Advanced Quality Management: Learn about QI Tools You Might Not Have Ever Used Before

Center for Quality Improvement and Innovation: Nanette Magnani, EdD; Julia Schlueter, MPH; Justin Britanik, BS; Charles Kolesar, RN, MPH

CQII Overview

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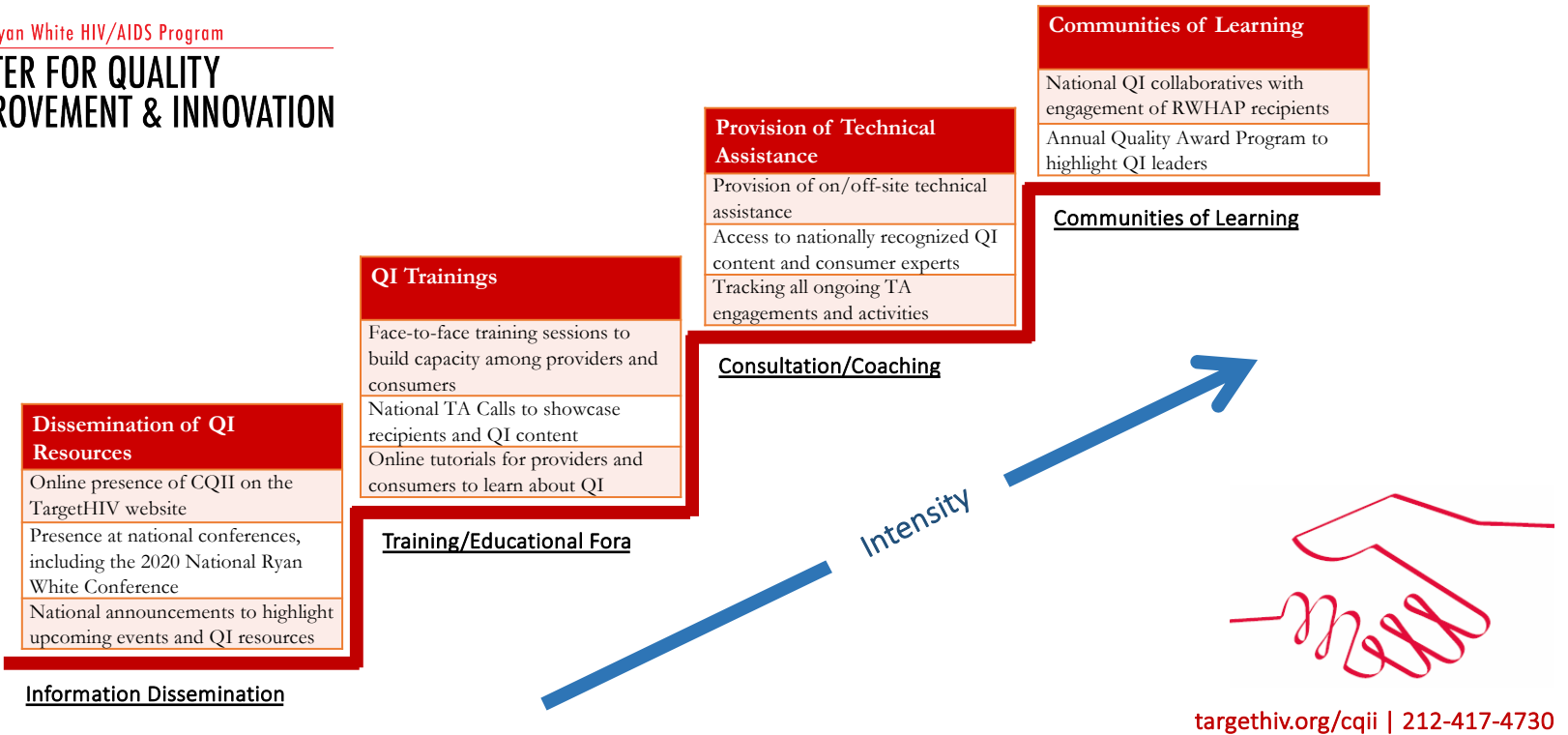**CENTER FOR QUALITY IMPROVEMENT & INNOVATION**

