# Advanced QI Tools to Improve Your Clinical Quality Management Program: Learn from Lean and Statistics

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NATIONAL RYAN WHITE CONFERENCE ON HIV CARE & TREATMENT

# CQII Overview

NATIONAL RYAN WHITE CONFERENCE ON HIV CARE & TREATMENT

HRSA Ryan White HIV/AIDS Program
CENTER FOR QUALITY IMPROVEMENT & INNOVATION

## Center for Quality Improvement & Innovation (CQII)

- Funded by the HRSA HIV/AIDS Bureau [#U28HA37644]
- Timeframe: July 1, 2020 to June 30, 2024 (4 years)
- New York State Department of Health AIDS Institute
  Center for Program Development, Implementation, Research and Evaluation (CPDIRE)

*"Together, we continue to improve the lives of people with HIV across the United States. CQII provides state-of-the-art technical assistance and training to Ryan White-funded recipients and subrecipients that measurably strengthen local clinical quality management programs and improve patient care, health outcomes, and patient satisfaction."*

# Technical Assistance Levels

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HRSA Ryan White HIV/AIDS Program
CENTER FOR QUALITY IMPROVEMENT & INNOVATION

| Dissemination of QI Resources |
| --- |
| Online presence of CQII on the TargetHIV website |
| Presence at national conferences, including the 2020 National Ryan White Conference |
| National announcements to highlight upcoming events and QI resources |

Information Dissemination

| QI Trainings |
| --- |
| Face-to-face training sessions to build capacity among providers and patients |
| National TA Calls to showcase recipients and QI content |
| Online tutorials for providers and patients to learn about QI |

Training/Educational Fora

| Provision of Technical Assistance |
| --- |
| Provision of on/off-site technical assistance |
| Access to nationally recognized QI content and lived experience experts |
| Tracking all ongoing TA engagements and activities |

Consultation/Coaching

| Communities of Learning |
| --- |
| National QI collaboratives with engagement of RWHAP recipients |
| Annual Quality Award Program to highlight QI leaders |

Communities of Learning

Intensity

CQII.org | 212-417-4730

# Learning Objectives

1. Learn about advanced quality improvement (QI) tools and their synergistic effect in the context of an HIV QI project
2. Learn about the application of advanced tools throughout the project lifecycle
3. Understand how to use advanced QI tools in current or future QI projects

# Case Study

- A Part A Recipient is using a network approach to Rapid ART to increase the viral load suppression in the region.
  - They are working with their largest FQHC system which has eight clinics in the metropolitan area.
  - Rapid ART is new to six of the clinics that didn't participate in the pilot period.
  - The two-sites with functioning Rapid ART processes have excelled with new patients, but there is still work to be done with engaging patients lost-to-care.

# QI Tools – An Overview

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**Plan** | **Do** | **Study** | **Act**

**Define** | **Measure** | **Analyze** | **Improve** | **Control**

**Tools**

**Identify and Prioritize Opportunities**

- SWOT analysis
- Force Field Analysis
- SIPOC Diagram
- Value Stream Map
- VOC Techniques

**Develop Project Goals**

- AIM Statement or **Project Charter**

**Describe Current Process**

- Flow Chart
- Swim Lane Map
- Spaghetti Map
- Patient Journey Mapping

**Collect Data on Current Process**

- **Control Chart**
- Run Chart
- Checksheet
- **Histogram**
- Scatter Diagram
- Pareto Chart
- Radar Chart

**Identify Root Causes**

- Cause and Effect
- 5 Whys
- Affinity Diagram

**Identify Improvements**

- Solution and Effect
- 5 How's
- Driver Diagram

**Develop Improvement Theory**

- Ranking and Voting
- Decision Matrix/Priority Matrix
- **FMEA**

**Develop Action Plan**

- Implementation Plan
- Future State

**Display New Outcomes**

- Kanban Board
- Before/After Analysis

**Collect Data on Improved Process**

- **Revisit data tools**

**Describe Improved Process**

Revisit Process Tools

**Adopt**

- Control Plan
- Standard Work
- Poka-Yoke
- Visual Measures
- Storyboard

**Adapt**

- "Revisit Do/Improve" tools

**Abandon**

- Revisit "Plan/"Measure and Analyze" tools

# How Many Tools Do I Need?

- Every project is unique, tool selection should be based upon:
  - Process complexity
  - Team experience
  - Availability and reliability of data
- Some common tools will apply to most projects.
  - Think of a project like a burger, it comes between two buns, but the patty and toppings are totally customizable.

# What Is in the Toolbox for Today?

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**Plan**
- Project Charter
- SIPOC
- Value Stream Map
- Spaghetti Diagrams

**Do**
- Failure Mode & Effects Analysis (FMEA)

**Study**
- Histograms
- Control Charts

**Act**
- Sustainability/Control Plan

**IMPORTANT!**
Many of these tools can be used in multiple project phases

# Tools for Planning |
## Project Charter
## SIPOC Diagram

Defining the process, problem, and scope of a project

# Project Charter

- Project Charter is a tool to
  - Continuously track your team's problem-solving process
  - Show the thinking behind your process
  - Organize your work
  - Condense work document and report your QI work
- Derivation of A3
  - work condensed on 11" x 17" paper
- Template provides questions to guide your team's discussions to complete each element of your QI Project
  - Elements consistent with PDSA and/or DMAIC phases

# Case Study Example | Charter

## Project Rationale and Problem Statement

There is an opportunity to increase Viral Suppression by initiating patients lost-to-care on ART quickly after they are re-engaged. This project seeks to improve:

1. **Health Outcomes** – Viral Load Suppression; opportunities to prevent new HIV infections (U=U)
2. **Patient Care** – Optimally linking patients in a timely manner
3. **Staff Experience** - Pain points related to the lost-to-care engagement process
4. **Patient Experience and Well-Being** – Timely, efficient, effective service delivery

Aim Statement

| Aim Statement | Benchmarks |
|---|---|
| 1. Metropolitan Area Clinics seeks to achieve<br>2. 25% percent<br>3. increase<br>4. in initiation of ART within seven days in restart patients between 18+ measured by Number of persons in the denominator who initiate ART within 7 days of diagnosis<br>5. From 66%<br>6. to 91%<br>7. By 6 months from now | • VLS = 88%<br>• Lead time to VLS = 77 days<br>• Average Cycle time of time to initiation of ART<br>  • Median = 28 hrs<br>  • Mean = 41 hrs<br>• Patient Experience Score<br>  • 3.9/5 |
| Supporting Measures:<br>• Outcome Measure: VLS to 91%<br>• Process Measures:<br>  • Cycle time – referral to intake to <24 hours<br>  • Lead time to VLS <60 days<br>• Patient Satisfaction – improve score from 3.9/5 to 4.5/5 | |

## Scope

| IN SCOPE | OUT OF SCOPE |
|---|---|
| • Lost-to-Care and Rapid restart patients<br>• Patients 18+ years old<br>• Any process steps from learning about an existing positive case until successful initiation of ART | • Newly diagnosed<br>• Youth and Adolescent patients (<18 years old)<br>• Retention<br>• Extending clinic hours (for at least cycles 1-3)<br>• Major changes to EMR |

| Project Milestones | Owner | Proposed Date | Actual Date |
|---|---|---|---|
| 1. Set project scope and goals (prepare Project Charter, engage team, collect data) | Sponsor/Team Leader, Facilitator | | |
| 2. Understand the current situation | Facilitator/ Team | | |
| 3. Analyze the current situation (root causes) | Facilitator/ Team | | |
| 4. Define a vision of success | Facilitator/ Team | | |
| 5. Generate, evaluate and select improvements | Team/ Sponsor | | |
| 6. Implement changes and make adjustments | Team Leader/ Staff | | |
| 7. Measure performance | Sponsor/Team Leader | | |
| 8. Document standard work and lessons learned | Team | | |
| 9. Sustain improvement | Team Leader/Process Owner | | |

# Problem Statement

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**Supporting Measures:**

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- Patient Experience Score
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# SIPOC

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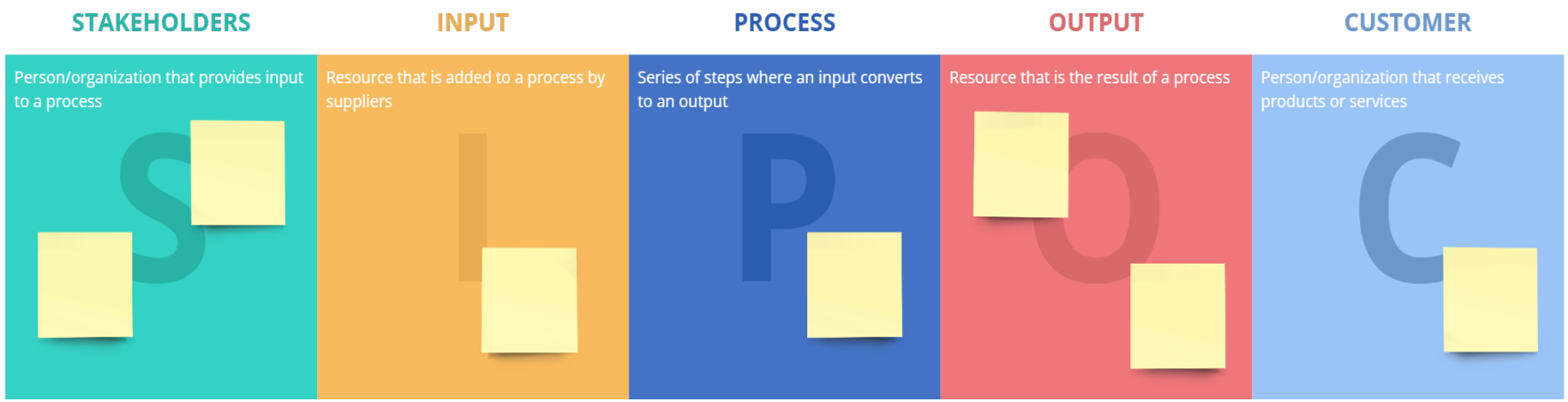
**Stakeholders,**

**Inputs,**

**Process,**

**Outputs, and**

**Customers**




Use the information on the charter to fill out the SIPOC

# SIPOC Diagram

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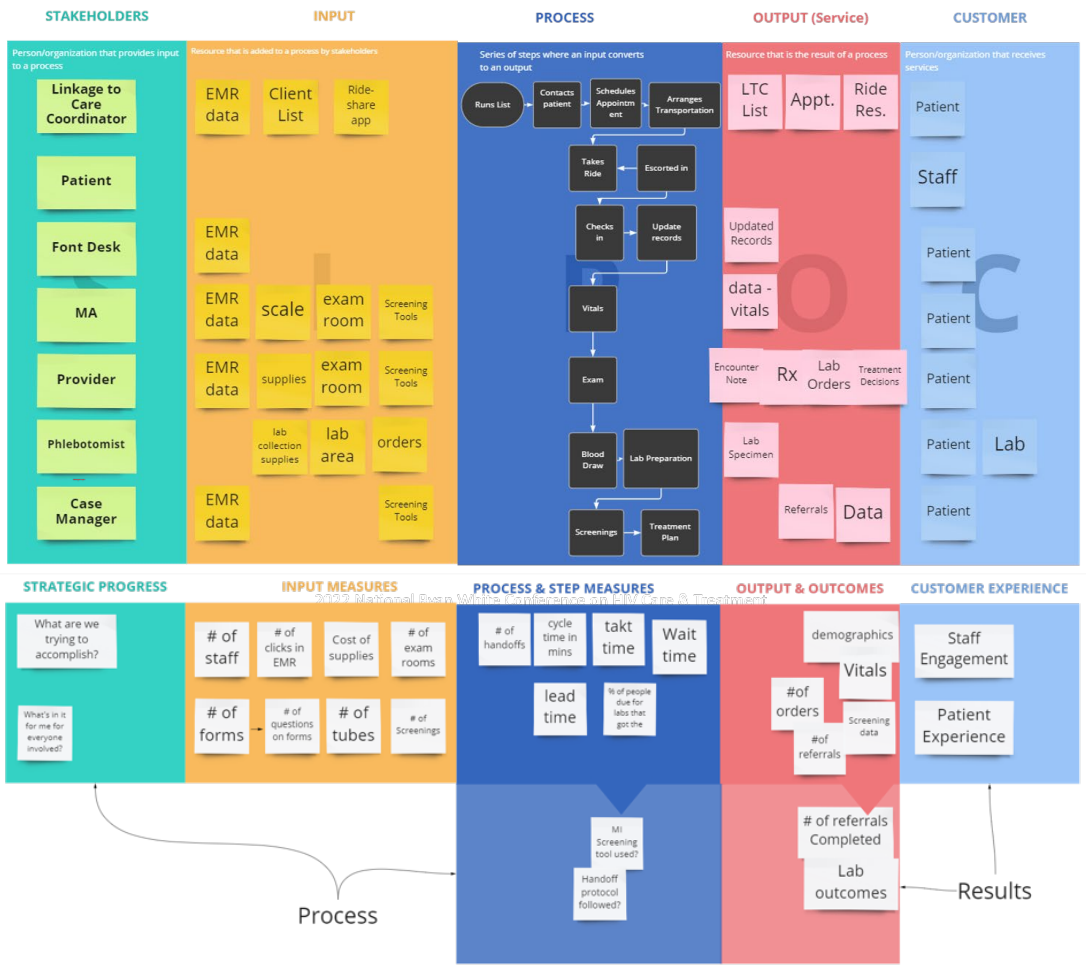
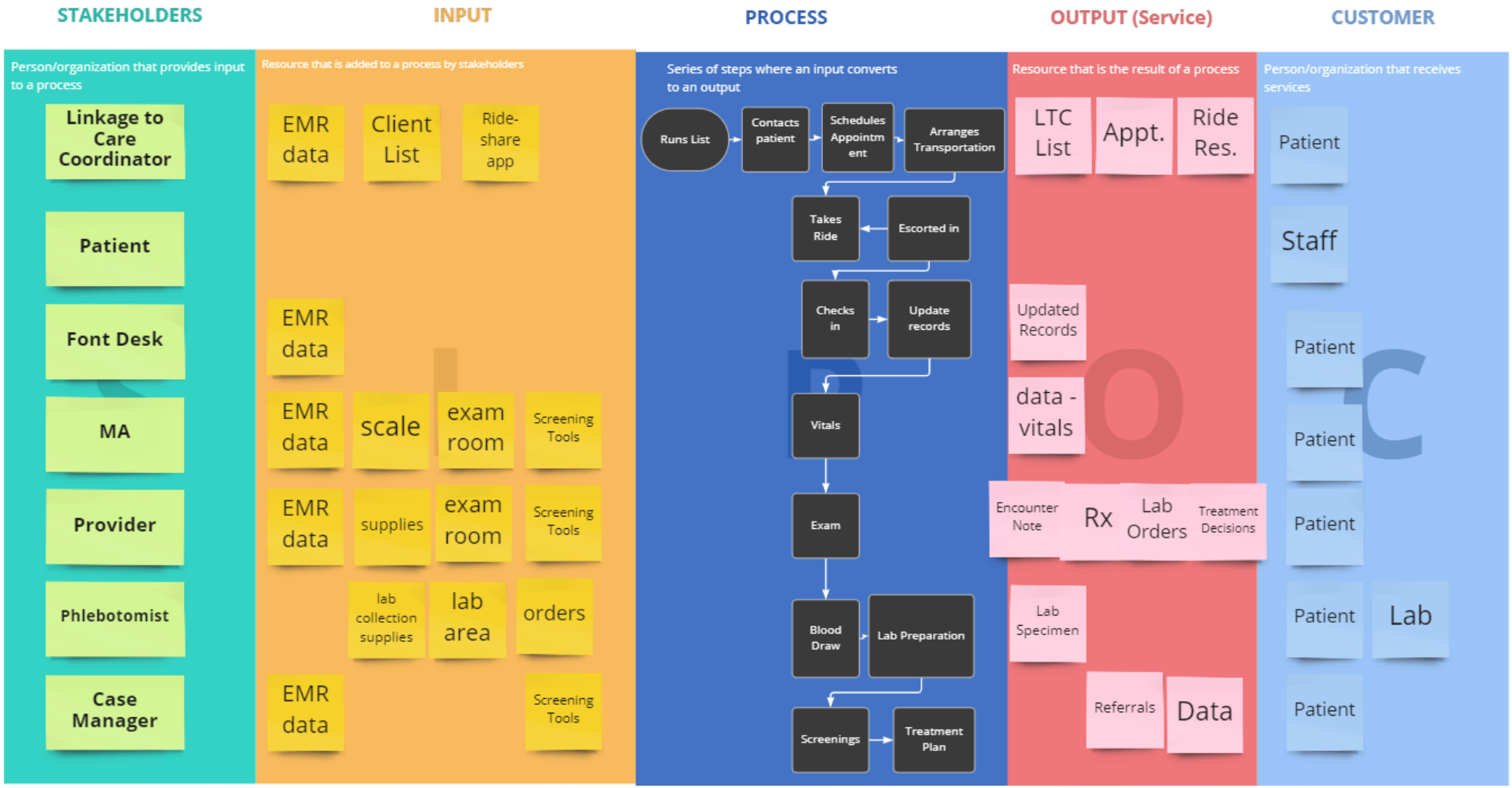
***When to use it:***

