



# **Leveraging Lean/Six Sigma For Rapid Solution Finding**



**Lean Six Sigma is a powerful process improvement methodology that combines Lean manufacturing principles with Six Sigma techniques to enhance efficiency and quality in organizations.**

- Process oriented thinking
- While founded in manufacturing, has gained traction in the healthcare industry
- At its core, it is about reducing variance (Six sigma) and waste (Lean) in processes.



## **What is Lean/Six Sigma?**

**“If you always do what you always did, you’ll always get what you’ve always got.”**

**Henry Ford**

# Six Sigma

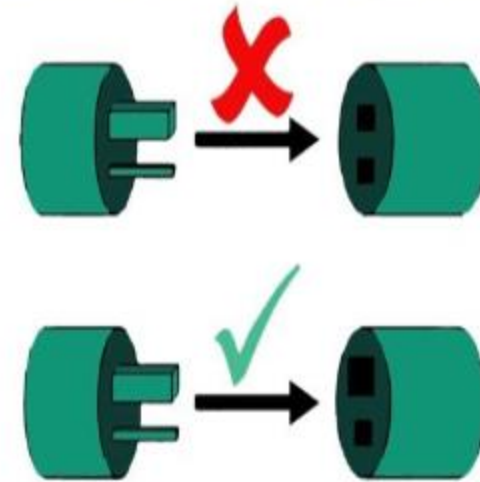
3.2 errors in 1 million opportunities

## The Social Welfare Data Problem

- The data we want isn't always available for a multitude of reasons
- Outcomes vs. Key Performance Indicators
- Use the LSS DMAIC method to investigate and identify process variance concerns
- Allow a process to occur 10 different ways, and expect a 100 different results
- Poka Yoke – Make a process that only works one way, bring a process under control (See Control Charts later)

# POKA YOKE

## (Mistake Proofing Error Proofing)





## Define

What is the  
Problem?

### Brad Pitt: The Mascot of CQI





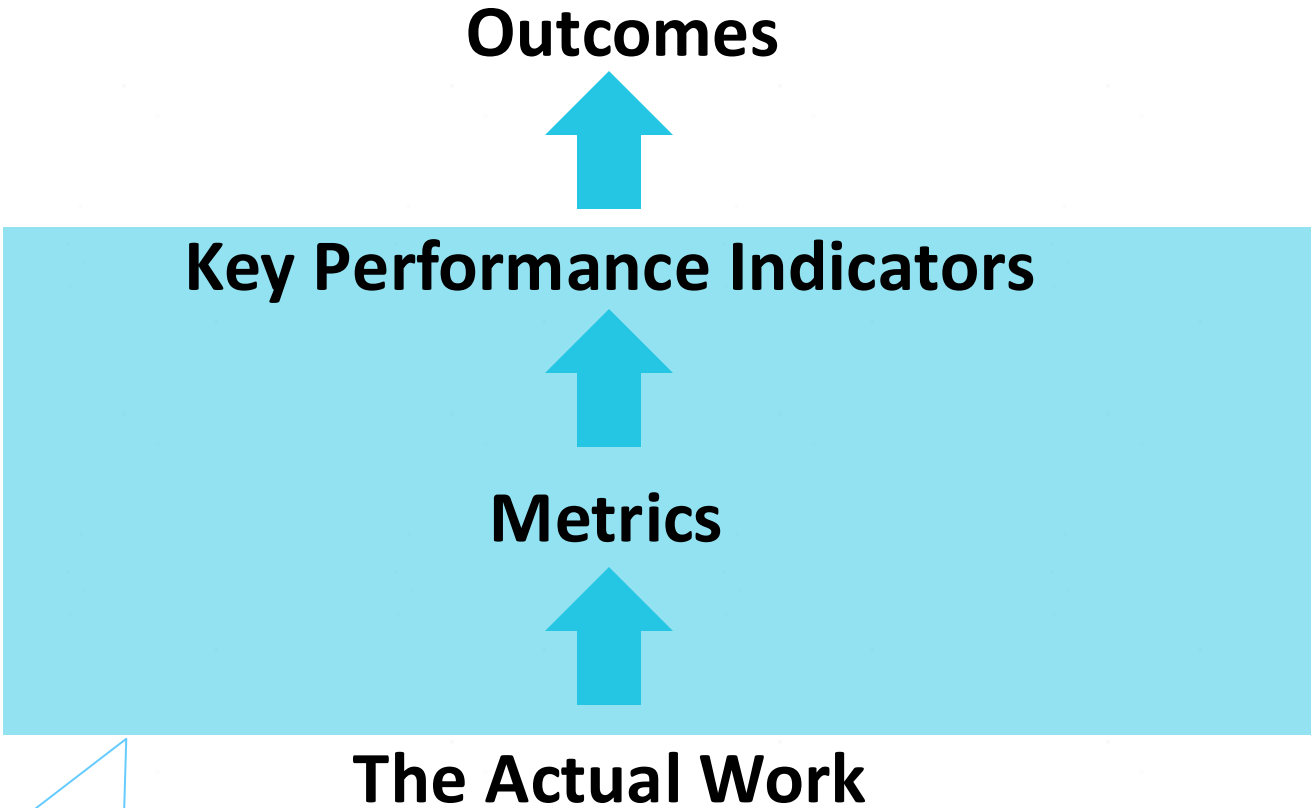
**Define**

What is the Problem?