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

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

Communities of Learning

National QI collaboratives with engagement of RWHAP recipients

Annual Quality Award Program to highlight QI leaders

Communities of Learning

Provision of Technical Assistance

Provision of on/off-site technical assistance

Access to nationally recognized QI content and consumer experts

Tracking all ongoing TA engagements and activities

Consultation/Coaching

QI Trainings

Face-to-face training sessions to build capacity among providers and consumers

National TA Calls to showcase recipients and QI content

Online tutorials for providers and consumers to learn about QI

Training/Educational Fora

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

Intensity

targethiv.org/cqii | 212-417-4730

Advanced QI Tools

- This workshop, facilitated by CQII staff and nationally recognized quality improvement (QI) experts:
  - Nanette Magnani
  - Julia Schlueter
  - Justin Britanik
  - Charles Kolesar

Agenda

- Introductions and Learning Objectives – Charles Kolesar
- Case Study QI Project: Rapid Start – A3 Sheet Overview – Nanette Magnani
- SIPOC Diagram Overview – Justin Britanik / Julia Schlueter
- Flowcharting/Value-Stream Mapping Overview – Justin Britanik / Julia Schlueter
- Related QI resources – Julia Schlueter
- Additional CQII resources – Charles Kolesar
- FAQs - Team

Learning Objectives

At the end of this session, participants will:

- Learn about three advanced quality improvement (QI) tools for use in HIV programs

- Learn about the application of different advanced tools in busy clinical quality management programs

- Understand how to use advanced QI tools in current and future QI projects

- **Develop Project Goals**
  A3 Project Charter

- **Describe Current Process**
  SIPOC Diagram
  Value Stream – Current State

- **Develop Improvement Theory**
  FMEA

- **Describe Improved Process**
  Value Stream Map – Future State

- **Adopt**
  Kanban
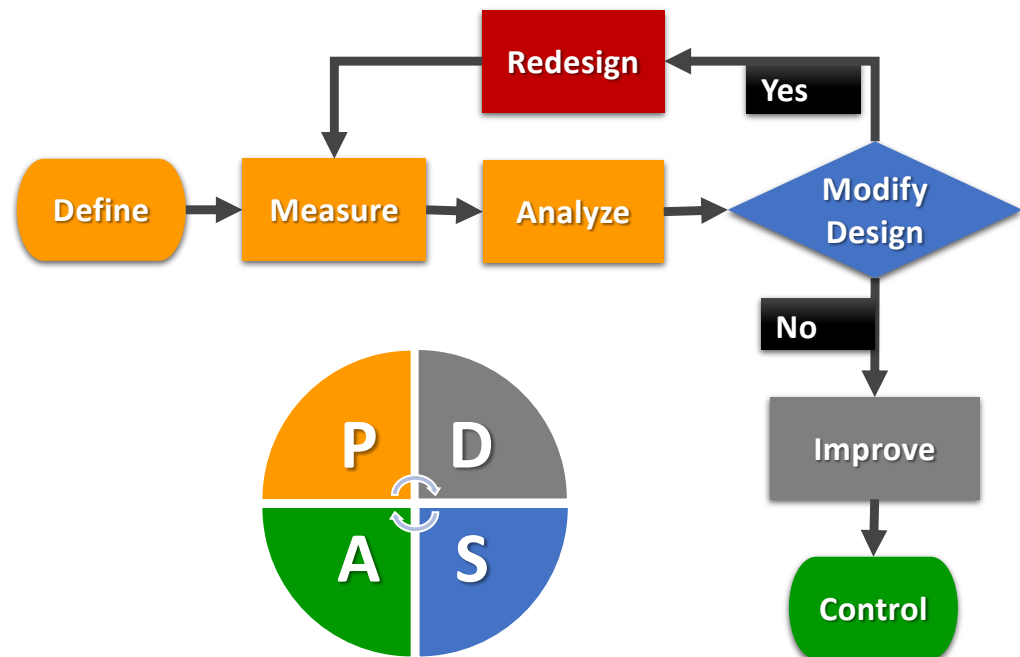
Case Study – QI Project Rapid Start

Note: This Case Study is a composite of FQHC experiences but is inspired by a QI project completed at Crescent Care in New Orleans, an FQHC, RWHAP-funded clinic, presented by Dr. Jason Halperin, MD, MPH. Thus, not all of the information presented here is factual about that project.

For more information specific to the original QI Project please contact, Jason.Halperin@crescent care.org.