- When first starting to investigate a process and a team needs to understand the basics that make up the process.
  - Especially when you need to understand how complex processes work together as a system
- When a team needs a way to get the collective knowledge of the team members about a process recorded in an easy to view format.
- When we need to make a concise communication to others about a process and the parameters that it encompasses.

# SIPOC Diagram Example

## SIPOC & Measurement

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Person/organization that provides input to a process
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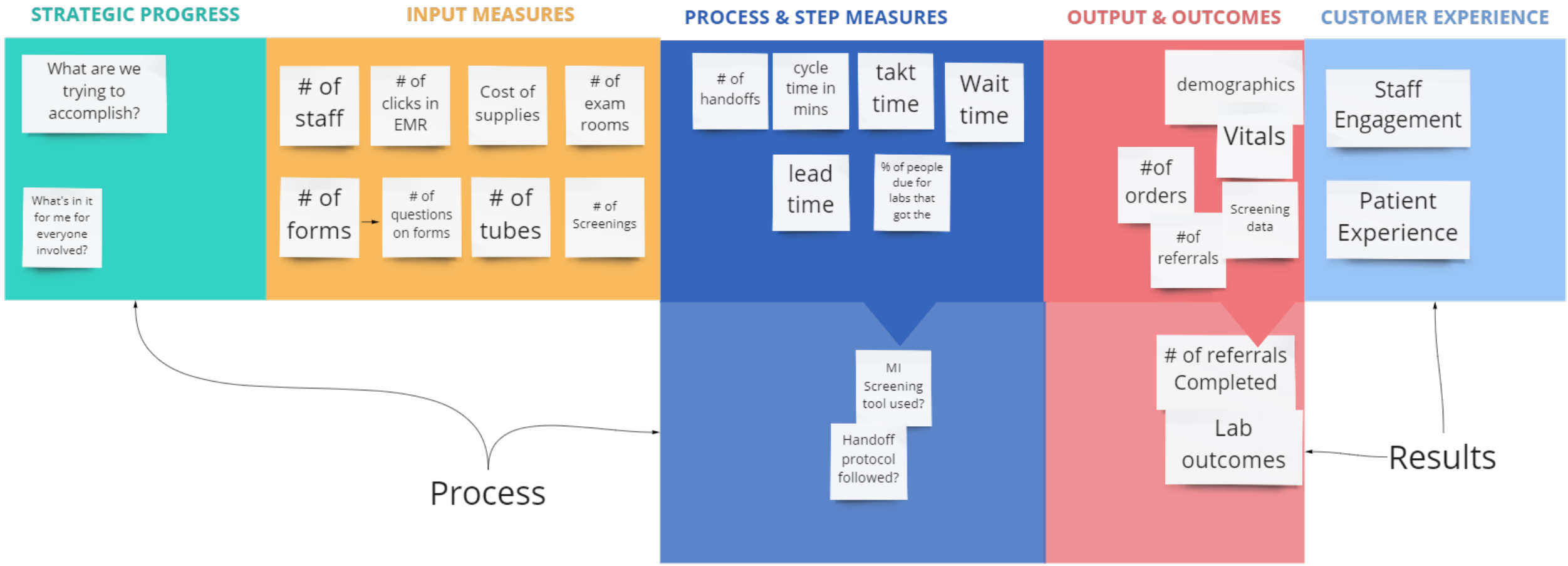
Client List
Ride-share app
EMR data
EMR data
scale
exam room
Screening Tools
EMR data
supplies
exam room
Screening Tools
lab collection supplies
lab area
orders
EMR data
Screening Tools
Runs List
Contacts patient
Schedules Appointment
Arranges Transportation
Takes Ride
Escorted in
Checks in
Update records
Vitals
Exam
Blood Draw
Lab Preparation
Screenings
Treatment Plan
LTC List
Appt.
Ride Res.
Updated Records
data - vitals
Encounter Note
Rx
Lab Orders
Treatment Decisions
Lab Specimen
Referrals
Data
Patient
Staff
Patient
Patient
Patient
Patient
Lab
Patient

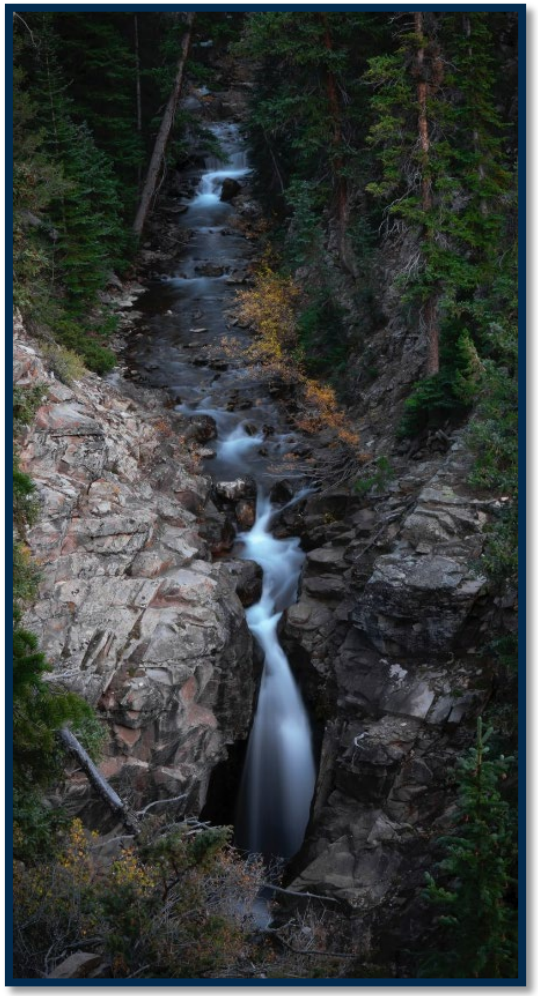

STRATEGIC PROGRESS
INPUT MEASURES
PROCESS & STEP MEASURES
OUTPUT & OUTCOMES
CUSTOMER EXPERIENCE
What are we trying to accomplish?
What's in it for me for everyone involved?
# of staff
# of clicks in EMR
Cost of supplies
# of exam rooms
# of forms
# of questions on forms
# of tubes
# of Screenings
# of handoffs
cycle time in mins
takt time
Wait time
lead time
% of people due for labs that got the
demographics
Vitals
#of orders
Screening data
#of referrals
Staff Engagement
Patient Experience
MI Screening tool used?
Handoff protocol followed?
# of referrals Completed
Lab outcomes
Process
Results

# Visualizing a Process | Value Stream Mapping

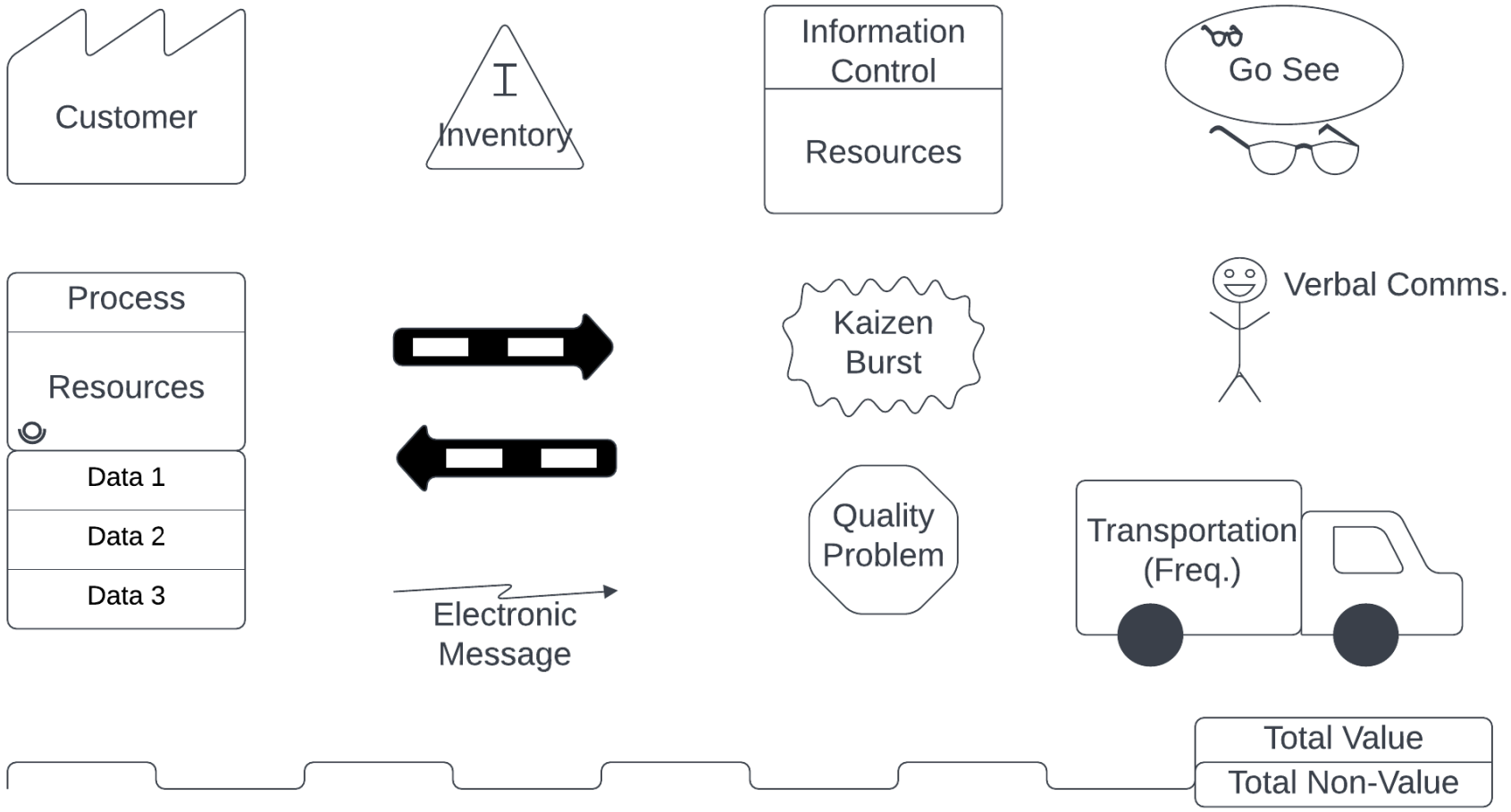
Learning to see value and waste in complex systems

# What is a Value Stream?

- The entire system that encompasses the flow of materials and information, including data, that results in the delivery of patient/client value.
  - Value means:
    - It is a service or service component that the patient wants
    - It changes the service experience for the service delivery
    - It can be done correctly the first time



# Value Stream Mapping: Common Icons for Services



# Before You Create the VSM

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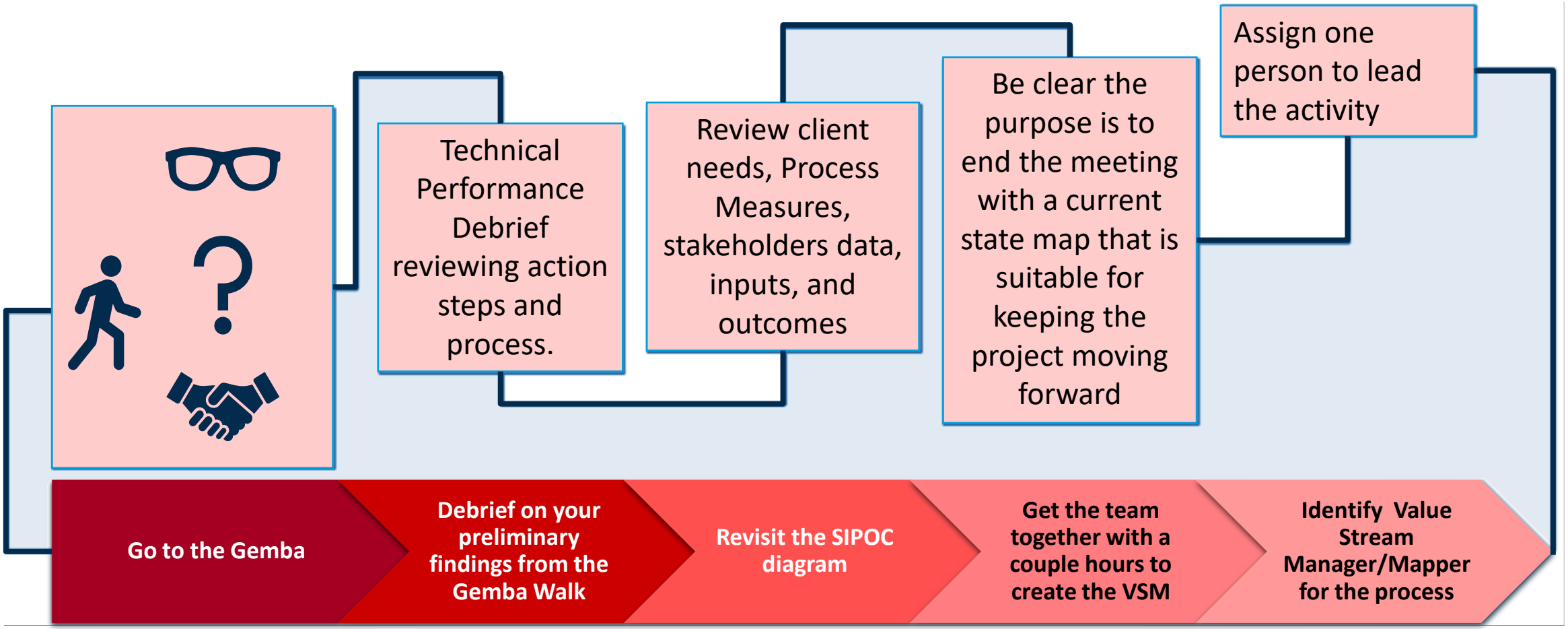