**Measure**

What KPI's or Metrics are available to examine?

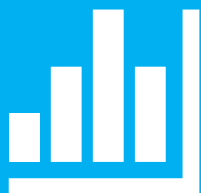


Try to keep your frontline workers attention here!



Define

What is the Problem?



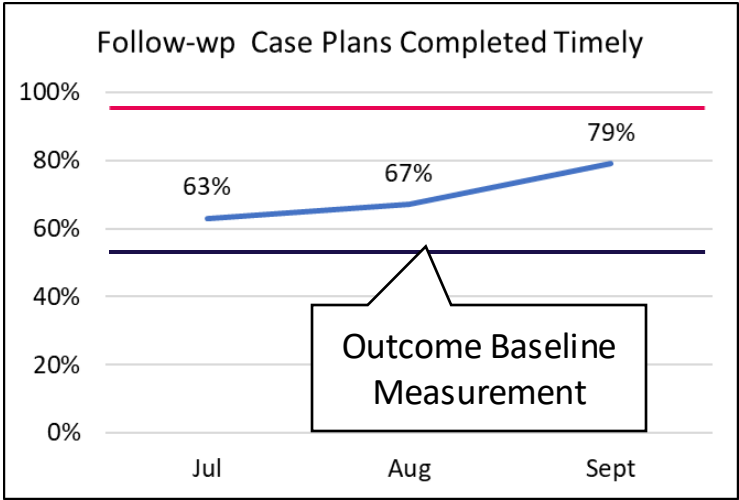
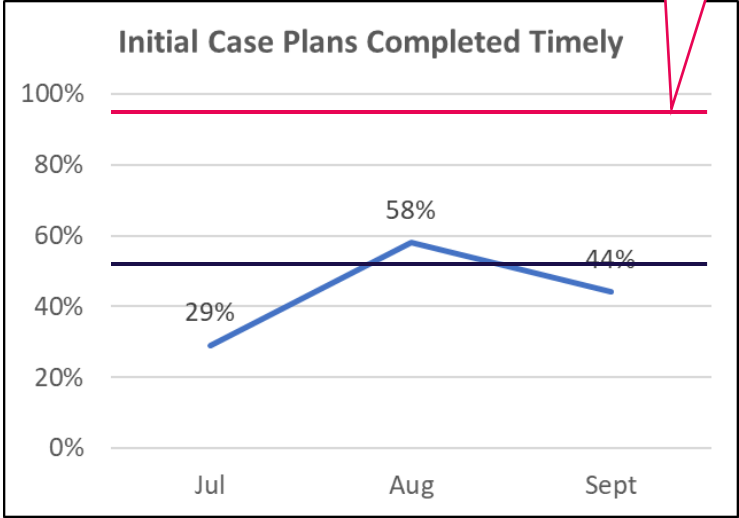
Measure

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Analyze

What is the data telling us?  
What is out of our control?  
What is within our control?





### Define

What is the Problem?



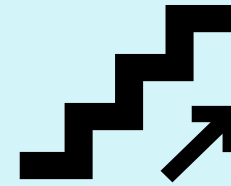
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### Improve

What are any possible solutions for the causes within our control?  
Which have the highest benefit and require the least amount of effort?



### Define

What is the Problem?



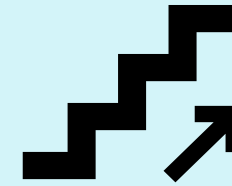
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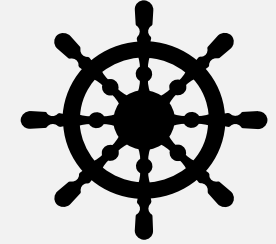
### Analyze

What is the data telling us?  
What is out of our control?  
What is within our control?



