Confirm hypothesis with causal data:

- Collect or obtain data to prove or disprove hypothesis statements
- If hypothesis is proven true, the root-cause(s) have been identified
- Correlation does not always mean causation!

Analyze Checklist



Improve:
Develop solutions based on data

1. Create Future State Map
2. Brainstorm & Prioritize Solutions
3. Obtain Stakeholder buy-in
4. Implementation
5. Capture Improvement Data

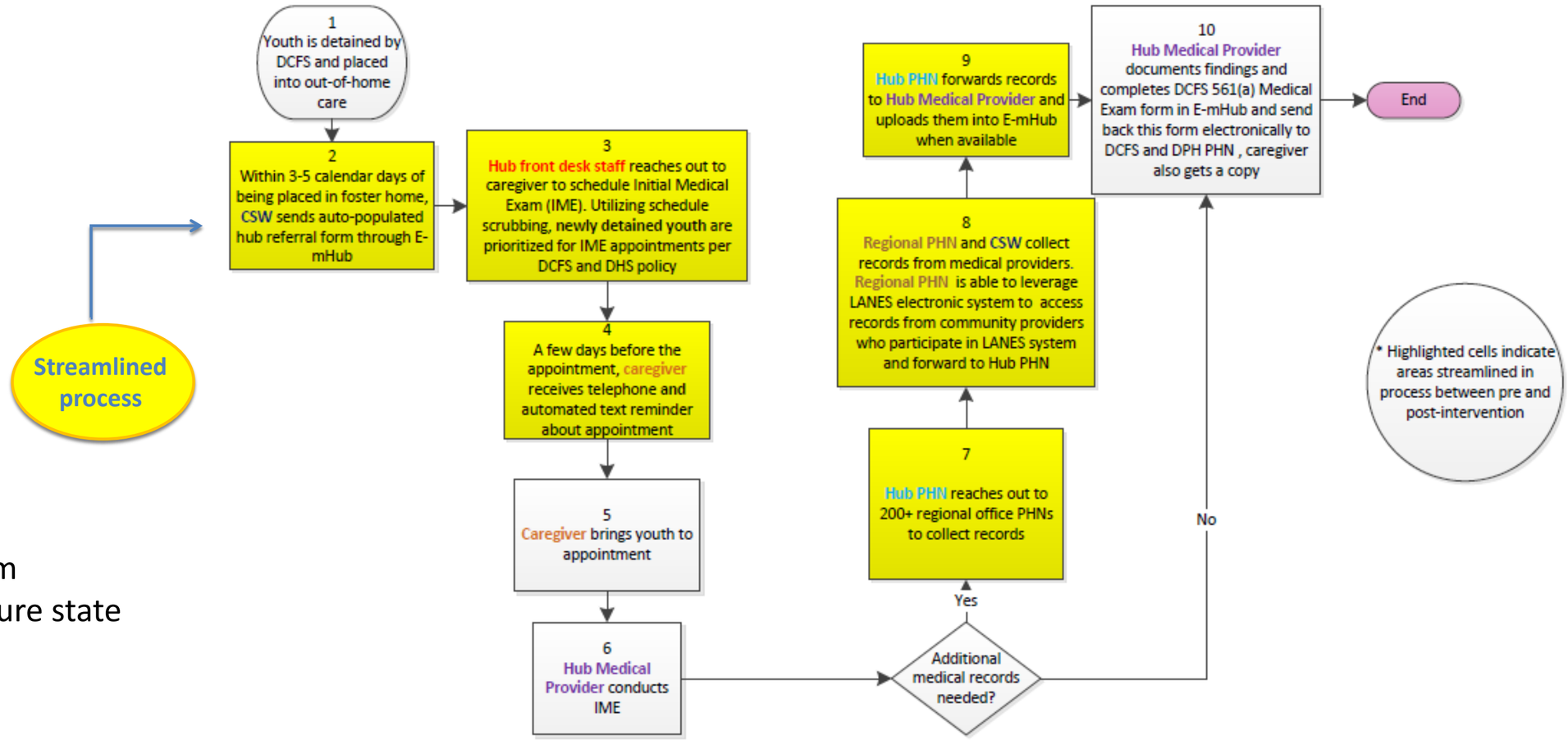
Develop Future State Map

A future state map should consider the following:

- Eliminate unnecessary handoffs
- Eliminate non-value add steps
- Improve process flow
- Refer to 8 Wastes – Are they present?