**Great!**

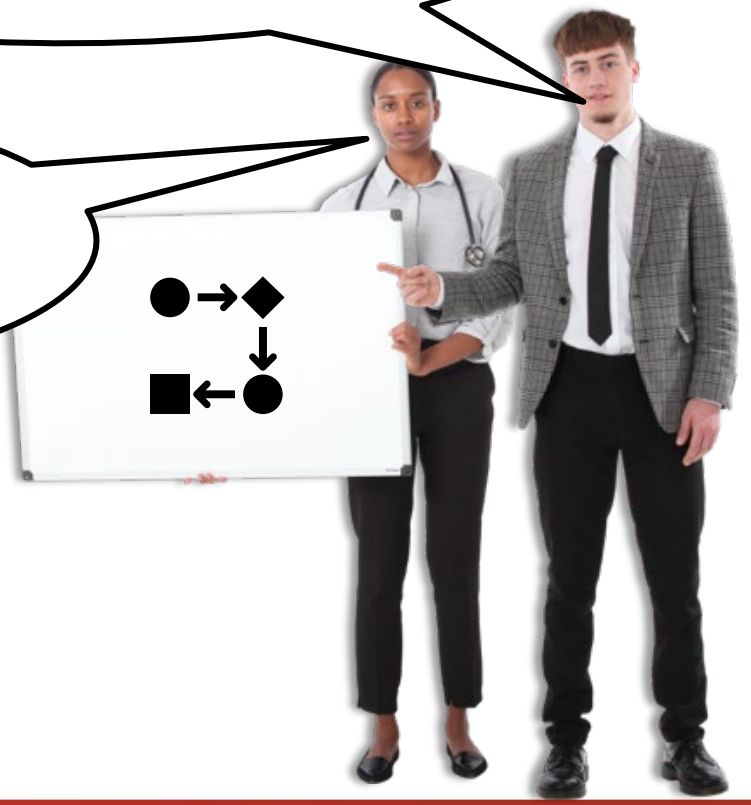
1. The team is together,
2. We walked the process,
3. Included more detail on the SIPOC,
4. Started thinking about measurements,
5. And agreed on symbols and mapping tools

*Let's do this!*

Umm… "moving tates", should I be nting a truck?

Perfect, the team is ready to start with the **current state** process map! Then we'll move to the **ideal state** map.

Nope, no truck needed, but sounds like we do need to talk quickly about what process states are all about.



# Process States in Improvement Projects

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1. **Current State (Documented)**
   - The way things are most recently documented.
2. **Current State (Actual)**
   - The way things actually are today in a process, at the beginning of an improvement activity.
3. **Ideal State**
   - This is the goal process.  In a reasonably perfect world, what could this process look like?
4. **Future State (cycle 1)**
   - This is the plan for the first cycle.
5. **Improved State**
   - After a set of clearly defined changes have been tested/implemented, what the process actually looks like afterwards.
6. **Future State (iterative)**
   - This is the plan for the next 1-3 months to get closer to the ideal state.

# Creating the Current State Value Stream Map

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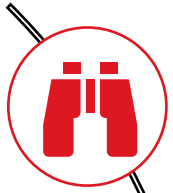


Identify the scope of the map for the initiative

- Begin with a high-level map across departments/unit
- Then focus on the level of processes or step that you wish to address using the SIPOC

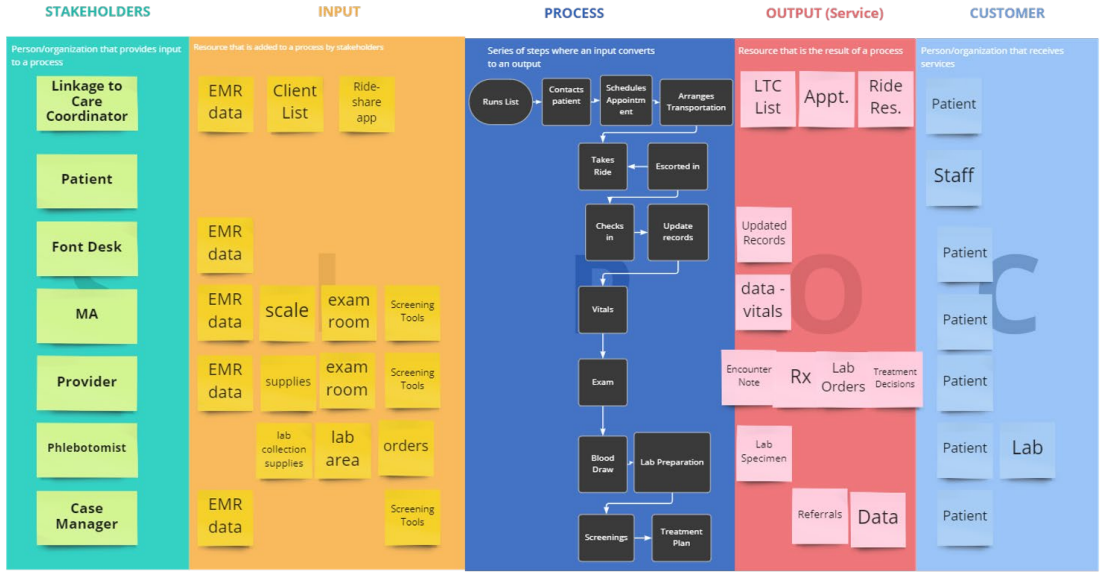
Identify when the client requirements are met (success!)

Inform process owners that the map we be created from actually walking and get their input

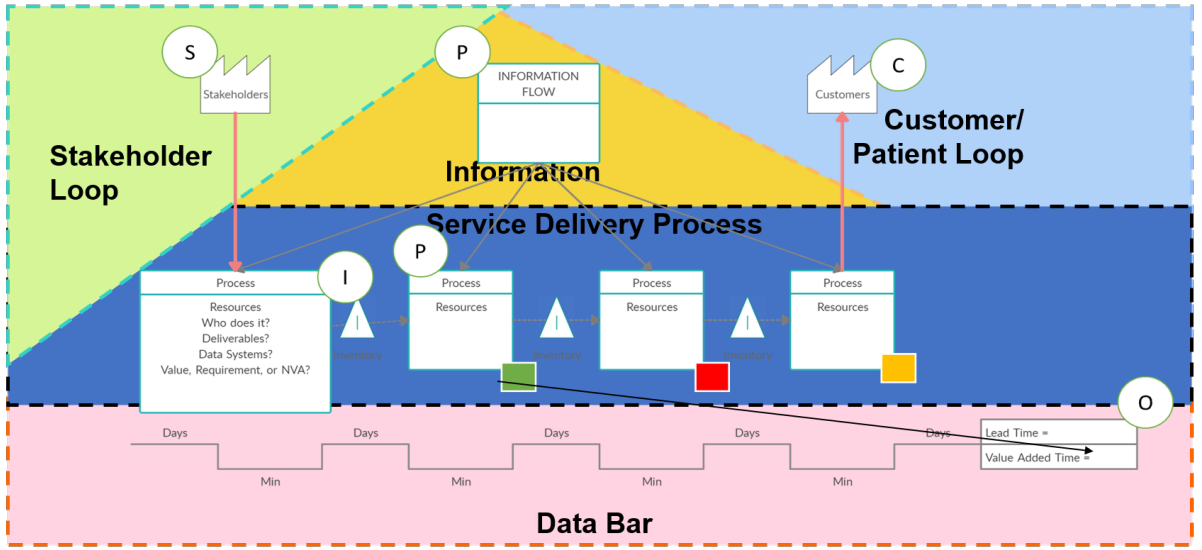
Agree on icons that will be used

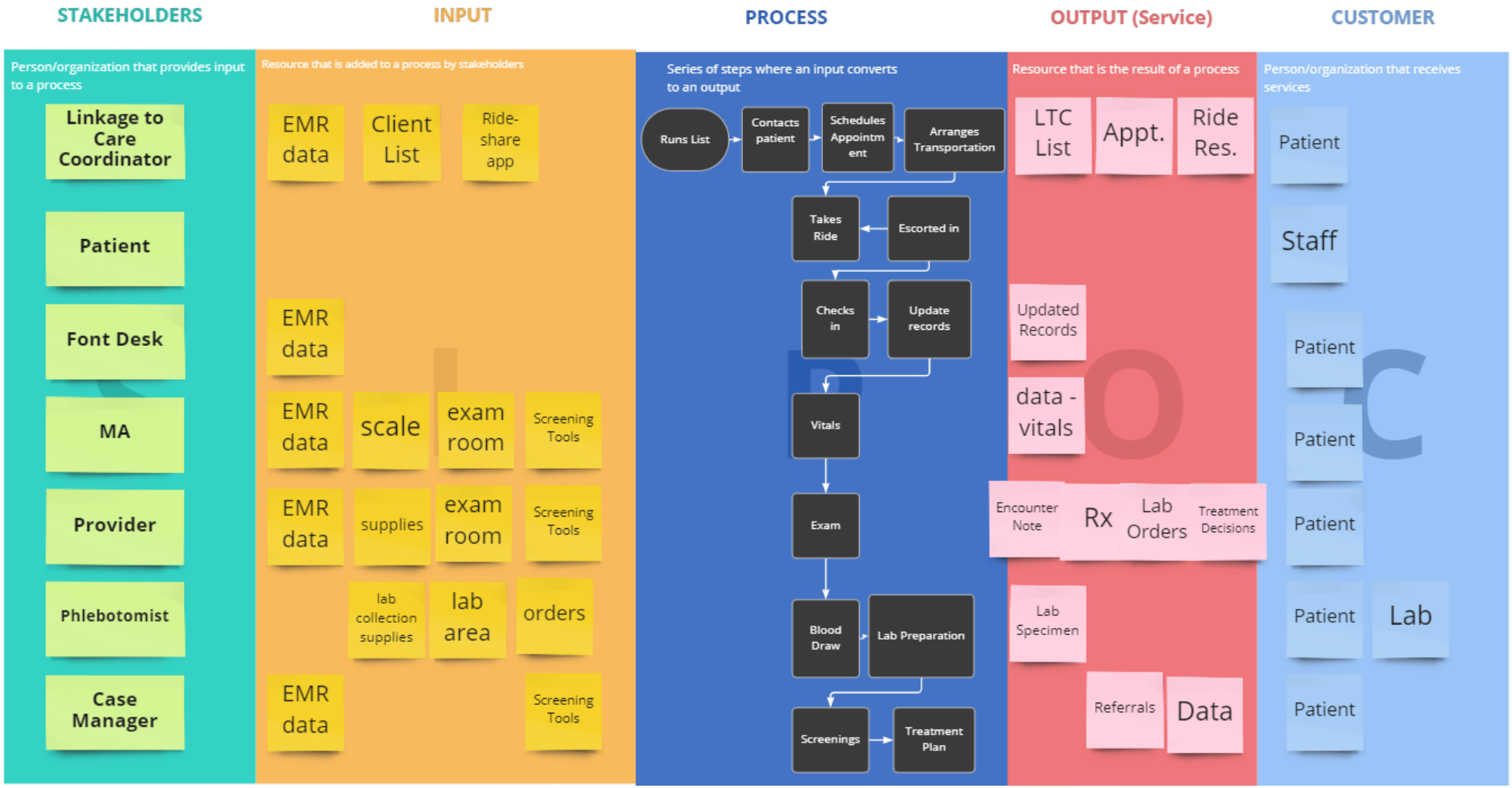
Keep it simple, but good enough

# SIPOC to VSM




## Anatomy of a VSM

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scale
exam room
Screening Tools
EMR data
supplies
exam room
Screening Tools
lab collection supplies
lab area
orders
EMR data
Screening Tools
Runs List
Contacts patient
Schedules Appointment
Arranges Transportation
Takes Ride
Escorted in
Checks in
Update records
Vitals
Exam
Blood Draw
Lab Preparation
Screenings
Treatment Plan
LTC List
Appt.
Ride Res.
Updated Records
data - vitals
Encounter Note
Rx
Lab Orders
Treatment Decisions
Lab Specimen
Referrals
Data
Patient
Staff
Patient
Patient
Patient
Patient
Lab
Patient