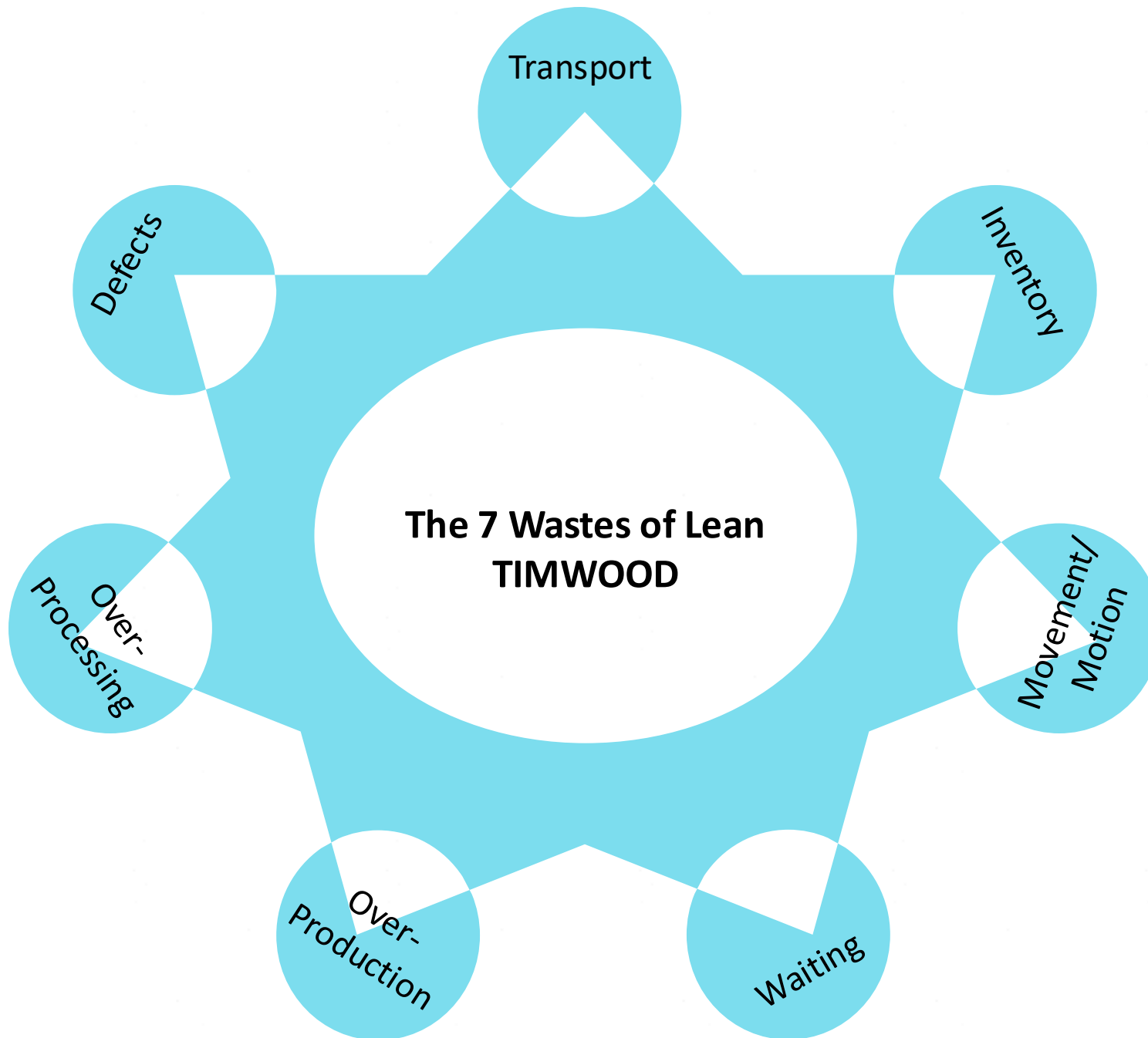
### Improve

What are any possible solutions for the causes within our control? Which have the highest benefit and require the least amount of effort?



### Control

How do we know we improved?  
How do we sustain the gains?  
Can we improve further?



# Lean

Identifying and Eliminating Waste in Processes

When looking at a step in a process, ask these questions:

- Is this value-added work?
  - A Case Manager must fill out 2 different forms for the same task (Over-Production)
- Is it necessary work?
  - A supervisor wants to check every case plan before completion (Over-Processing)
- If it is not value added or necessary work, it is more than likely waste in a process.



# Let's Create a Process

The Tennis Ball Experiment

# The Tennis Ball Experiment

10 Participants must pass a tennis ball between them while being timed.

## The Process

- Numbered playing cards in front of you designate your “step” in the process. (Face cards are not involved)
  - The tennis ball starts with number 1 (Ace)
  - The tennis ball must be passed in numerical order 1-10. It must touch each person in the process.
  - The clock starts as soon as Number 1 passes the ball.

## Measurement

- The first completion of the process will be your baseline measurement.
- State Outcome for tennis ball passing
- Benchmark

# The CQI Project

Generate Innovation, Pilot Ideas



# Define

- Start by filling out the Quad Chart

- Identify the Champion of your project
  - The Champion should be a person with the appropriate seniority that oversees the process being worked on.
  - If the process is contained in 1 department, this should be the supervisor of that department. If it is more than 1 department, it should be a supervisor at a level over each department.
- The Project Champion's role is:
  - To promote the project
  - To secure necessary resources for the project
  - To remove bottlenecks and barriers to the project
  - Provide guidance as needed during the project

- Identify the Project Lead
  - Unless you are in a position of leadership at the organization, you should not be the project Lead
  - The Champion should identify someone who will be a part of the project team who.
- The Project Lead's role is:
  - Ultimately responsible for project completion
  - Have some authority to select project team members
  - Ensure project team member participation
  - Report project progress to the Champion
  - Oversee improvement pilots
  - Oversee project completion control plan

# The Quad Chart

## Problem/Goal Statement

**Problem Statement:**  
**Scope:**  
**Overall Goal:**

## Key Metric

**Metric:**  
**Smart Goal:**

## Core Team

- ◆ John Doe

◆ Jane Doe
- Champion

Project Lead

## Meeting Schedule

**Meetings**  
Initial/Define Meeting

**Scheduled**

Core Team

Role

Participation

# Define

- Problem statement

- The measurement: Outcome vs. Key Performance Indicator (KPI)
- The Problem Statement should be concise, and data driven
  - Bad example: “We are not meeting the tennis ball outcome”
  - Good Example: “The tennis ball currently takes 2-4 seconds between process steps, resulting in a baseline process time of 25 seconds. This is 15 seconds above the state outcome of 10 seconds”

- Scope

- Identify each locations, programs, department and role that is a part of the process. If necessary, identify exclusions as well
  - Example: CQI Conference LSS presentation group, numbered cards. Face cards not in scope.