Obtain agreement from **Stakeholders** once future state map is developed

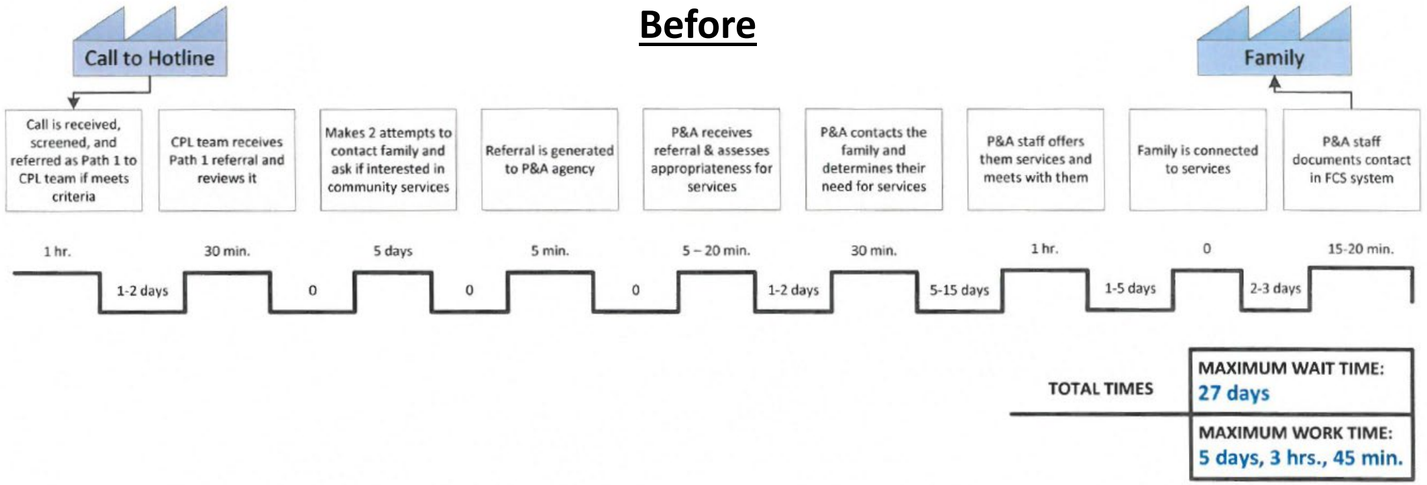
Improving Timely Access to Initial Medical Exams for Foster Youth (BOS)



Future State Value Stream Example

Moving Families from the Hotline to Helpline (BOS)

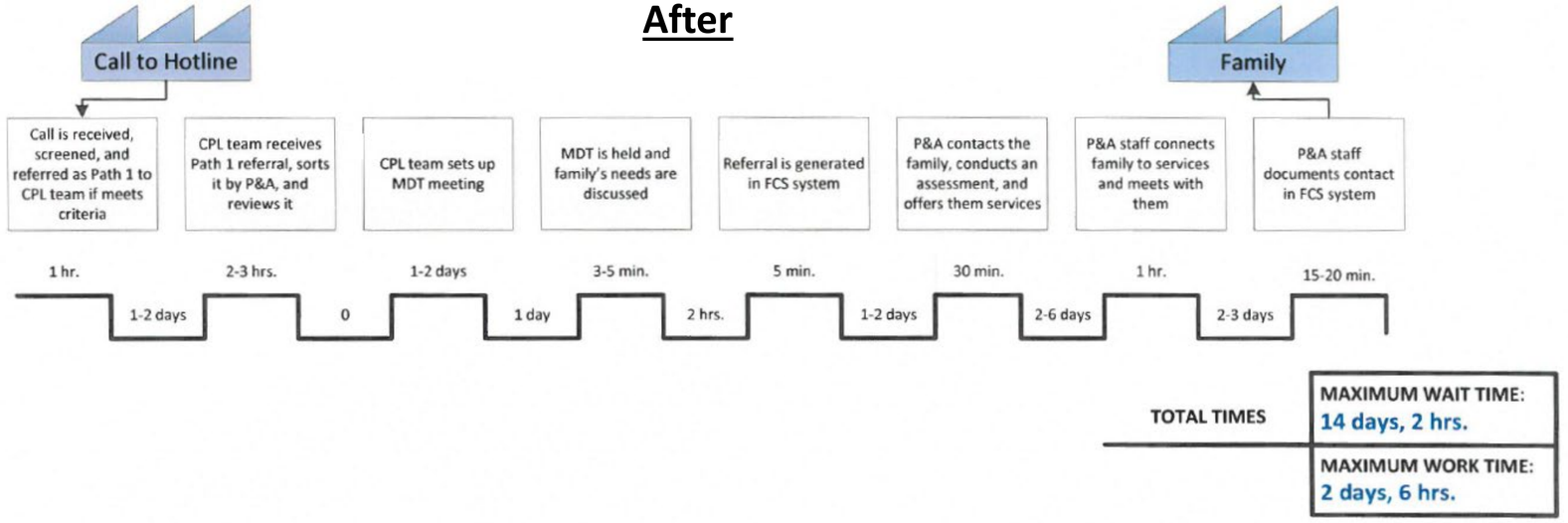
Before



OLD PROCESS

NEW PROCESS

After



Brainstorming *Lean* Solutions

Project Managers involve the subject matter experts, who will be impacted by solutions implemented