Case Study: Rapid Start

Background

- The Parts A and B RWHAP programs have received Federal money to End the HIV Epidemic (EHE) in their state
- Rapid Start is one of the strategies being promoted to EHE
- There is significant senior leadership support across departments
- Research supports same-day treatment resulting in reduced time to viral suppression

Background (cont.)

- The RWAHP team at Neighborhood Health Center (NHC) has had success in its prior QI projects on improving viral suppression and patient retention rates. Team members have participated in CQII collaboratives, TA calls, and some have participated in QI trainings
- QI Project Team
  - Linkage Coordinator
  - Testing Coordinators from NHC
  - Patient Navigator
  - Front Desk
  - Client Services Coordinator
  - Nurses and Providers
  - PWH

Measures

- Outcome Measure
  - Viral suppression (HIV/AIDS Bureau measure)
- Process Measures
  - Linkage time in hours from knowledge of diagnosis to medical appointment with HIV provider
  - Time in days from diagnosis to first suppressed lab test
- Inclusion criteria:
  - Clients enrolled in the EIS program seen between 12/06/2019 – 01/31/2020

Baseline Data

- Annual clinic viral suppression rate (10/01/2018 – 9/30/2019)
    - 82% (1150 patients)
    - 56% (150 newly diagnosed patients)

- Process Measures
    - Linkage time – 112 hours; 14 days
    - Dx to Viral suppression – 89 days

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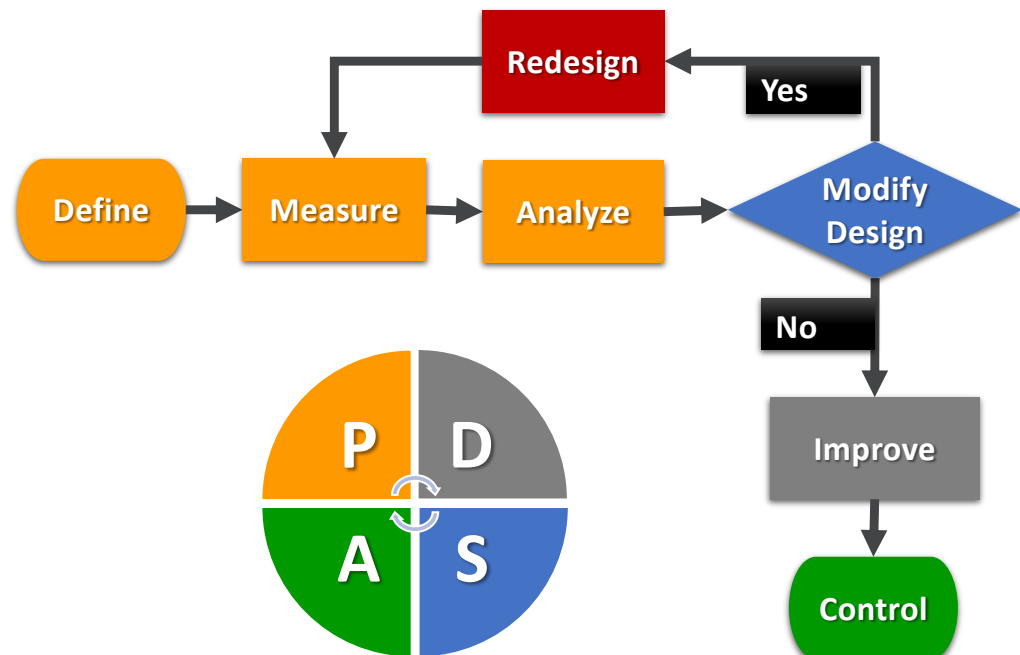 Value Stream – Current State

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A3 Planning, Tracking and Documentation Tool

- A3 is a Lean Six Sigma tool to
  - continuously track your team's problem-solving process; it shows the thinking behind your process
  - organize your work
  - condense work on an 11" x 17" size paper (derivation of A3 name)
  - document and report your QI work
  - could also be a QI project charter

VIRTUAL
2020 NATIONAL
RYAN WHITE
CONFERENCE ON
HIV CARE & TREATMENT
30 YEARS

A3 Template Project Name: < TITLE> Project Sponsor:

<date>
<sponsor>

CONTEXT / ISSUES
- What is the issue and why is it important to tackle now?
- What is the purpose, the business reason for choosing this project?
- What are the anticipated benefits to customers and staff from the project?
- What performance measure needs to improve?
- Have you been to the Gemba?
- What process/program/customer data do you have regarding the problem (time, cost, quality)? Show facts and processes visually using charts, graphs, maps, etc.
- When did the problem start?
- Where is the problem occurring?
- What is the extent or magnitude of the problem?