- Goal Statement

- Focus the goal on the KPI
- Avoid stating the reverse of the problem statement.
- Again, concise and data driven
  - Bad example: “To get the tennis ball process under 7 seconds”
  - Good Example: “Improve tennis ball passing to a consistent 1 second per process step”

# Measurements

- What measurements will you be using to measure project success?
  - Measurement System Analysis (MSA) –
    - Make sure you understand how the measurements work
    - Does the measurement make sense?
  - Avoid using just the outcome measure
  - Include any relevant KPI measurements
  - Make your KPI measurement goal a SMART goal (Specific, Measurable, Achievable, Relevant, Time Bound)



## Metric: Tennis Ball Step Passing Time

**Baseline: October 28th – 10% (1 of 10 were 1 second or under)**

## Secondary Metric: Monthly Outcome Control Chart

# Team Composition

- Allow the Project Lead to select team members, with some guidance
  - Represent Project Scope
  - Subject Matter Experts/The GEMBA (Those who do the work)
  - Top Performers (best practices)  
AND Low Performers (blind spots)

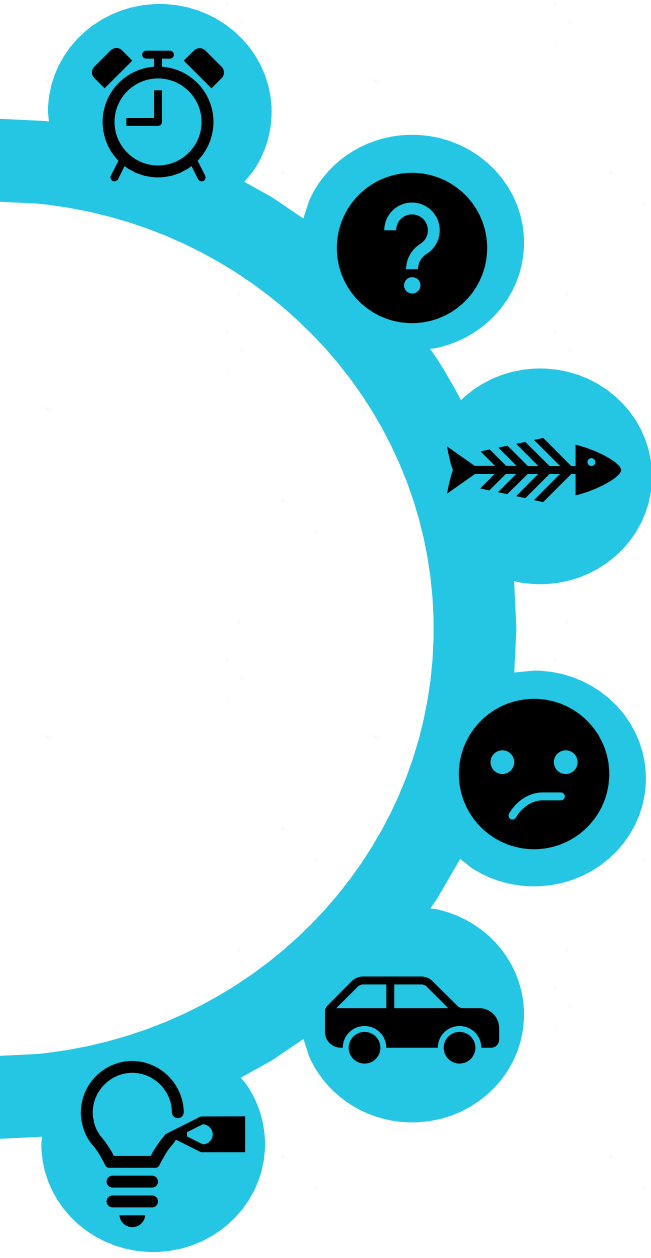