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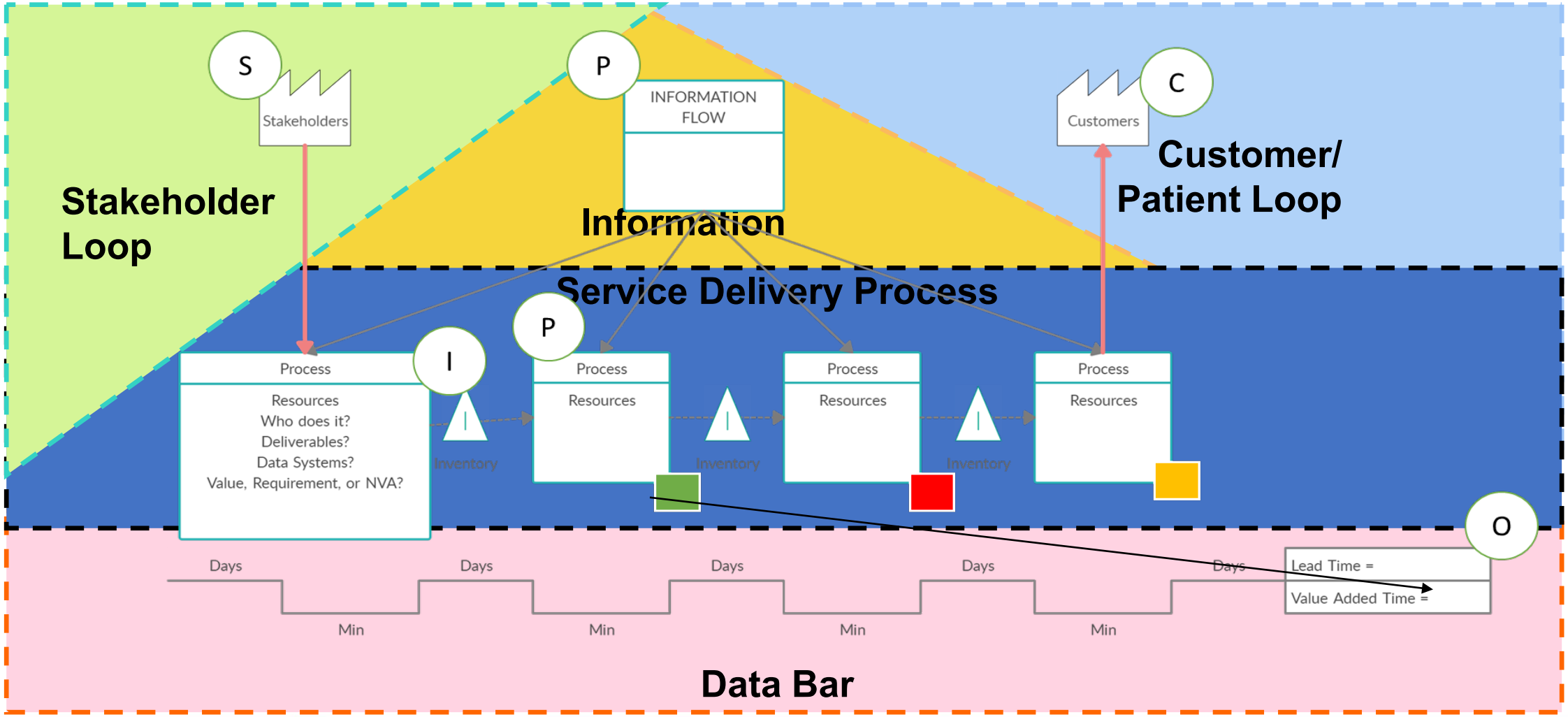
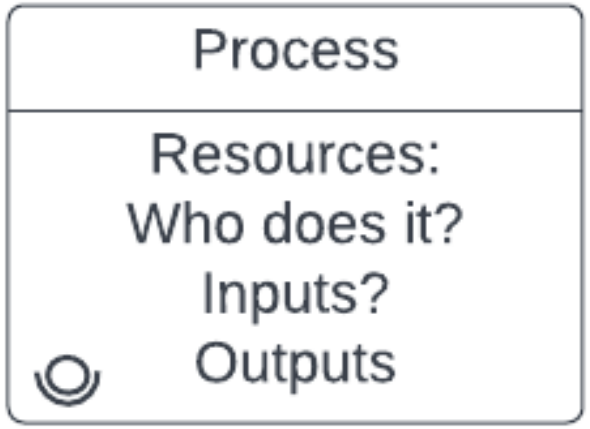


# Process Analysis Questions

- How many staff are engaged per process step?
- How many patients are in the system at a given time?
- Can the team identify lean wastes in the process (8 wastes, overburden, unevenness)?
- Can the variation between clients needs be measured?
- Where are the wait times?



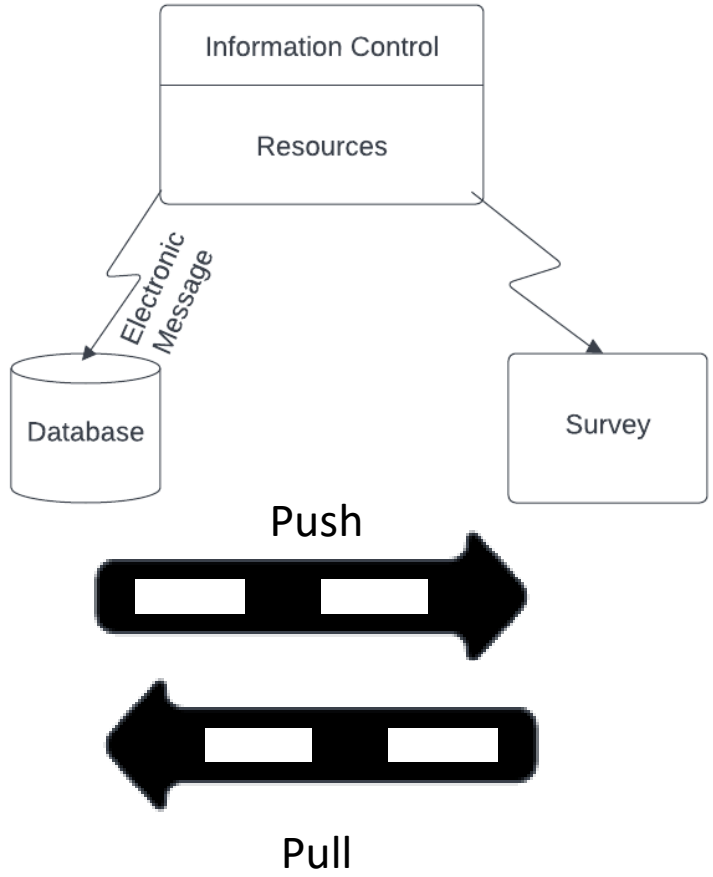
# Stakeholder Loop Questions



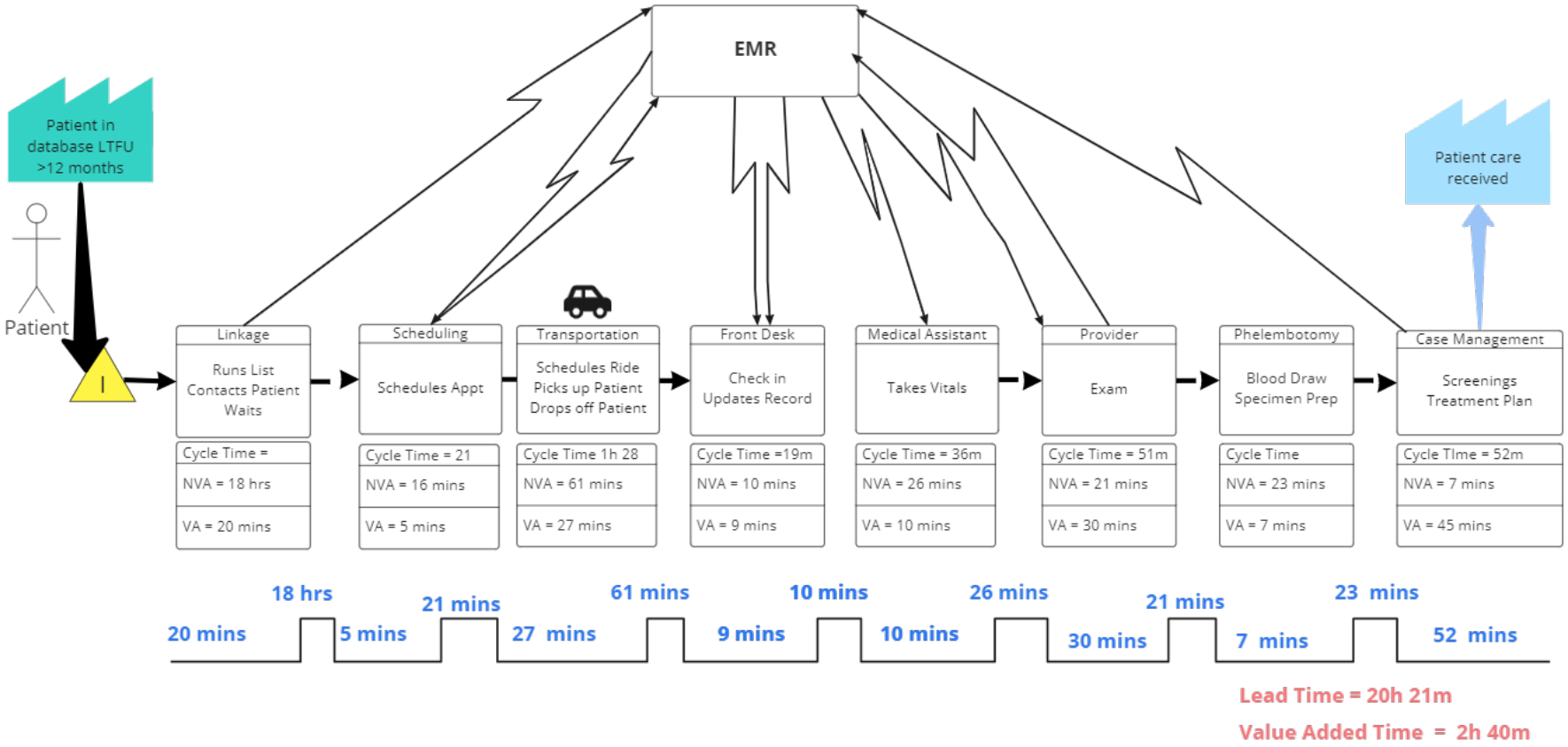
- Key question: how do you communicate to stakeholders what you need?
  - Resources
  - Information
  - Support
- What upstream processes affect our process being improved?
- What is the flow coming into the scope of what we are trying to improve?
- Do we have a training program for this process?
  - Is there any cross-training?
  - Is there currently a clearly defined set of policies and procedures
  - Do they align with current service standards?

# Information and Flow Questions

- How many services can we do at one time?
- How long does it take to go from need to service initiation?
- How do we react to emergencies?
- Is their waste in our data systems?
- How is the process handed off from one step to the next initiated?
  - Who is involved in the hand-off?
  - How frequently does a hand-off occur?
  - What is the process of communication?
  - **Consider both stakeholders and clients**



# Case Study | VSM Example

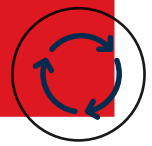


# Analysis of VSM Data Boxes



**Takt Time:** the amount of time it takes to complete the process to keep up with demand

**Cycle Time** the amount of time it takes for an individual step



**# of People** the number of staff involved in the step

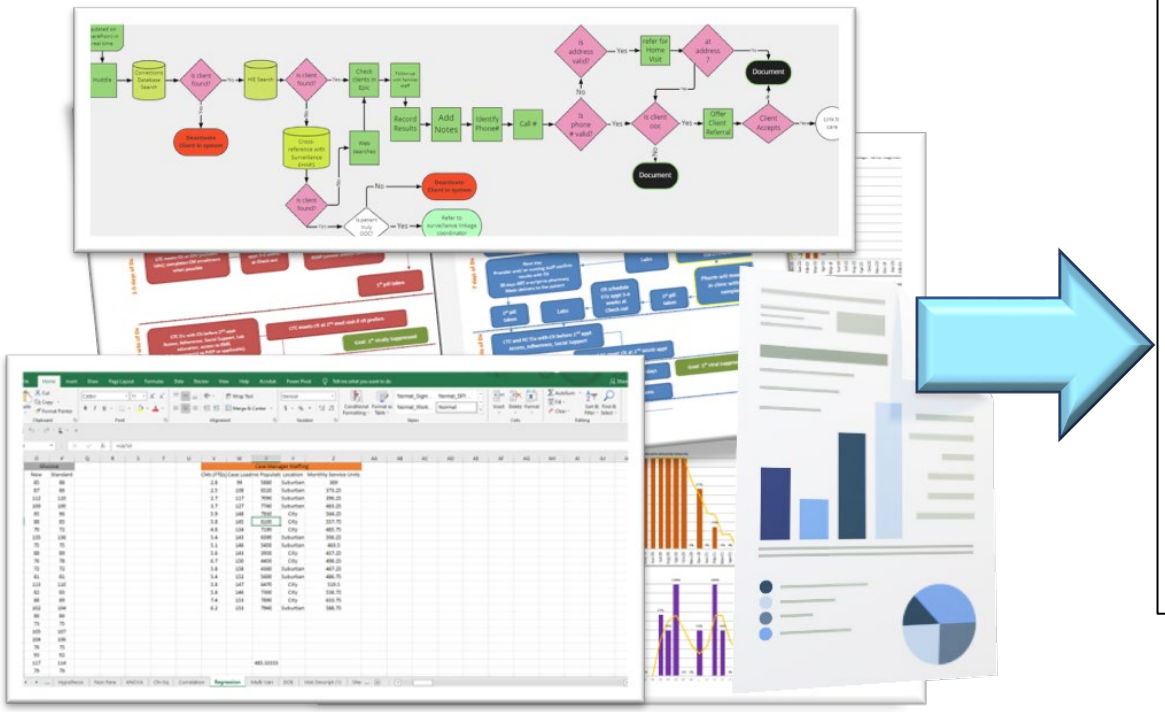
**Inventory** the number of patients or items "waiting"

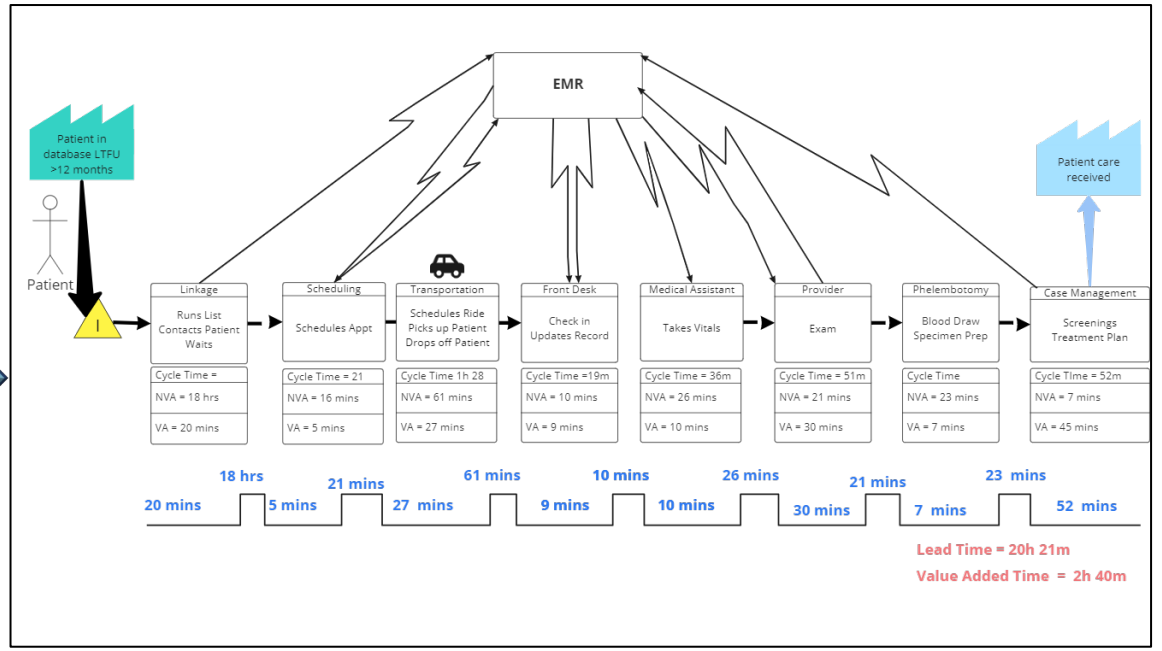
**Lead Time** Total time from initiation of process to end from client perspective