GOALS
- What specific, measurable , attainable, relevant, time-bound results do you want or need to accomplish?
- Show visually how much, by when, and with what impact.
- NOTE: Be careful not to state a solution as a goal!

SCOPE (IN BOUNDS)
- What is the first step and last step in the process?
- What is the program and geographic area?
- NOTE: Be mindful of what you can realistically accomplish with available resources and time.

SCOPE (OUT OF BOUNDS)
- What is off the table due to resources?
- What are the givens or assumptions for the project?
- Record out of scope issues in a "Parking Lot"

CUSTOMERS/STAKEHOLDERS
- Who is the end-user customer?
- Who are other stakeholders who have a role or interest in the success of the process?

TEAM MEMBERS
- Team Champion
- Team Leader:
- Team Members:

CUSTOMER REQUIREMENTS (CTQ)
- What do customers/stakeholders expect and require from the process? What are their critical to quality (CTQ) requirements?
- What legal requirements (laws, rules) govern the process?

VISION OF SUCCESS
- What outcomes or results do you want to see?
- What does success look like for our customer?
- What does success look like for other stakeholders (staff, partners)?

PROJECT MILESTONES & SCHEDULE

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		

RESOURCES
- Time commitment for a 4 day Kaizen, excluding time to implement changes: Sponsor (6-10 hrs.); Team Leader (40 hrs.); Team Members (32 hrs.); Facilitator (40-50 hrs.)
- External Resources:
- Equipment:
- Materials:

"Rapid Start QI Project" A3 Sheet

Project Title: A3 Rapid Start for Newly Diagnosed
Project Dates: Start: 12/1/2019   Projected Completion: 4/1/2020
Team Leader and Members: Facilitator:

Define Problem **From testing to start of medication time consuming** **Scope: confirmed test to scheduled f/up appt and labs**	**Plan**
Goals and Measures Reduce linkage time from 14 days/112 hours to 5 days/40 hours Reduce time to VL suppression from average 89 days to 30 days	**Implementation: Observations/Step Measurement Data**
Current State Map	**Results: Control/Sustain**
Analysis (tools/results) – Future State Map and Gap Analysis	**Reporting and Feedback**
Tests of Change and Step Measures	**Follow-up Actions: Plan to Sustain**

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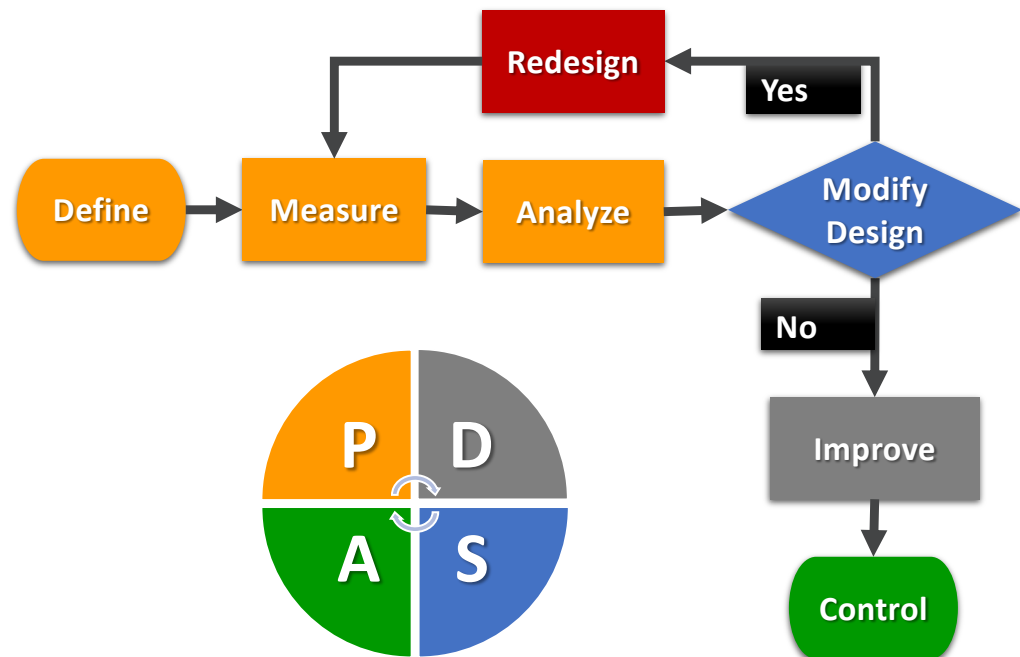
Stakeholders, Inputs, Process, Outputs, and Customers