# First Project Meeting

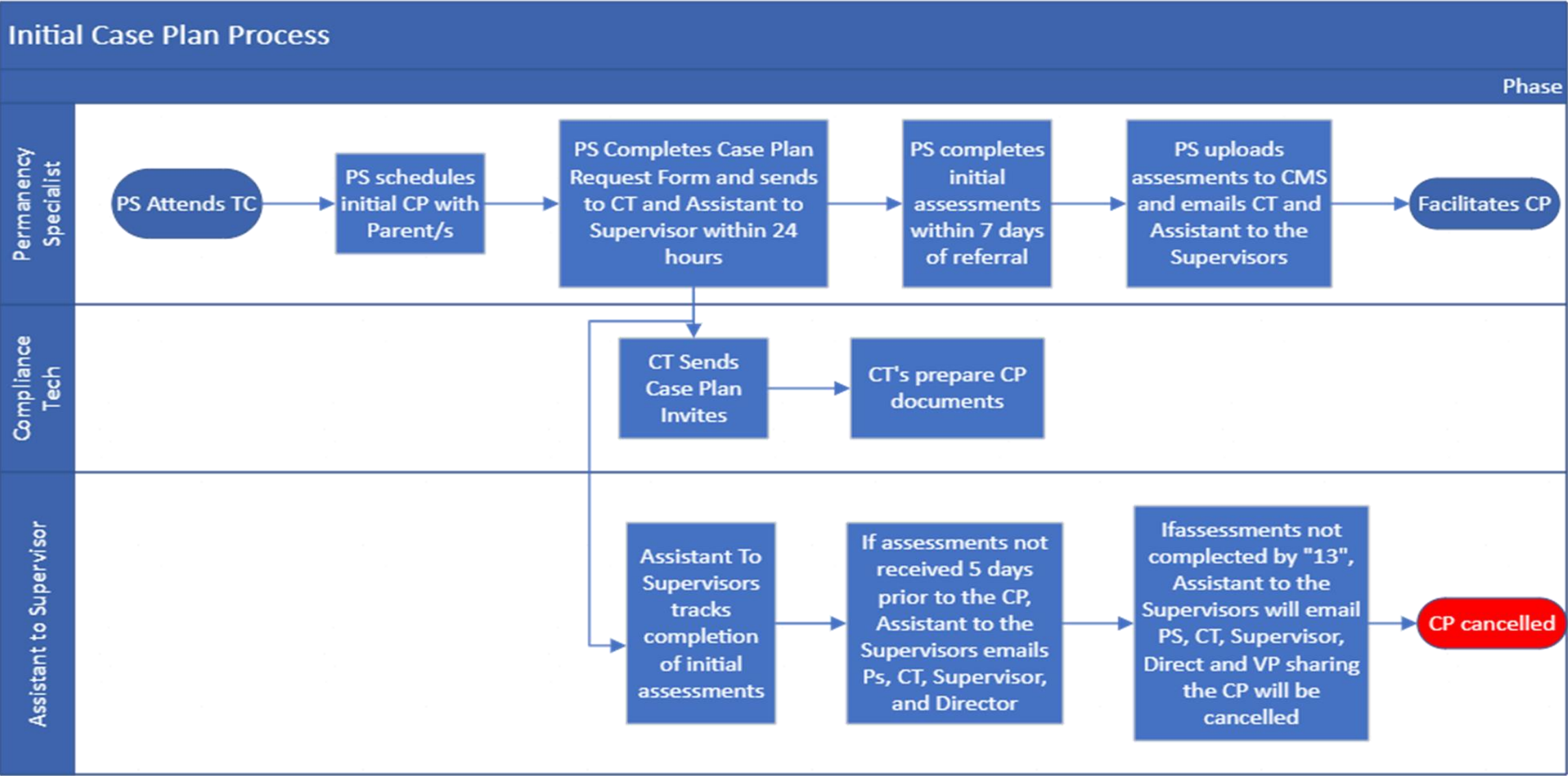
The Tennis Ball Experiment

# Analyze Phase – Project Team Meeting 1



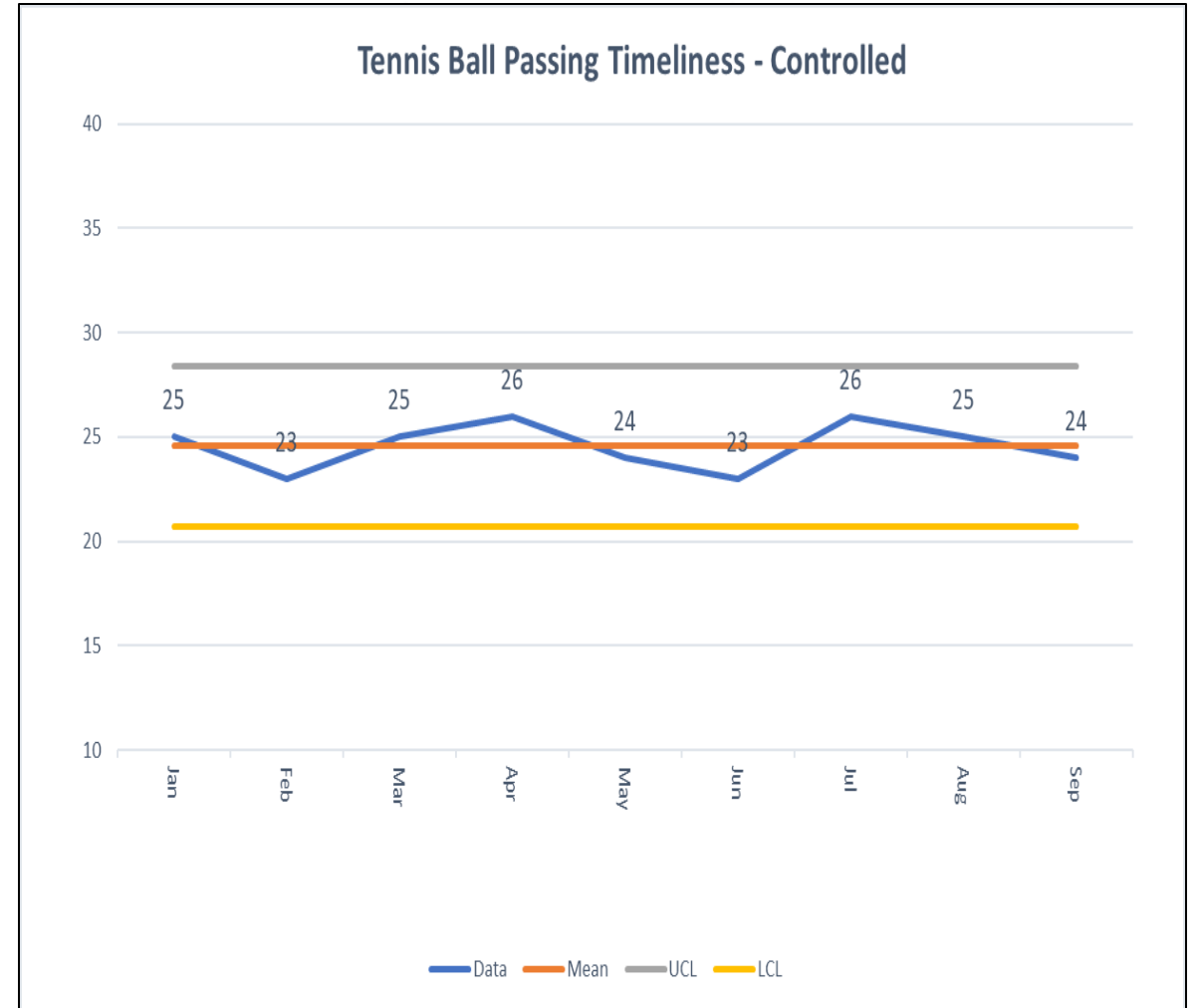
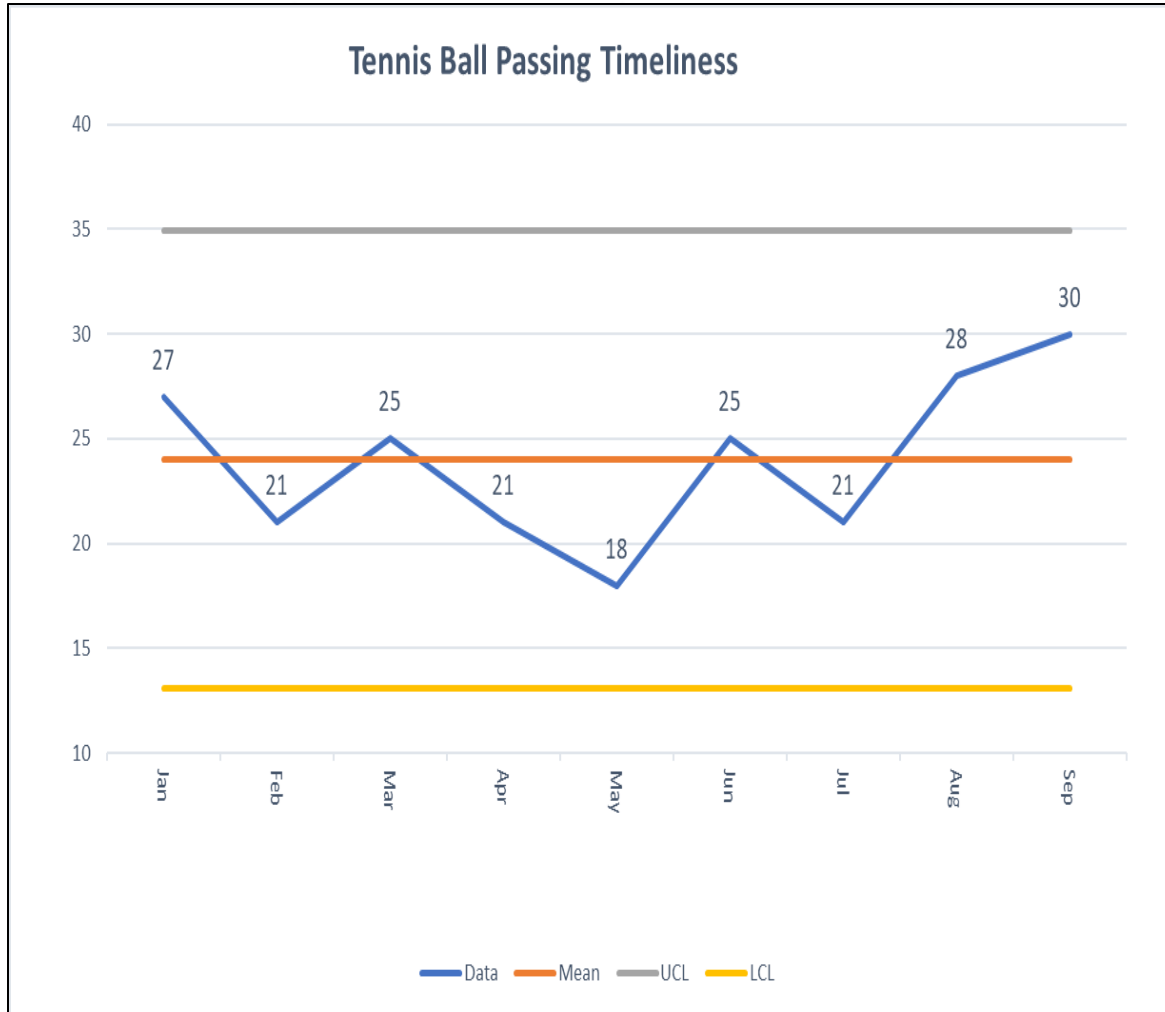
- Goals for Meeting 1:
  - Try to keep meeting to just 2 hours
  - Review Data, Process Chart
  - Fill in Fishbone Diagram
  - Identify largest concerns within organizations control
  - If necessary, review Parking Lot items at the end
  - Leave with instructions to share the identified concerns with co-workers and contemplate solution ideas