**Experiential Data** Voice of the customer tools and EBCD feedback

# When to Use a VSM

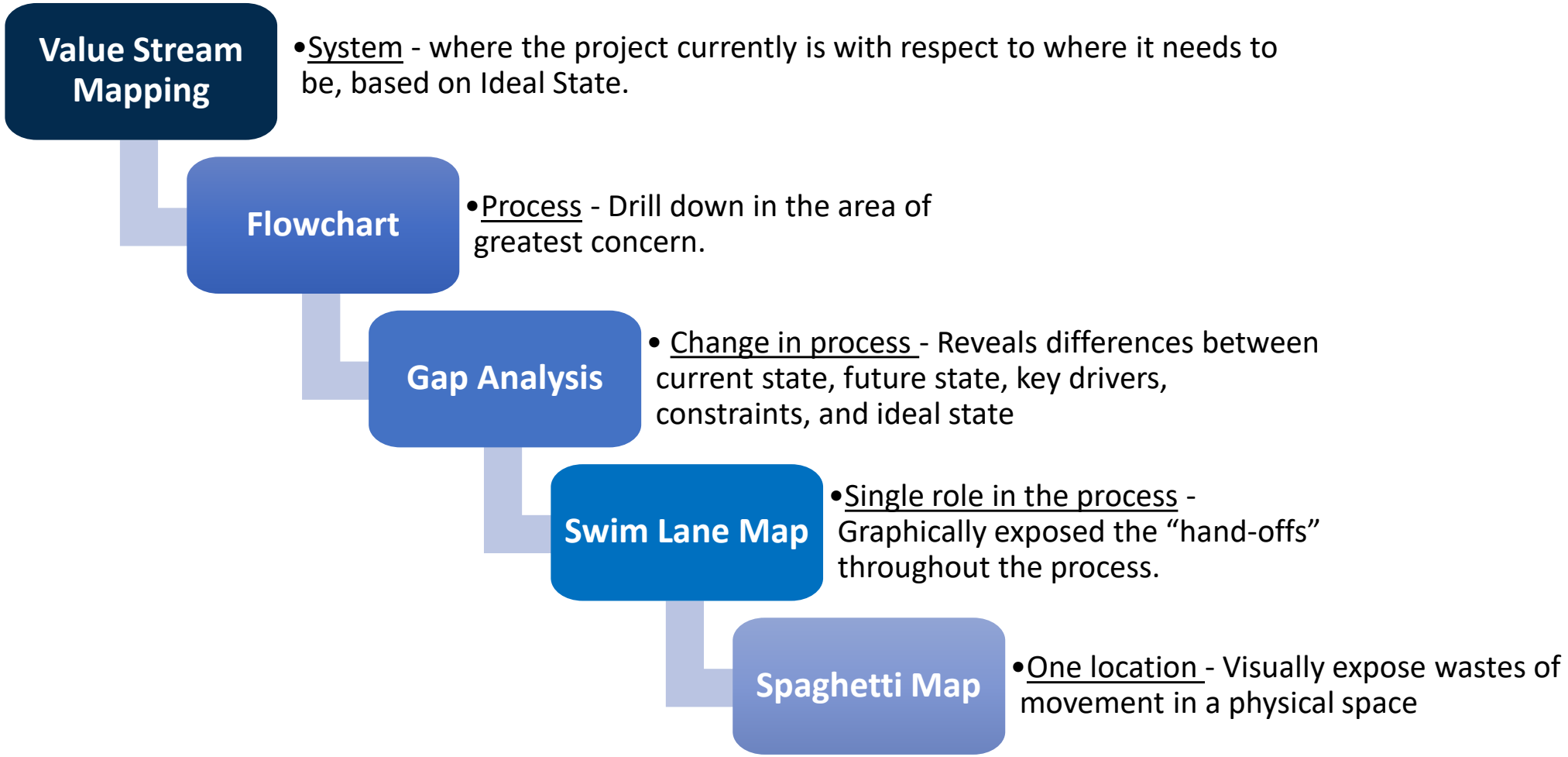
**To quickly see relationships between processes, people and information clearly with meaningful metrics.**






*A well crafted VSM can replace 2 adjoining flow charts, three swim-lane maps, and two data reports*

# Drilling Down on a VSM for Improvement Cycles



# Some VSM Tips

- **Once overall map is sketched out:**
  - Verify accuracy by asking a representative of one or two departments depicted to walk the Gemba again with the map
- **Ask questions to help you understand:**
  - The goal of the process
  - Client requirements of the process
  - Employee impressions of the process's ability to meet client requirements
  - Typical/exceptional process steps
- **Capture time and value from staff and patient/client perspective!**

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# Metrics and Measurement Histograms & Control Charts

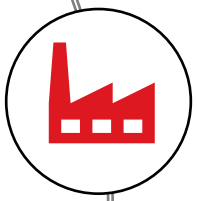
Understanding and Analyzing a process with data

# Process Measures



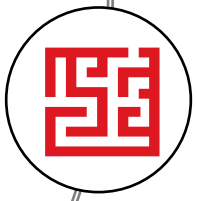
## Time Metrics

- Evaluate the time to deliver a service to client, the portion of time that is spent processing, and if a client is waiting



## Output Metrics

- Track the production or activity of agency processes; such as bags of food delivered, or lab tests conducted, encounters done



## Process Complexity Metrics

- Describe the complications and nature of a process, such as the number of steps in a process, number of decision loops etc.

## Step Measures

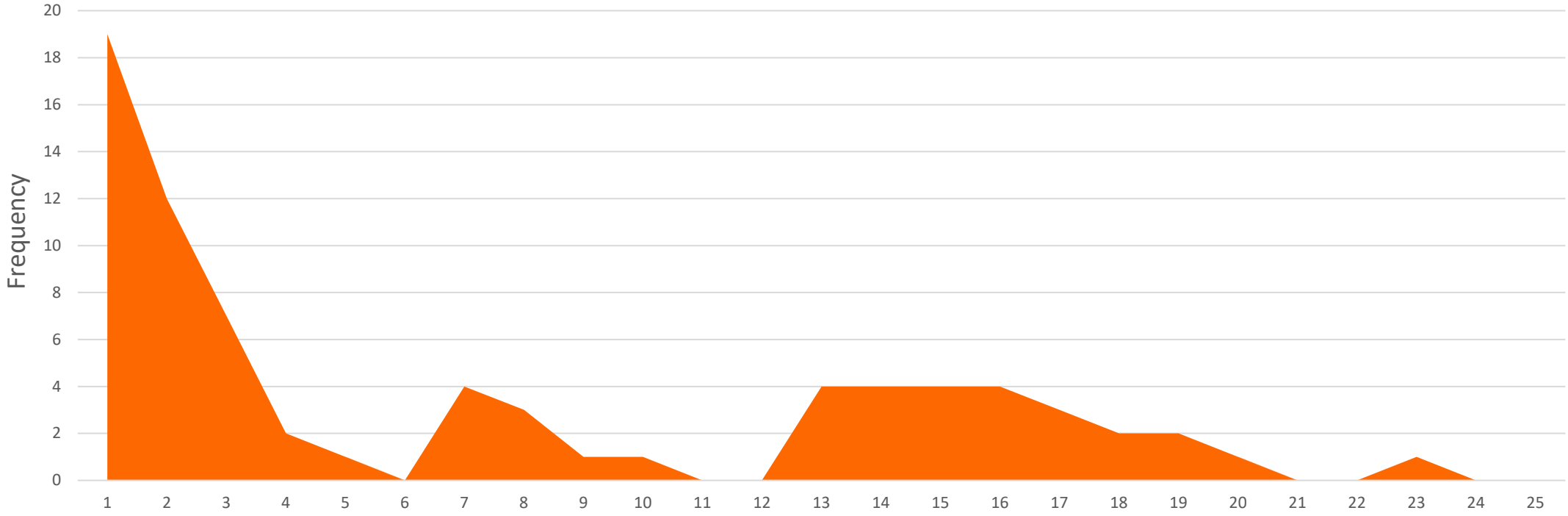
- Process measures that are focused on parts of a process and represent the work of individuals and teams

# Time & Value

- It can be difficult to quantify actual value while we're working on actual improvement cycles, since value is often captured in outcomes such as improved lab values, cost savings, and experience or satisfaction measures.
- By looking at time we get a good proxy for what adds value in the process
  - **Value Added Time**
    - Sum of all value-added time in a process.
  - **Non-Value Added Time**
    - not just wait time, sum of anything spent on NVA
  - **Percent Value Added Time**
    - Value added time/total lead time

# Histograms Show Us…

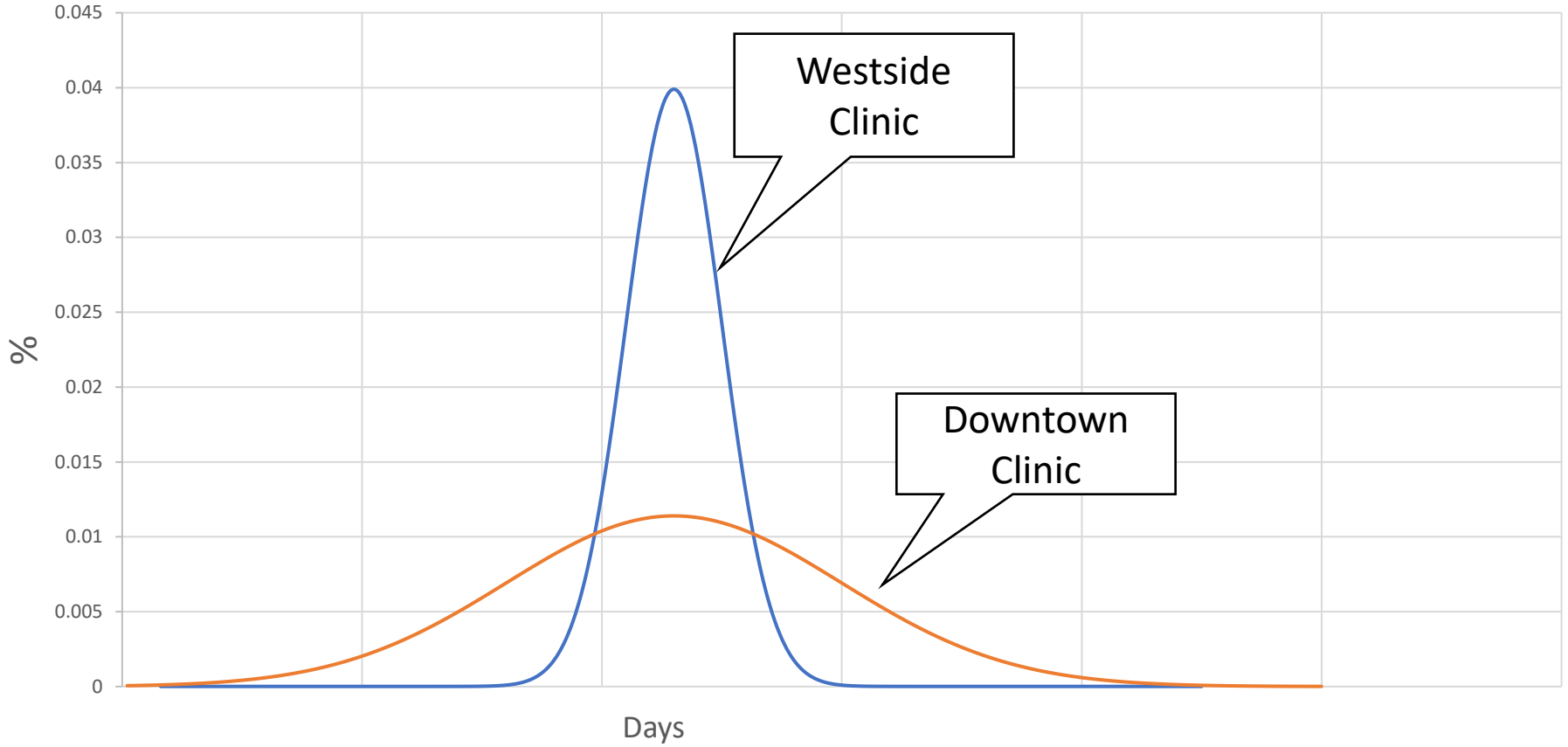
## …the pattern of the distribution in a set of data:




N=75

# Distributions

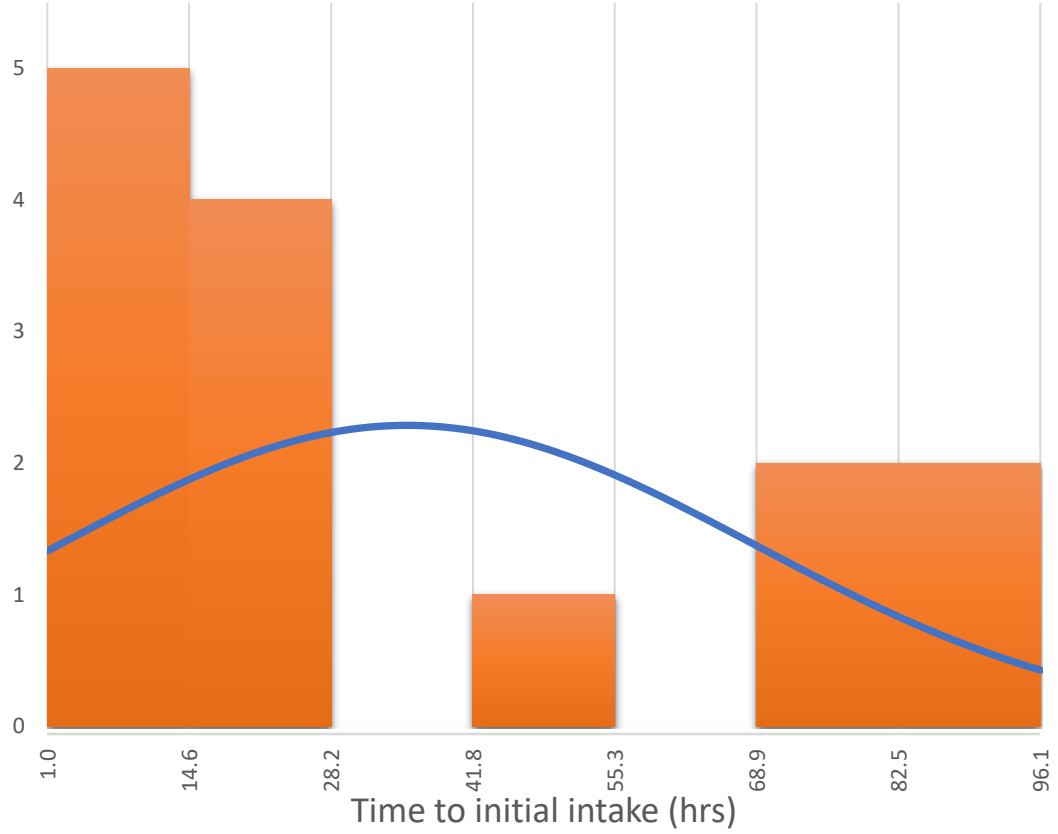
## The frequency of various outcomes in a dataset




*Data Analysis can't just rely on averages – These two clinics both got patients initiated on ART in seven days on average.*

*However seeing where the data plots landed shows there are actually quite different.*

# Case Study Histogram




## Time to initial intake (hrs)

Count = 14 patients
Mean = 35.429
StDev = 33.154
Range = 95.00 hrs.