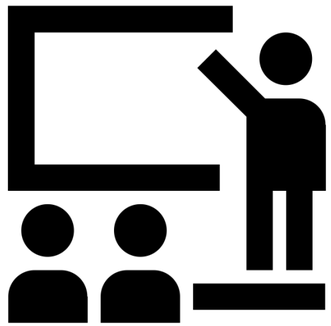
- Co-Location
- Standard Work
- Cross-Training
- Parallel Processing
- Poke Yoke

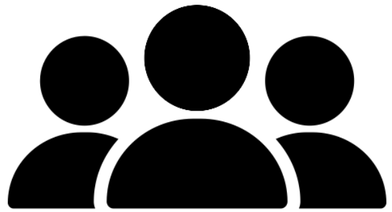
Implement Solutions

Staff redeployment

Increased the number of medical providers at specific hubs by:

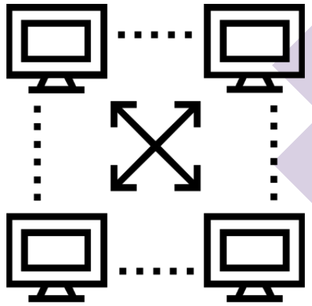
- Hiring additional staff
- Redeploying staff from lower volume to higher volume hubs





Implemented technology solutions

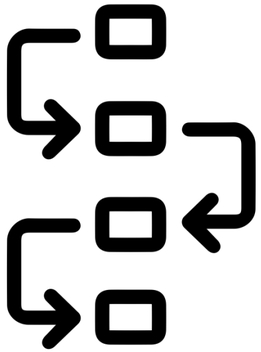
- Automated IME referral form for CSWs so that it auto-populates with critical case information
- Secured access to LANES, an electronic health information exchange, for PHNs to streamline access to medical records



Cross-trained staff

Trained social workers on:

- IME referral timelines (i.e., 3-5 days) and
- Target population so that only newly detained children (~10,000/year) are referred, rather than a larger pool of DCFS-supervised children (~34,000/year)



Streamlined workflows

- Implemented schedule scrubbing protocol at hubs so that IME appointments are prioritized
- Clarified roles between the 6 hub PHNs and 200+ regional office PHNs, for medical records gathered to be transferred from hub to regional office PHNs

What were the Results?

If the results were not what the team anticipated, go back to the ‘Analyze’ phase and introduce new solutions and/or investigate the outcomes further

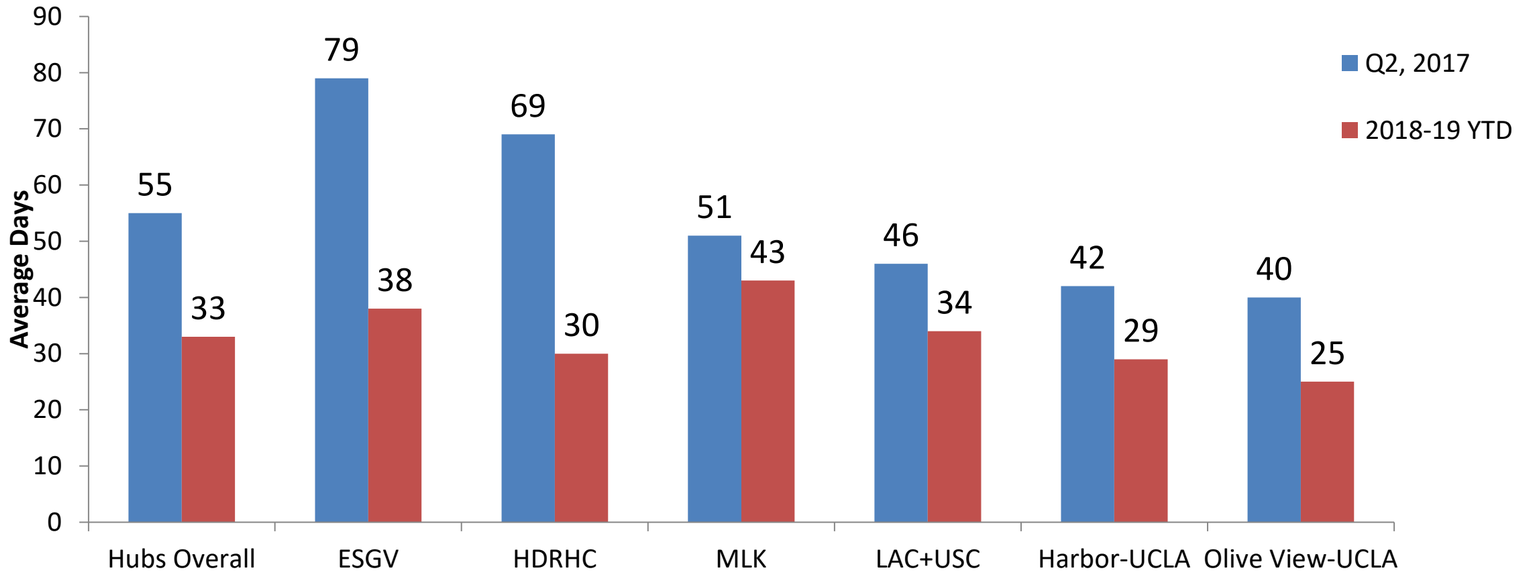
Improving Timely Access to Initial Medical Exams for Foster Youth (BOS)