# Measurement Phase – Process Mapping



# Measurement Phase - Visualizations

## Control Chart Example



Template for Control Chart creation available in presentation documents

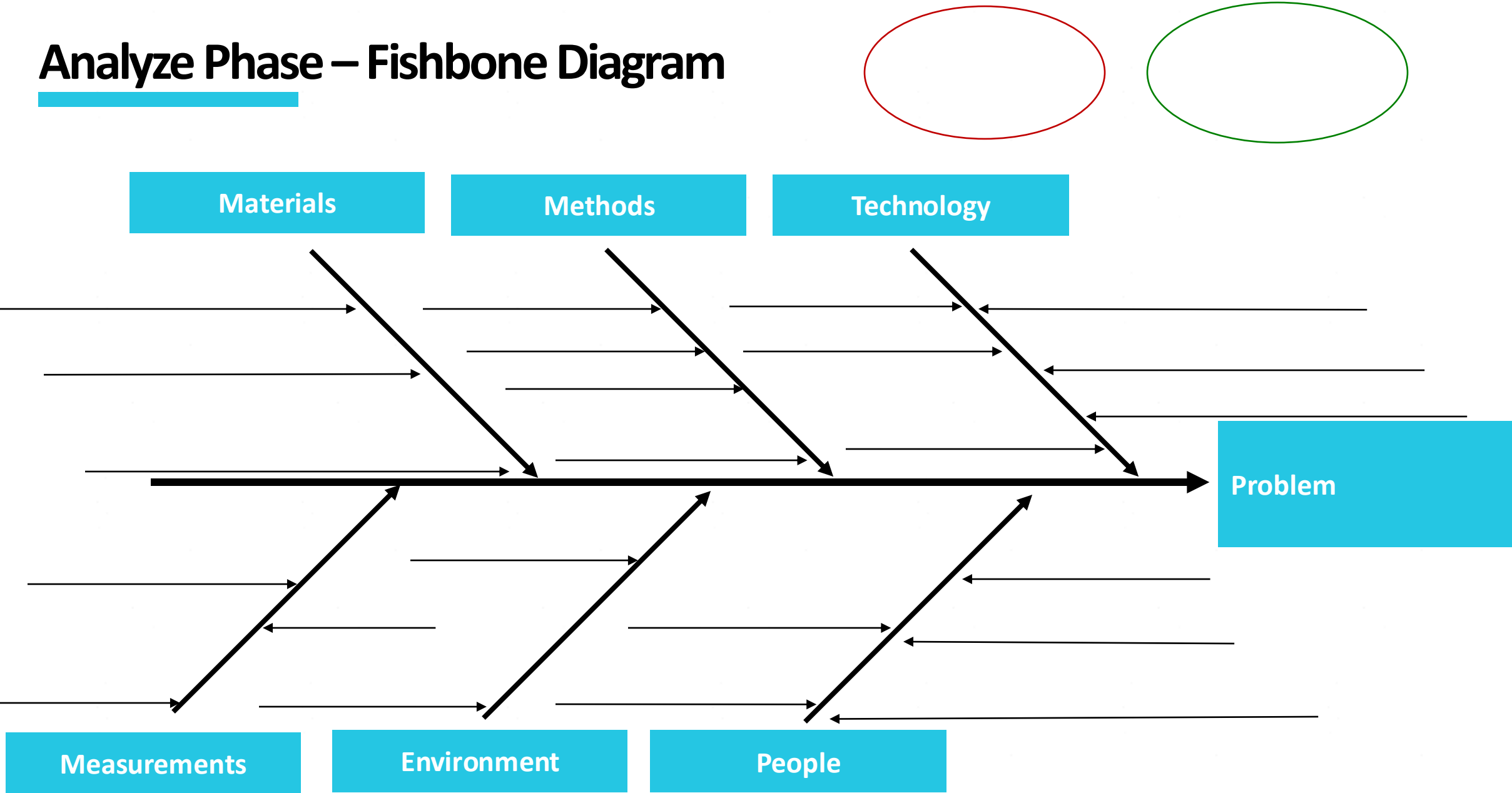
# Analyze Phase

- It's inevitable that concerns and roadblocks will be brought up by team members during analysis discussion
- If conversation on these items seem “stuck”, inform the team that you will place it in the parking lot to wrap back around to at the end. Have a separate slide set aside to capture parking lot items. Return to them at the end of the meeting.
- Often these items revolve around issues outside of the organizations control (e.g. State or Federal requirements)
- These items will often resolve themselves or become less important as other topics arise in the group discussion
- If not, the facilitator can inform the group these items will be brought to the project champion for review
- The important thing is to not let the group discussion get blocked or stagnated by these items.