Minimum = 1.000 hr.
Median = 20.5 hrs.
Maximum = 96 hrs.

**NOT NORMAL DATA**

# Analysis

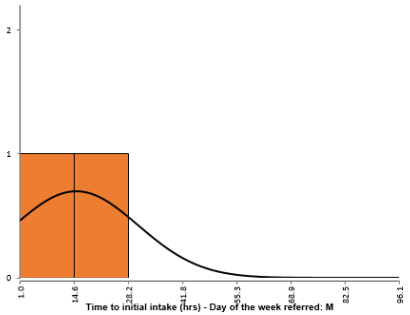
Gleaning insights from data

# How to Assess Process Data

- As advanced QI practitioners, here is how we look at a process:
  - **Graphically – What do see?**
    - Normality – Shape of the curve, is it a bell?
    - Stability – Process in control
    - Capability – Meeting goals and expectations
  - **Analytically – What can we infer?**
    - Correlation -- Relationships
    - Significance – Probability of something surprising or different
  - **Practically – How is this useful for our project?**
    - Subject matter expertise – Does this jive with staff knowledge?
    - Lived experience – Can we put the data in context by engaging patients?
    - Common sense – Let's take a moment to reflect on what the stats are telling us.
    - **Data should enhance intuition, not replace it!**

# Stratify by Days of Week

## Monday

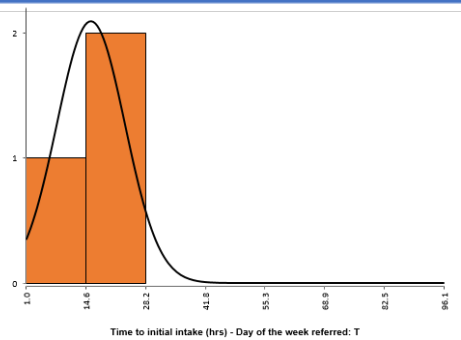



**Time to initial intake (hrs) - Day of the week referred: M**

Count = 2
Mean = 15
StDev = 15.556
Range = 22.00

Minimum = 4.000
Median = 15
Maximum = 26

## Tuesday

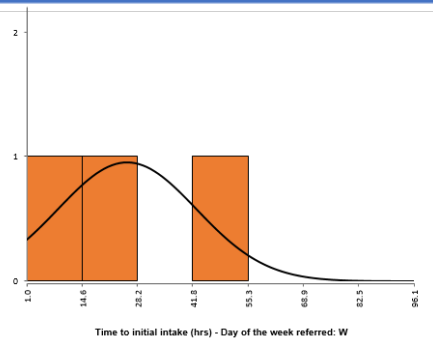



**Time to initial intake (hrs) - Day of the week referred: T**

Count = 3
Mean = 15.667
StDev = 7.767
Range = 15.00

Minimum = 7.000
Median = 18
Maximum = 22

## Wednesday

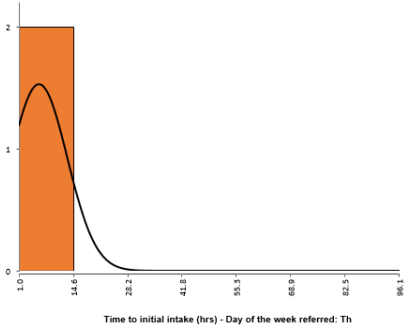



**Time to initial intake (hrs) - Day of the week referred: W**

Count = 3
Mean = 25.667
StDev = 17.010
Range = 32.00

Minimum = 13.000
Median = 19
Maximum = 45

## Thursday

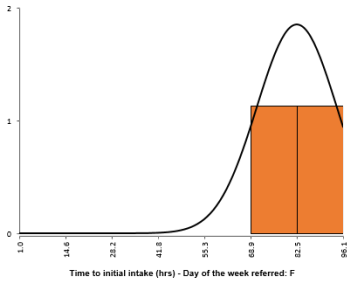



**Time to initial intake (hrs) - Day of the week referred: Th**

Count = 2
Mean = 6
StDev = 7.071
Range = 10.00

Minimum = 1.000
Median = 6
Maximum = 11

## Friday




**Time to initial intake (hrs) – Day of the week referred: F**

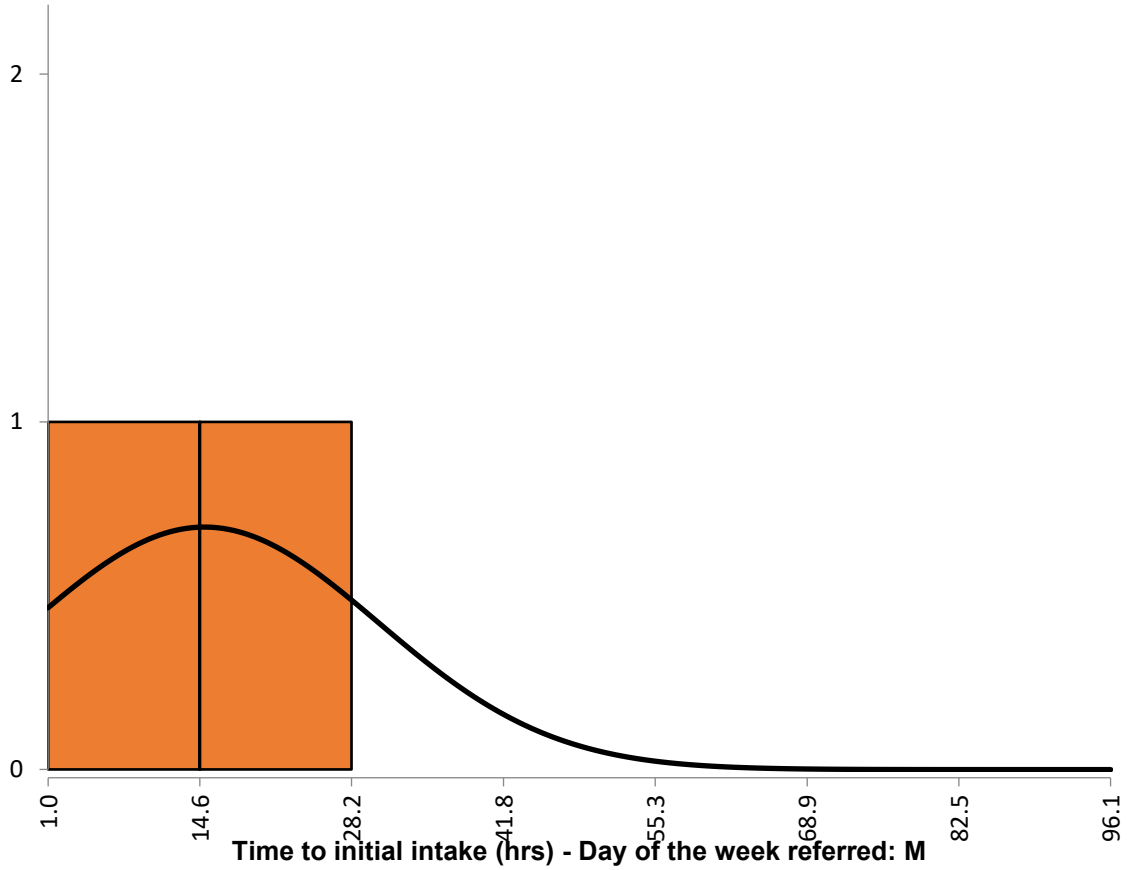
Count = 4
Mean = 82.500
StDev = 11.705
Range = 26.00

Minimum = 70.000
Median = 82
Maximum = 96

**NORMAL DATA**

**What should we do next?**
**Is this common cause or special cause variation?**

# Monday

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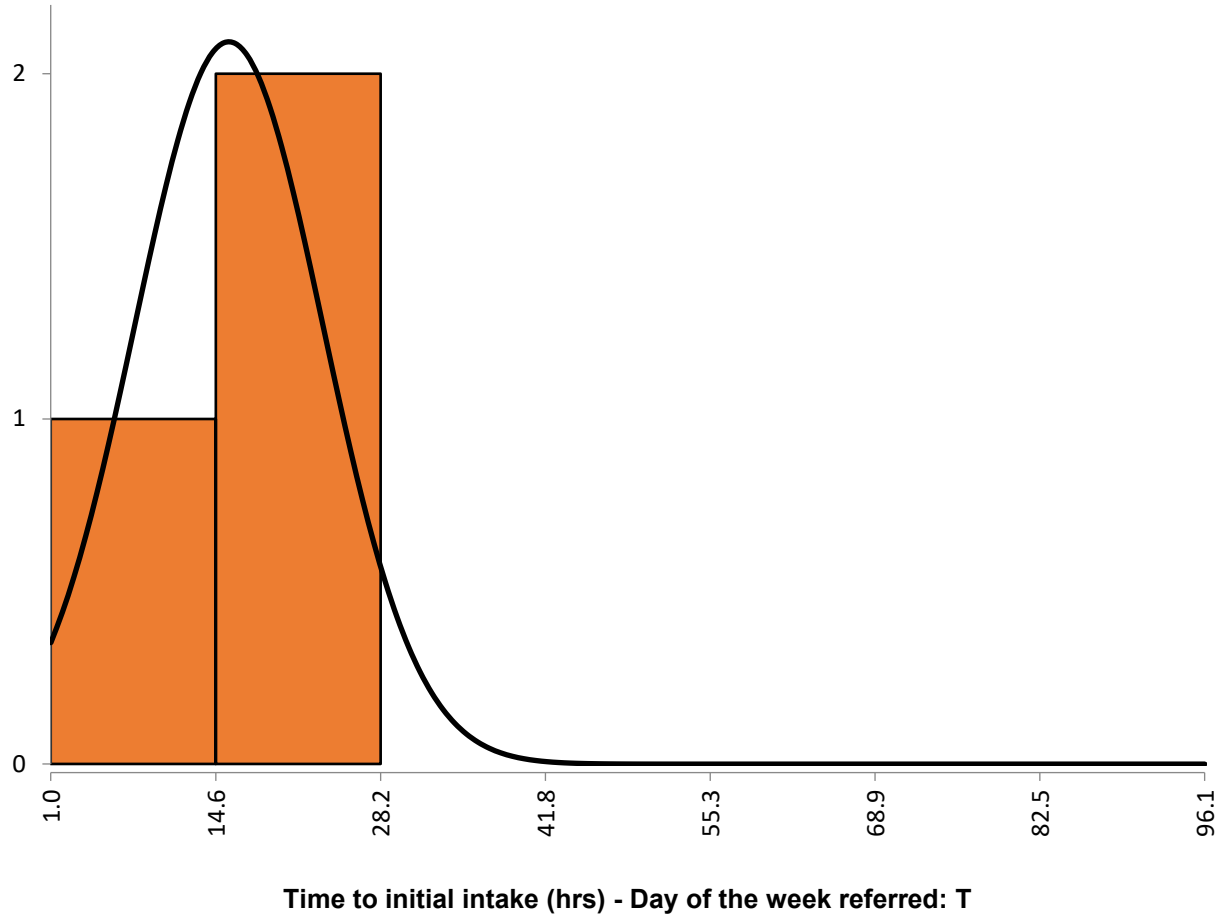


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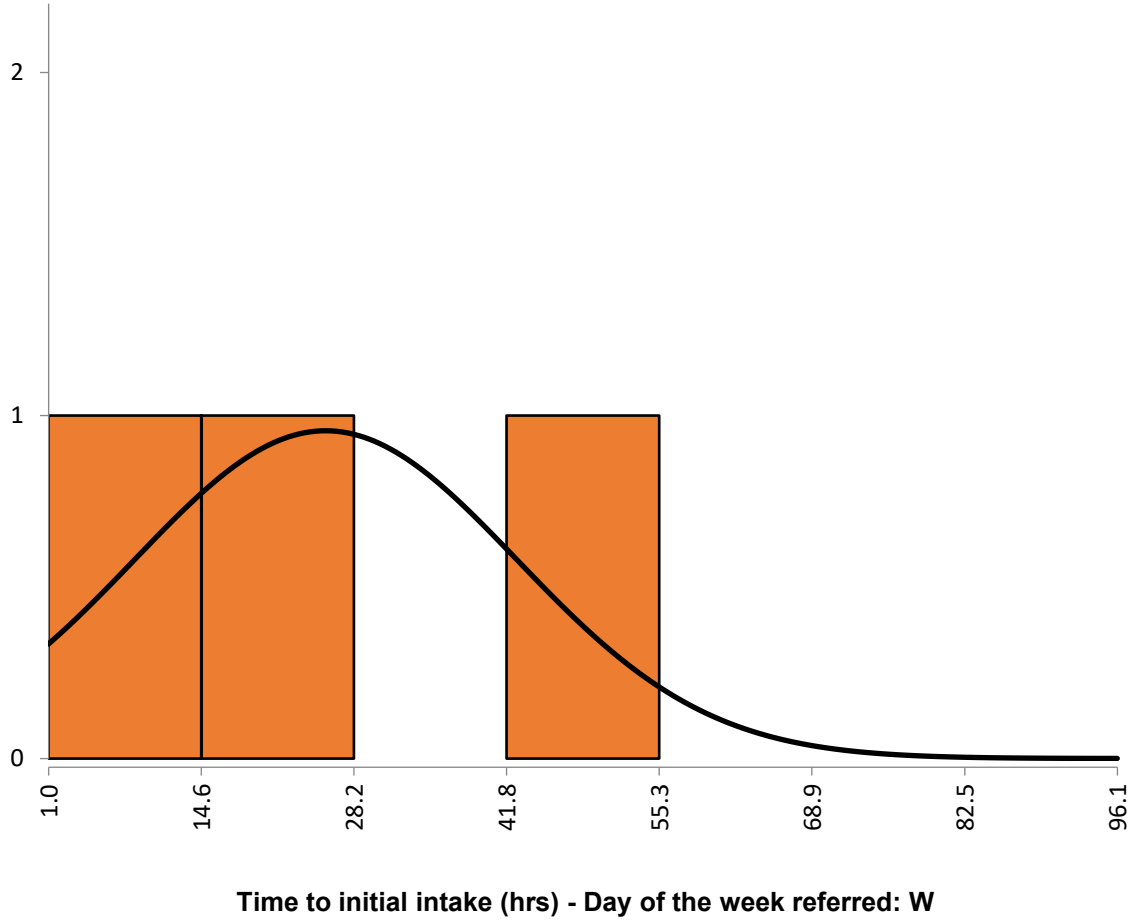