When to use it:

- When you first start 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

Filling Out a SIPOC

Stakeholders	Inputs	Process	Outputs	Customers
Who is your project team? Who supports the project?	What resources are needed for the project? • Physical objects • Information • Factors that influence the process	What steps go into the project (look at process map) • Take a high-level view (≈10 steps) • List steps sequentially	List the outputs of the entire process	End users of the service and internal customers that the process • Who are we doing this for, who defines **value?**
	Input Measures: How do you measure stakeholders generating outputs in terms of goals?	**Process & Step Measures:** What are stakeholders doing? How long does it take, how much does it cost, where are the complexities?	**Outcome Measures:** How do you measure outputs in terms of goals? Do outputs effectively improve health outcomes, service delivery efficiency, and customer satisfaction?	

Case Study SIPOC

| Stakeholders	Inputs	Process	Outputs	Customers
• NHC Staff • Testing Agencies • Parts A and B partners • HRSA	• Dedicated staff • Data Systems • On site medication • Designated provider at each site • Defined Approach • Laboratory	• Patient Confirmed Positive • Contact patient, schedule visit • Arrange transportation • Patient arrives at appt, provider dispenses first ART dose • Follow-up appt scheduled (3-4 weeks from first visit) • Patient completes RW paperwork • Patient attends follow-up appt and repeat viral load drawn to check for suppression	• Actionable real-time data reports • Knowledge gained by stakeholders • Linkage to ART • Improved health outcomes • Improvement ideas	• PLWH

Input:
# of RS appts
# of meds dispensed

Process:
Cycle Time – 1) linkage to care; 2) diagnosis to viral suppression
Process Complexity – testing and referrals to clinic to provider

Outcomes:
Patient suppressed in <30 days

Combining Tools For Synergistic Effect

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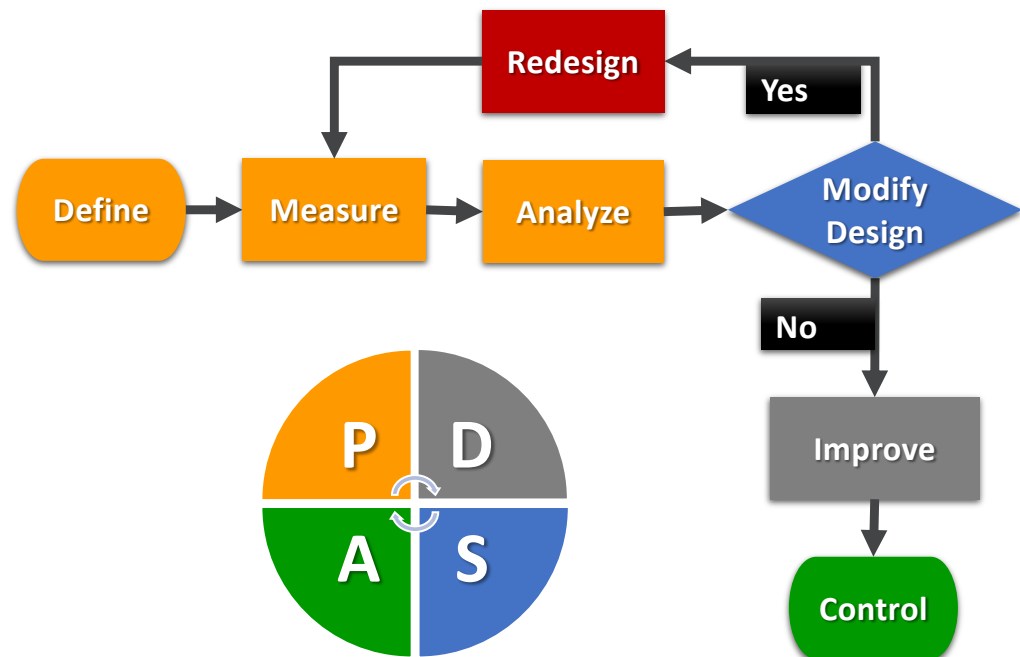
Mapping a Process