IME Referral Cycle Time Reduction

- **10 days** to **7 days**

Cycle Time for Foster Youth to receive IME Reduction

- **55 days** to **33 days** (see bar chart below)



Control: Create a Plan to Sustain Improvements

1. Assign process owner
2. Develop process control measures
3. Project documentation
4. Project communication & replication

Process Ownership

Eventually the project team will disburse, and the accountability for maintaining the process control system shall be directed to the process owner

Early identification of the process owner can help solidify that the control system will be enforced

The process owner should participate in development of the plans

Control Plan

Sustaining the Improvement

Improving Timely Access to Initial Medical Exams for Foster Youth (BOS)

Monitoring Plans

- A process to track if the measurement and process stays in control

Response Plans:

- A contingency plan if process performance drops

- Requesting additional medical hub staffing and expanded clinic hours to build further capacity
- Continue to cross-train CSWs on IME policies by institutionalizing trainings at the DCFS University
- Further clarifying multidisciplinary medical hub staff roles and documenting IME protocols
- Tracking IME timeliness data through Hub Data Dashboard

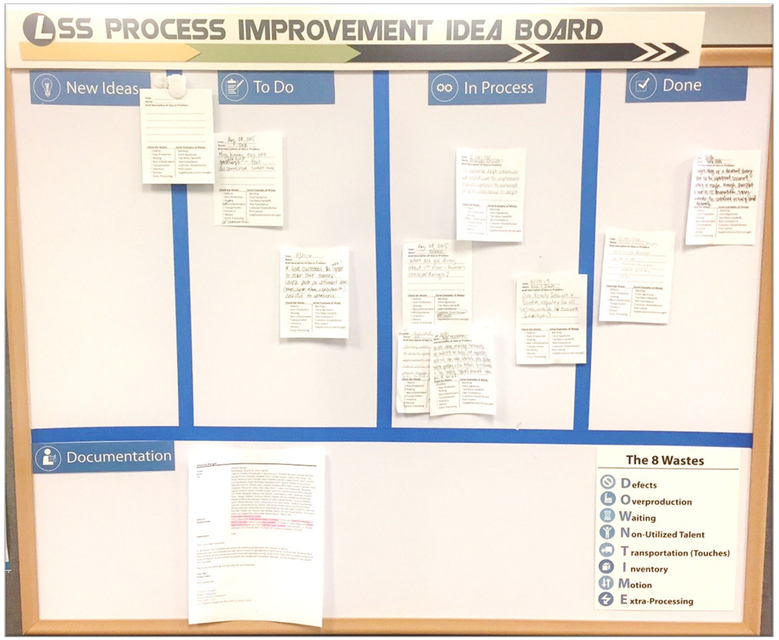
Control Checklist

- Was formal ownership handed over to the process owner?
- Did you create a system and/or process to monitor the results?
- Was documentation of processes and procedures completed?
- Were response plans created in case there is a drop in performance?

How can I empower staff to improve processes?

PROCESS IMPROVEMENT IDEA BOARDS (PIIB)

- Creates a platform for employees to generate and discuss ideas and/or problems of a process
- LSS trained Facilitators and employees work together to implement ideas by applying the DMAIC methodology
- Allows transparency of projects and their progress
- Encourages staff to proactively engage in process improvements



Physical Idea Board

Virtual Idea Board

Process Improvement Idea Boards

Idea Board Projects + DMAIC

- Teams often identify the problem but skip to implementing the solution(s)
- All ideas area addressed using the DMAIC methodology to discover:
  - The “root” of the problem(s)
  - Develop comprehensive solutions based on data and analysis
- The initial “idea” or solution submitted may change
  - **The key is to make data-driven decisions!**

Contact Us

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Q & A