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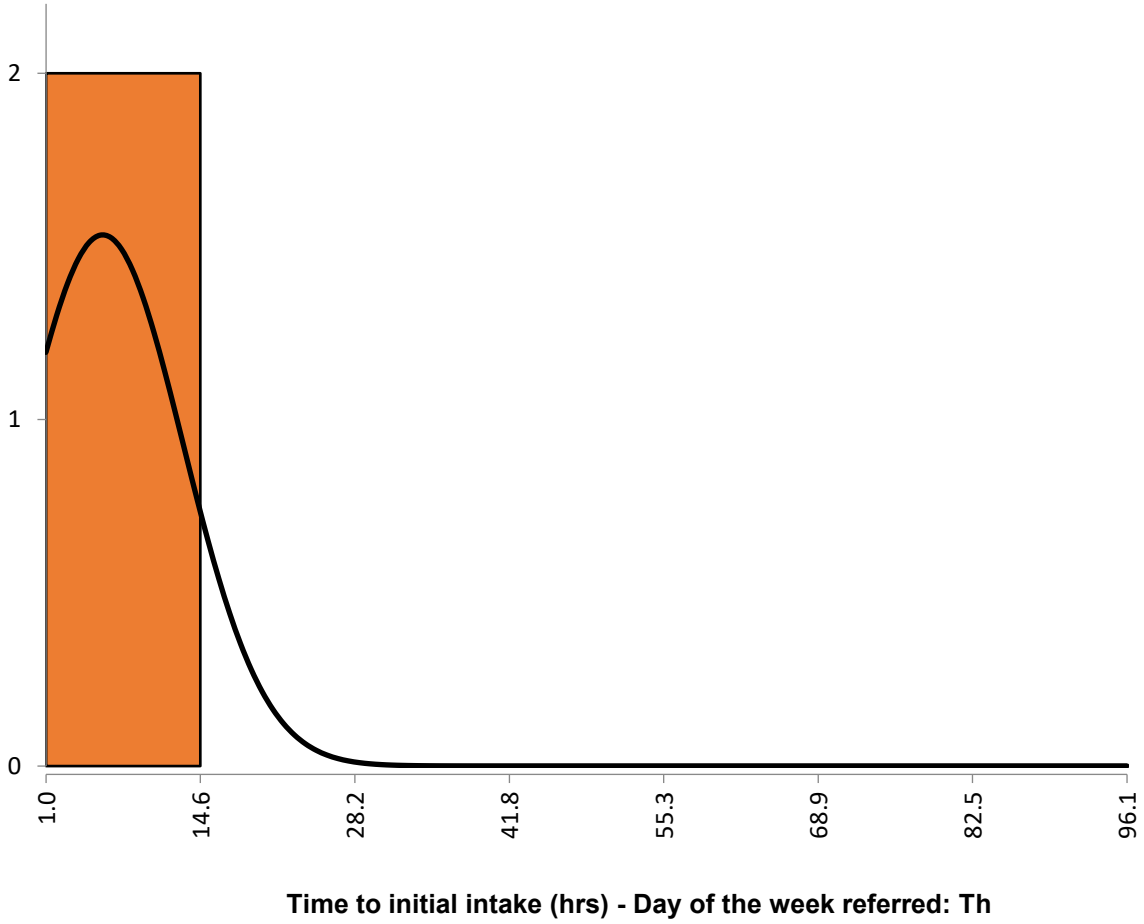


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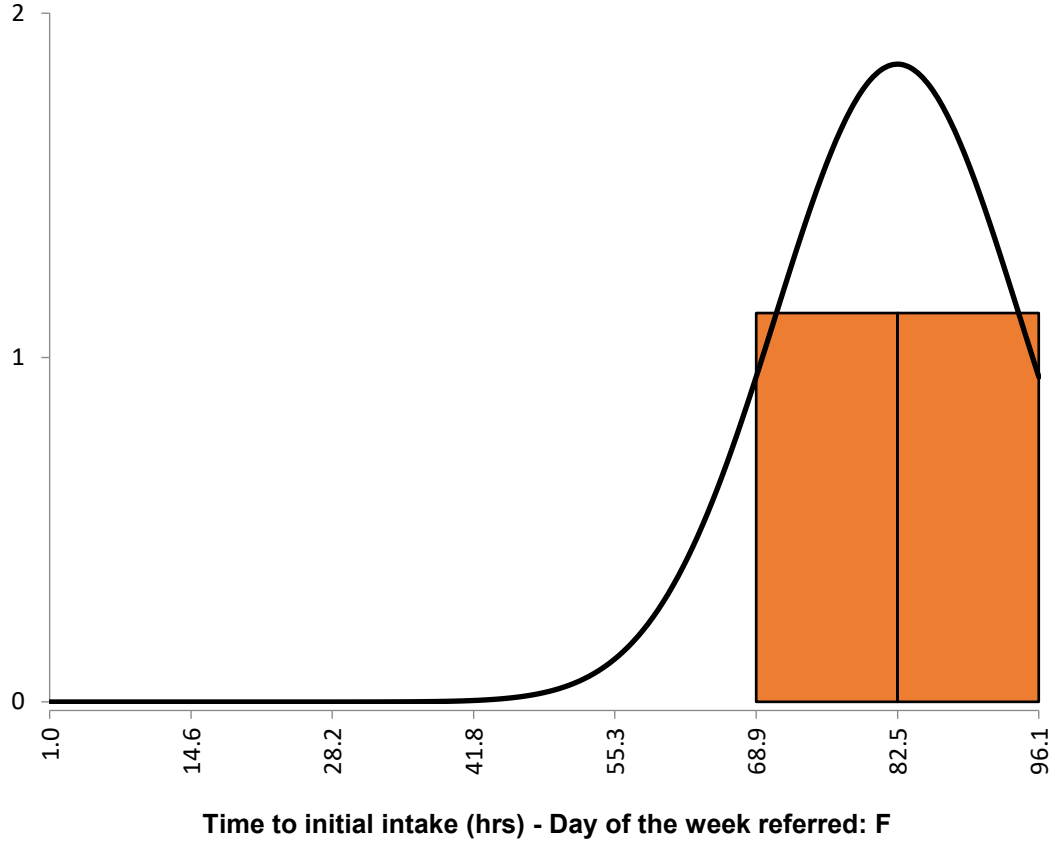



**Time to initial intake (hrs) – Day of the week referred: F**

Count = 4
Mean = 82.500
StDev = 11.705
Range = 26.00

Minimum = 70.000
Median = 82
Maximum = 96

**NORMAL DATA**

# Capability

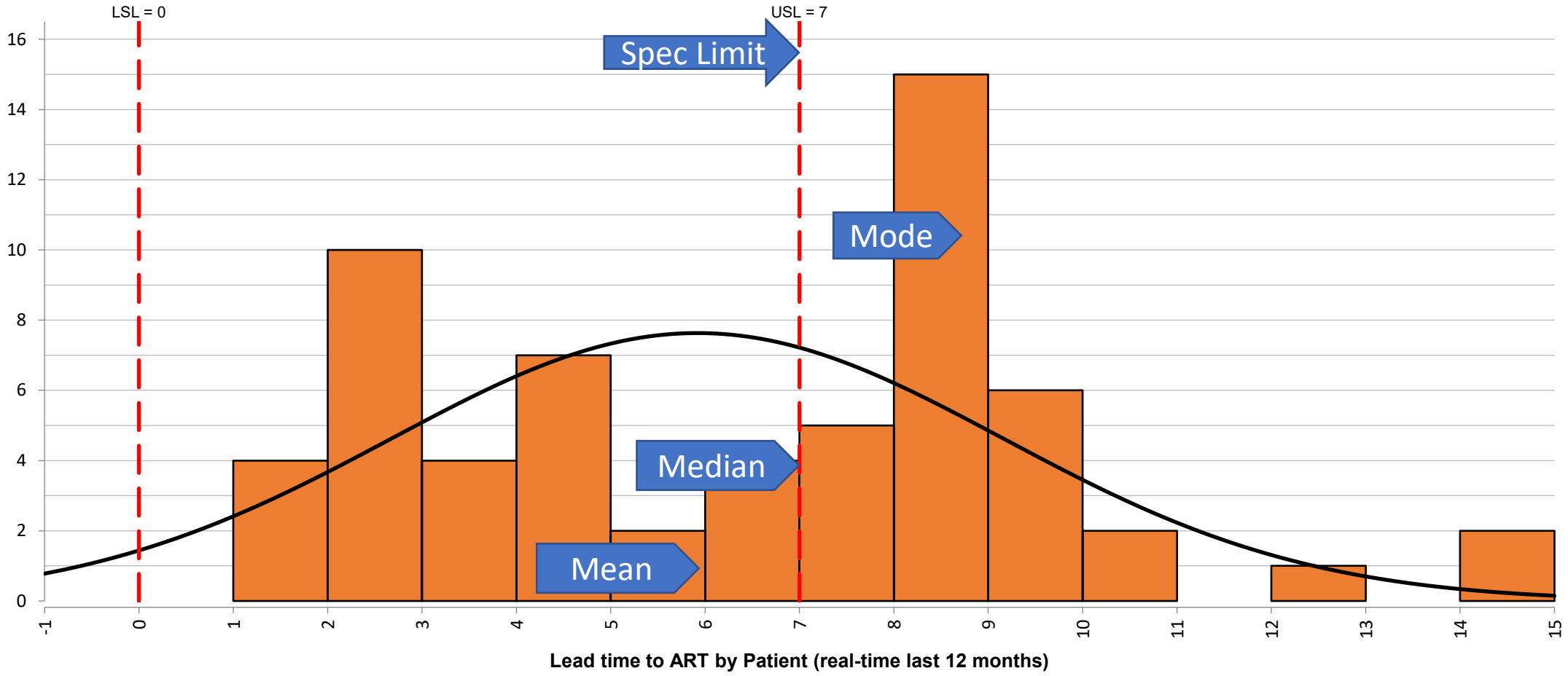
- **Specification limits**
  - Set by standards of care or the project team, informed by the voice of people with HIV.
  - Answers the question of how well the process is meeting patients needs and expectations
- **Process capability**
  - Compares the output of an in-control process to specification limits using capability indices
  - Answers the question of how well a process meets a patient's expectations

# Stability & Control

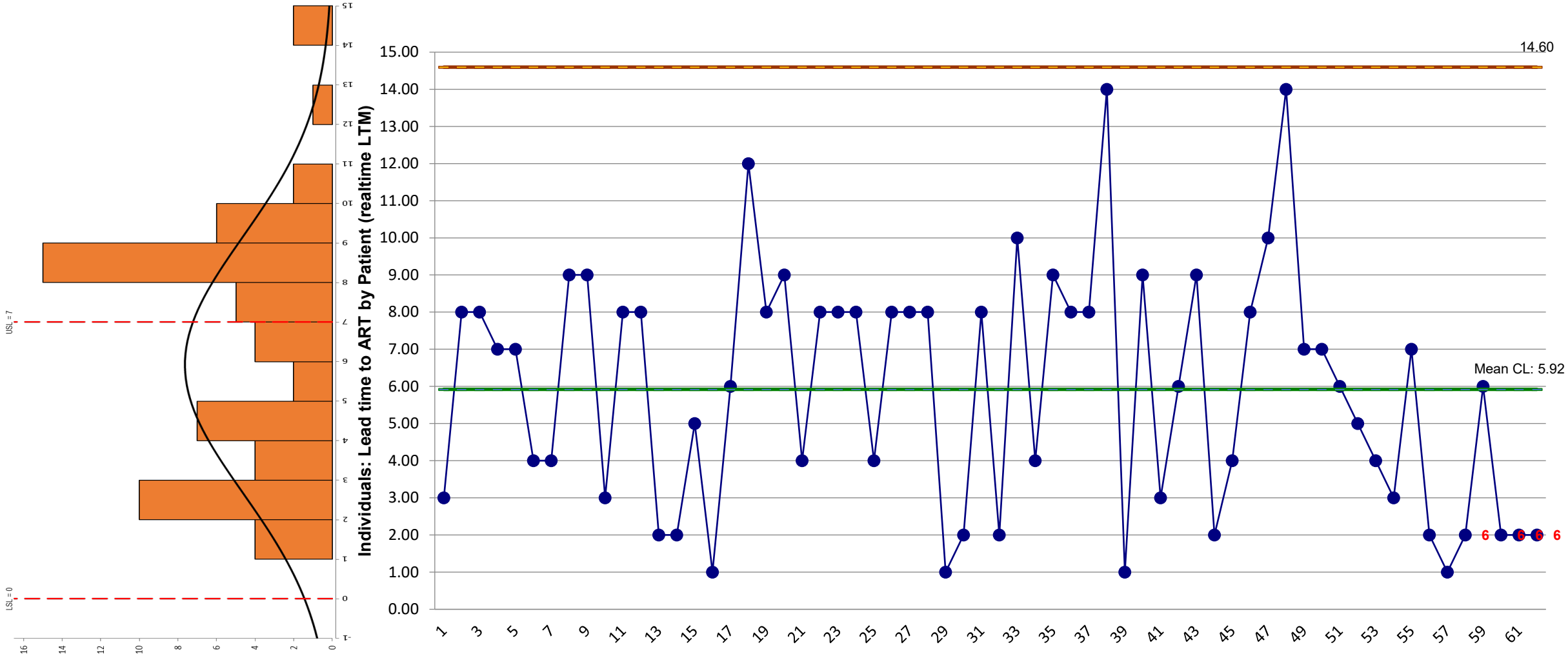
- **Stability**
  - A process is said to be stable if the data are consistently distributed over a sufficient length of time.
  - When a process does not exhibit signs of unnatural variation, then the process is said to be stable or in control.