- Process mapping helps us describe a process visually to:
  - Understand the process
  - Identify potential sources of problems
  - Outline the ideal process steps
  - Enable communications with others

- There are several tools for mapping a process
  - Spaghetti Diagrams
  - Decision Trees
  - **Flowcharts - Beginner**
  - **Value Stream Maps – Advanced**

Start: New dx referred to care

End:
Patient Durably Suppressed
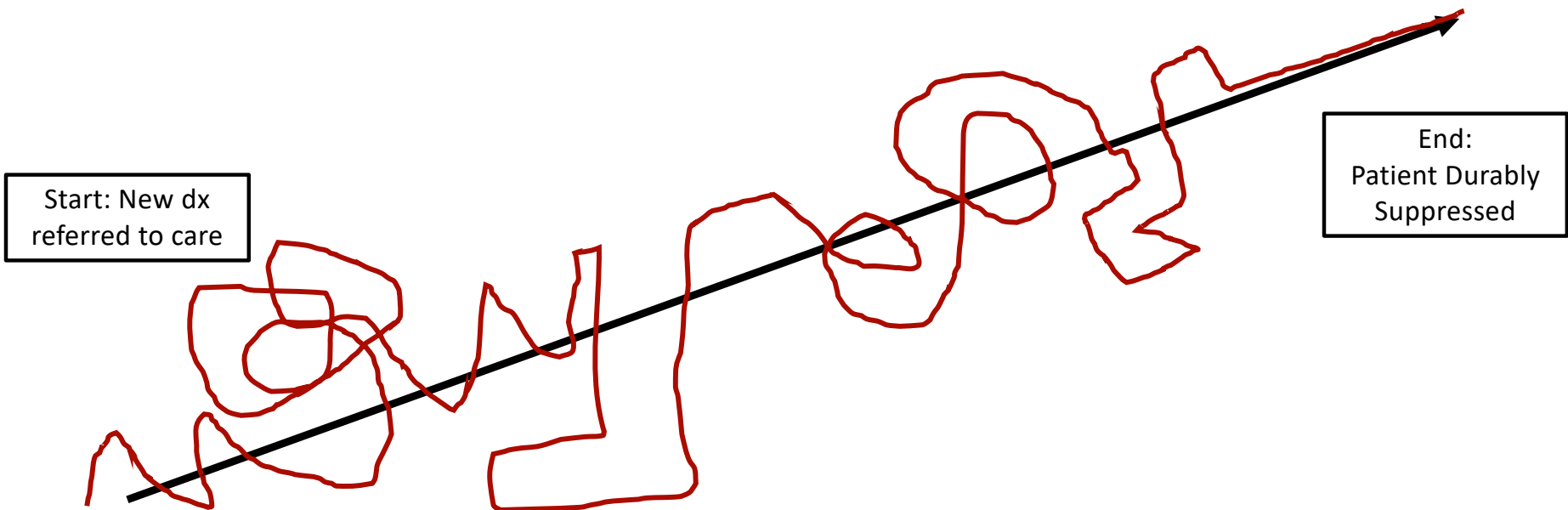
Quick Review of Value

- **Value Added Step** - the customer wants it, it fundamentally changes the service experience, <u>AND</u> it has to be done right the first time. **All three elements must be present to be Value Added.**

- **Requirements** - required by the consumer, required by the organization, or required by law. **Challenge requirements**--things like policies can be changed and aren't necessarily always requirements!

- **Non-Value Added** - everything else! We can't get rid of all NVA, some of it (sometimes over 50%) is inherent to the process. Also, **NVA does NOT mean unimportant**, things like data collection are technically NVA, but can be critical to the success and sustainability of the process improvement.