## THE PARKING LOT

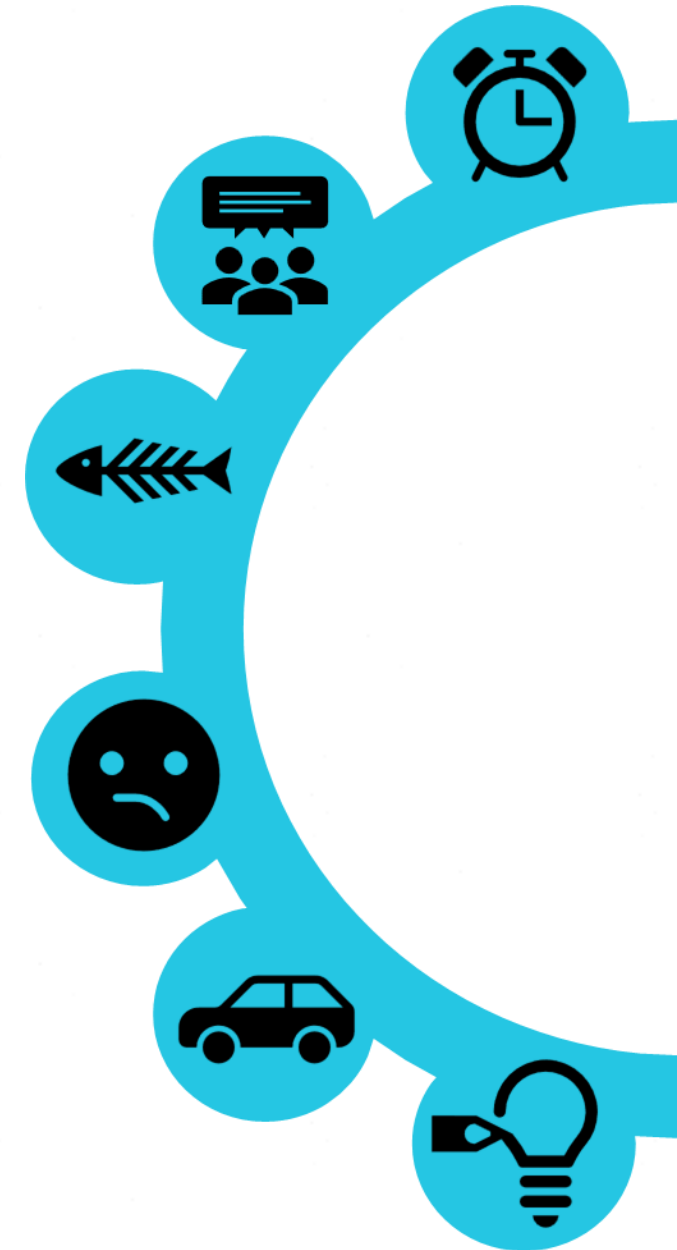


# Analyze Phase – Fishbone Diagram



# End of Meeting 1

- After filling in the fishbone diagram, circle one to three key items the team believes are within the project team's control to address. (Green Circles)
- Acknowledge items the team discussed that they believe are important, but outside of the project team's control to address. (Red Circles)
  - Often, discussion can get stalled or derailed on these items. Let the team know these items will be shared with the project champion, and if possible, addressed at a higher level.
  - The goal is to not let the project team get stuck.
- Briefly review any leftover parking lot items.
  - Most of the time, these items will have already been resolved by the previous steps.
- As you close the meeting, encourage the team members to think over the green circled items, gather input from co-workers, and be ready to return to the next meeting with ideas to address them
- Make sure the second meeting is scheduled. Attempt to schedule for within 1 to 2 weeks.





# Second Project Meeting

The Tennis Ball Experiment

# Improve Phase

- Goals for Meeting 2:
  - Again, try to keep meeting to just 2 hours
  - Brief review of any updated data, process chart, fishbone
  - Gather improvement ideas for each identified area of need
  - Utilize the benefit/effort matrix to identify the most appropriate solutions
  - Create plan to implement/pilot improvements
  - Complete Control Chart



[illegible]

- [illegible]

# Brainstorm

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# Benefit/Effort Matrix

- Make sure there is at least one improvement idea aligned with each key area of opportunity
- Limit to 1 major project

Benefit	Quick Wins	Major Projects
	Fill Ins	Not Worth It
	Effort	

# Solution Set

Solutions	Contribution of Root Cause to Late Initial Case Plans		
	Root Cause #1	Root Cause #2	Root Cause #3

# Improvement Plan

- The project team can be dismissed when the improvement plan is created
- Create plan with project lead for Improvement Plan Implementation team to meet and check on progress of solution items

Solutions	How	Who	When



# Tennis Ball Process Round 2

Implement your improvements!

# Control Plan

- Control Plan is the plan to monitor the goal even after improvement
- Create control plan with either the implementation team and/or the project champion
- Fill in everything you can, but don't fret over filling in everything

Control Plan & Escalation Plan								
Process (x) and Outcome (Y) Indicators	Unit of Measure (U.O.M)	Target	Control Limit	Process Owner / Metric Monitor	System / Source	What to Check	Frequency / Compliance Interval	Procedure Reference (Optional)
Enter Output "Y" Metric to be monitored here:								
ACTION / Counter Measure : If control Limit is exceeded:								
Enter Input "X1"Key Process Input Variable (KPIV):								
ACTION / Counter Measure: If control Limit is exceeded:								



# Continuous Quality Improvement

Can you make it better?



# Thank You

Paul Miller



316 210 4007



[paul.miller@st-francis.org](mailto:paul.miller@st-francis.org)



<https://saintfrancisministries.org>