- **Control Limits**
  - The natural or acceptable limits of variation from the mean
  - Commonly set at +/- 3 standard deviations (sigma $\sigma$)

# Case Study | Process Capability



# Case Study | Stability



# Implementing Changes FMEA

Mitigating risk in improvement cycles

# Failure Mode & Effects Analysis (FMEA)



With a long history in private industry and the military, FMEA is a step-by-step approach for identifying possible failures in a design, a process, or a product or service. It is a common analysis tool for QI projects.

- **Failure modes**: means the ways, in which something might fail. Failures are any errors or deviations from quality, especially ones that affect the clients, and can be potential or actual
- **Effects analysis**: refers to studying the consequences of those failures, potentially even before they happen

# Failure Modes and Effects Analysis



- A risk assessment tool to identify, analyze, prioritize, and document
  - potential failures modes
  - their effects
  - possible failure causes
- What will the client experience if said sub-process fails?
  - How severe will it be?
  - How likely is that to occur?
  - How difficult will it be to detect the process failure?

# Types of FMEA

| | | | |
|---|---|---|---|
| **System FMEA** | Analysis of systems and subsystems | Early stage of project to scope and refine Key Drivers | **Prioritizing and Defining Project** |
| **Process FMEA** | Analysis of problems in an existing process being improved | Pre-Improvement Process | **Planning Stage of PDSA – root cause** |
| **Design FMEA** | Analysis forecasting a new process for implementation | Ideal State to Future State | **Improve or Do Stage of PDSA** |

# Common FMEA Headers

- **Function:** What step or sub-process is facing a problem?
- **Failure Mode:** Think about the 8 wastes
- **Effects:** If unwanted outcomes occur, what is the consequence?
- **Severity (1-10):** 10 is most severe; MUST involve clients for their experience
- **Cause:** Why is the failure happening? – take from root cause analysis
- **Detection (1-10):** 10 is most likely, how do we catch an error with current process—quantify it.
- **Likelihood (1-10):** 10 is most likely, again quantify it, think back to Pareto charts and 80-20 rule.
- **Risk Priority:** Calculate RP by multiplying *Severity x Risk x Detection*
- **Recommended Action:** What is the plan for high risks based on the analysis?
- **Responsibility:** Person or team leading the charge for recommended actions?

# FMEA Template & Focusing Questions

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| Process Step | Requirement | Failure mode | Effects of failure | Severity | Causes | Likelihood | RPN | Recommended actions | Ownership | Date due |
|---|---|---|---|---|---|---|---|---|---|---|
| name, ID number, etc. | Critical function from lived experience or service provision | What can go wrong with this process step? | consequential impact on patients, staff, and other processes | 1-10 | list all underlying factors | 1-10 | risk priority number | steps required to reduce severity and occurrence and increase detection | organization, team, or individual responsible | target date |
| Correlate to flowchart or VSM | "Why do we do this?" | "What's the problem?" | How does the problem effect health outcomes, service delivery efficiency or people with HIV experience?" | "How serious is the problem, how do we know?" | "What is the root cause?" | "How often does it happen" | Severity multiplied by Likelihood | "What can we try to stop this from happening?" | "Who – specific roles and teams?" | "When" |

**Technical Definition** **Facilitation Guidance**

# Case Study Example
# Process FMEA

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| Failure Modes & Effects Analysis (FMEA) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| # | 1<br>Process Step | 2<br>Potential Failure Mode | 3<br>Potential Effect of Failure<br>(Regulatory,<br>Reputational,<br>Monetary,<br>Team Member<br>Experience,<br>Efficiency,<br>Control) | 4<br>Severity of Impact / Failure<br>(1-does not affect performance,<br>3-minor loss / performance issues,<br>5-extreme team member<br>dissatisfaction,<br>or 10-illegal / out of compliance) | 5<br>Potential Cause | 6<br>Probability of<br>Occurrence<br>(1-rarely,<br>3-monthly,<br>5-weekly,<br>or 10-daily) | 7<br>Current Controls<br>(what exists that<br>can prevent or<br>detect the<br>failure?) | 8<br>Lack of Detectability with current<br>tools in place<br>(1-defect is obvious,<br>3-defect obvious due to regular QC,<br>5-defect obvious with random QC,<br>or 10-defect not obvious) | 9<br>Risk Priority<br>Number<br>(4*6*8) | 10<br>Risk Decision<br>(Mitigate or<br>Accept) | 11<br>Action Taken |
| 1 | Patient takes ride to clinic | Customer not available when transportation arrives | **Team member experience<br>Efficiency** | 4 | Customer forgot | 5 | **None** | 1 | **20** | Accept | None |
| 2 | Patient has medical exam | Long encounter length and clinic runs over | **Team member experience;<br>Reputational;** | 6 | Clinic efficiences | 5 | **Scheduling last patient visit 20m before clinic closes** | 1 | **30** | Mitigate | Schedule red carpet recaptures 40m before clinic closes |
| 3 | Blood draw | Hard stick and difficulty obtaining specimen | **Customer experience;<br>Efficiency** | 5 | Client not sufficiently hydrated (not reminded or provided water) | 1 | **None** | 1 | **5** | Mitigate | Include hydration reminder in appointment reminder; provide client a bottle of water when arriving for appointment |

# Failure Modes and Effects Analysis

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- Higher RPN indicates a stronger need to take action to mitigate risks.
- Not all risks need to be mitigated.
- Scales for severity, probability, and detectability should be customized to your program.

# Using FMEA to Choose or Implement Interventions

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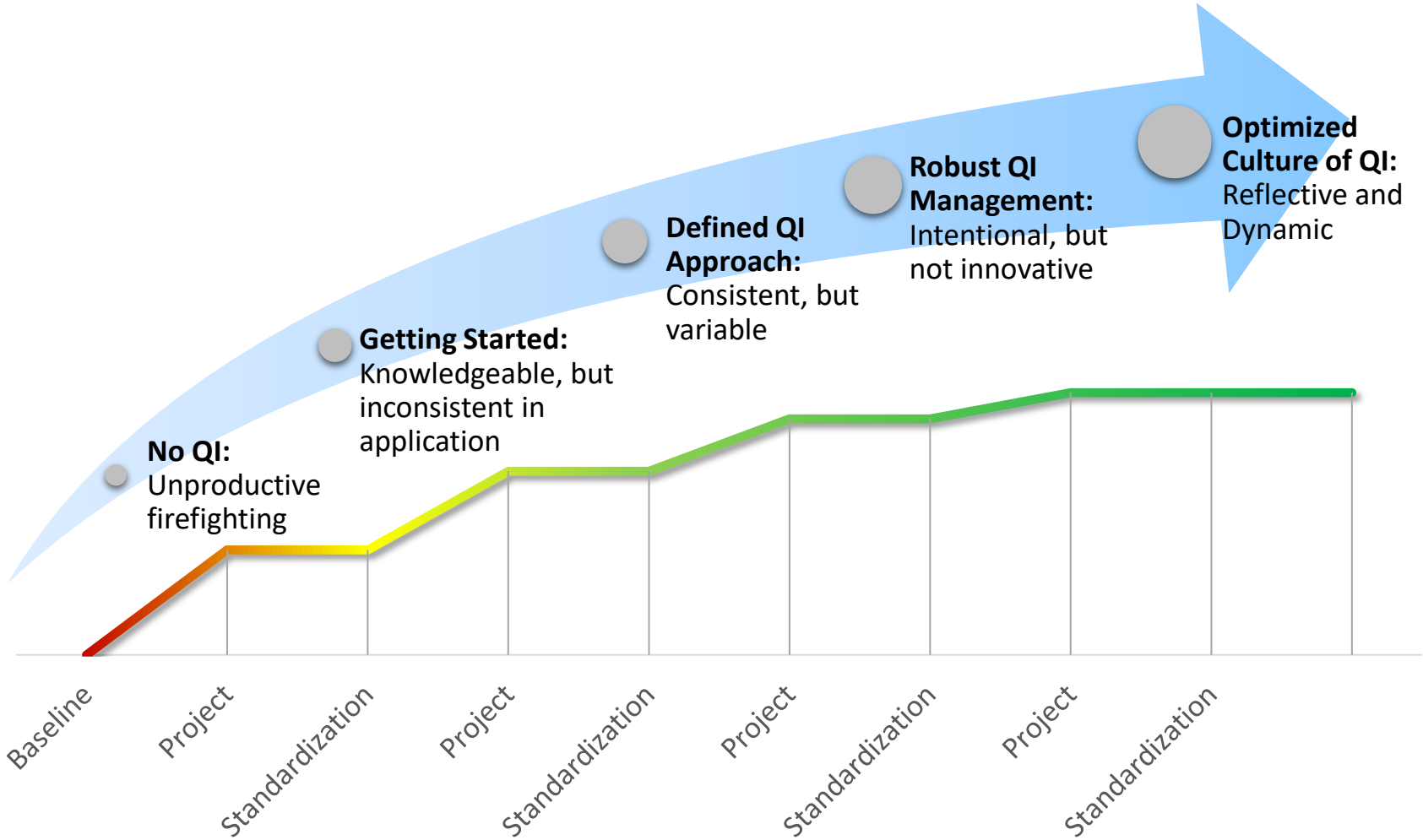
**Scenario:** Deciding between a stepped approach to ART supported by marketing materials and incentives or patient self-care plans to improve Viral Load Suppression Rates among young MSM of color.

| Intervention | Failure Modes | Effects | Severity | Cause of Failure(s) | Likelihood | Risk Priority | Action Recommended |
|---|---|---|---|---|---|---|---|
| Stepped ART | • Current stakeholders, staff, and process doesn't have capacity to support intervention | Intervention won't be implemented quickly, faithfully, or with a majority of critical components. | 10 – Very high | • Don't have resources for DOT<br>• Therapist has little formal CBT training<br>• No budget for gift cards – haven't worked in the past. | 9- High | 90 | Do not pursue this intervention |
| Patient Self-Care plans | • Relies on patients being activated enough to engage and respond to surveys to refine | Plan is developed, but not followed-through. Not enough experience captured to troubleshoot and customize the ongoing plan. | 6 - Moderate | • Patient doesn't respond to surveys<br>• Intervention can motivate patients, but it cannot account for other crises | 5 - Moderate | 30 | Solid idea worth trying, 1st PDSA cycle should focus on patients with a history of some engagement and ability to complete surveys |

# Acting on Results Sustainability/Control Plan

Standardization towards a culture of quality

# Standardization & Sustainability



# Standardization & Sustainability

NATIONAL RYAN WHITE CONFERENCE ON HIV CARE & TREATMENT

| | No QI | Getting Started | Defined QI Approach | Robust QI Management | Optimized Culture of QI |
|---|---|---|---|---|---|
| **Need to Standardize:** | Responsibilities, QI approach and tools, training, basic infrastructure | Alignment of people, projects, and measures towards a defined vision | QI tools, specific performance metrics, and results | Complex relationships between, systems, metrics, and outcomes | Incentives to promote joy and combat complacency |
| **Project Outcomes:** | Unpredictable results with little impact | Results variable, based on skills and experience of a few key individuals | Problems can be attributed to non-value added steps in process with some confidence | Challenges are identified and addressed proactively using reliable data to sustain | World class-- this program is the example that others follow; sustained with a culture of quality |

# Control Plan

- A living document, driven by inputs critical to performance.
- Without a control plan, the successes your team has gained are at risk of back sliding.
- Develop the control plan before the project team adjourns. The vital few inputs and process steps have been identified; review the data and develop criteria for when performance is acceptable, needs review, or does not meet specification. For every input, document
  - Where the data is collected, stored, analyzed, and distributed to
  - What action(s) to take if performance changes

# Control Plan

| Project Name: | | R-ART Engagement 2022-04 | | Process Owner: | | Senior Director of Case Management | | | Creation Date: | | | 27-May-22 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Department: | | Case Management | | | | | | | Revision Date: | | | |
| KPI Being Tracked | Critical Process Step to Monitor | Critical To Process (CTP) | | Process Criteria | | | How are we Collecting Data? | Where is Data Coming From? | How Often will we Collect Data? | How Often will we Review Data? | Who Measures the Data? | Decision Rule / Corrective Action |
| | | Key Input (Xs) | Key Output (Ys) | Red | Yellow | Green | | | | | | |
| Lead Time to Rapid ART prescription | Scheduling appointment for patient | Referral | Initial intake | 48> hours | 25-48 hours% | 1-24 hours | Document referral in Referral module and initial intake using "Red Carpet - N/P" visit type | EMR | Daily | Weekly | Case Management Supervisor | Review the median number of hours from referral to intake, by week. Use the Process Criteria in columns E/F/G.<br><br>Yellow: Circulate data with front desk, case management, and medical team during weekly clinical huddle. Action steps to be decided by that group.<br><br>Red: Share data with above group via escalated email. Share data with Medical Director. Meet during the end-of-day huddle to review data and determine action steps. |

# Closing Thoughts

More context to understand the utility of advanced tools and concepts

# Summary

- **Advanced tools can help distill complex systems into high-level visuals**
  - Having a charter helps others understand the project, and defines a tighter scope = focused, achievable project.
  - Since QI is rooted in process improvement, taking the time to plan and define up front with tools is a valuable investment for the duration of the project
- **Applying basic graphical statistical methods moves a team beyond an educated guess**
  - The first step is to move beyond looking at outcomes and understand processes graphically
- **Person centered continuous process improvement, standardization, statistical control, and knowledge management are the foundations of sustainability**
  - Fancy tools are wasted effort if your team and culture aren't embracing the criteria above

# Additional Resources

## WEBSITES:

**ASQ** - https://asq.org/
Search their site for information and examples of QI tools

**Lean Enterprise Institute** - https://www.lean.org/

## BOOKS:

**The Quality Toolbox** – Nancy R. Taque

**A3 Problem Solving for Health Care** – Cindy Jimmerson

**LSS Pocket Toolbook** – Michael L. George

**Learning to See:** Value Stream Mapping to Add Value and Eliminate MUDA – Rother & Shook 1999

**Standard Work for Lean Healthcare** – Thomas L. Jackson, 2012

# CQII at the RW Conference

# Other CQII Workshops

NATIONAL RYAN WHITE CONFERENCE ON HIV CARE & TREATMENT

- Advanced QI: Advanced QI Tools to Improve Your Clinical Quality Management Program: Learn from Lean and Statistics [ID#: 20467]
  - August 25th, 3:30pm – 5:00pm ET
- Patient Involvement in QI: Engaging People with HIV in Quality Improvement: Best Practices to Meaningfully Engage and Involve Patients [ID#: 20468]
  - August 25th, 3:30pm – 5:00pm ET
- PROMS/PREMS: Incorporating the Patient Voices in Quality Improvement: PROMS and PREMS – An Emerging QI Topic [ID#: 20003]
  - August 25th, 3:30pm – 5:00pm ET
- Creating Equity Using Quality Improvement to Make a Measurable Difference: Interventions from the create+equity Collaborative [ID#: 20469]
  - August 25th, 11.15am – 12:45pm ET


Thank
you!


## Contact Information

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