Make an Existing Flowchart into a Value Stream Map

1. Take an existing flowchart or other process map

2. Gather a small team that has knowledge of the process

3. Talk through each step at a time

4. Use Sticky Notes and markers mark each step:
   - Green Mark– value added
   - Yellow Mark – requirement
   - Red Mark – non-value added

5. Assign each step accordingly – go for consensus

6. Brainstorm how to remove waste and add more value
   - Use quantitative process data to inform discussion
   - Use qualitative consumer data as well – compare to their map or journey map
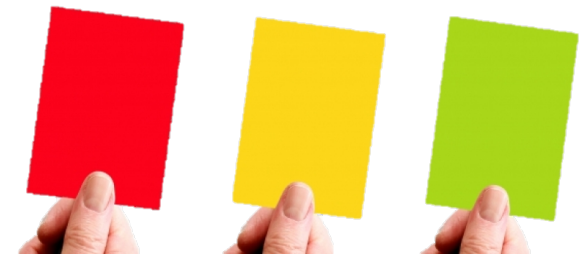
Creating the Current State Map

- ✓ 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
- ✓ Identify when the consumers requirements are met (success!!)
- ✓ Inform process owners that the map is created from actually walking and get their input
- ✓ Agree on icons that will be used
- ✓ Keep it simple, but good enough
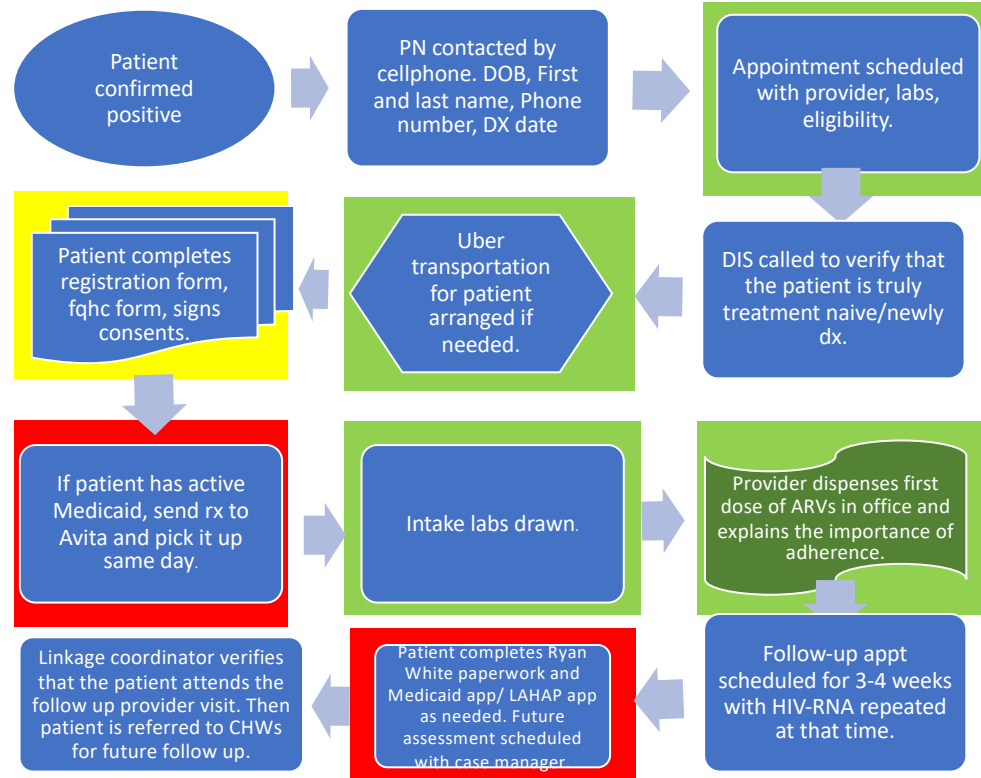
Value Stream Mapping: Data Boxes

➢ <u>Takt Time</u>: the amount of time it takes to complete the process to keep up with demand

- ▪ We have 15 min schedules and we double book
- ▪ We need to see 30 patients in 7 hours – what is our takt time?

➢ <u>Cycle Time</u>: the amount of time it takes for the step

- ▪ Average time to get patients checked out at front desk

➢ <u>Lead Time</u>: Total time from initiation of process to customer

➢ <u># of People</u>: the number of staff involved in the step

➢ <u>Inventory</u>: the number of patients or items "waiting"

- ▪ We've seen 20 pts. and have 10 waiting to be seen or currently in the process and we have 2 hours before the last slot, will we be able to see everyone?

<u>TAKT TIME</u>
(7hrs*60min)= 420 min

420min/30pts= **14 min**

# VSM Template
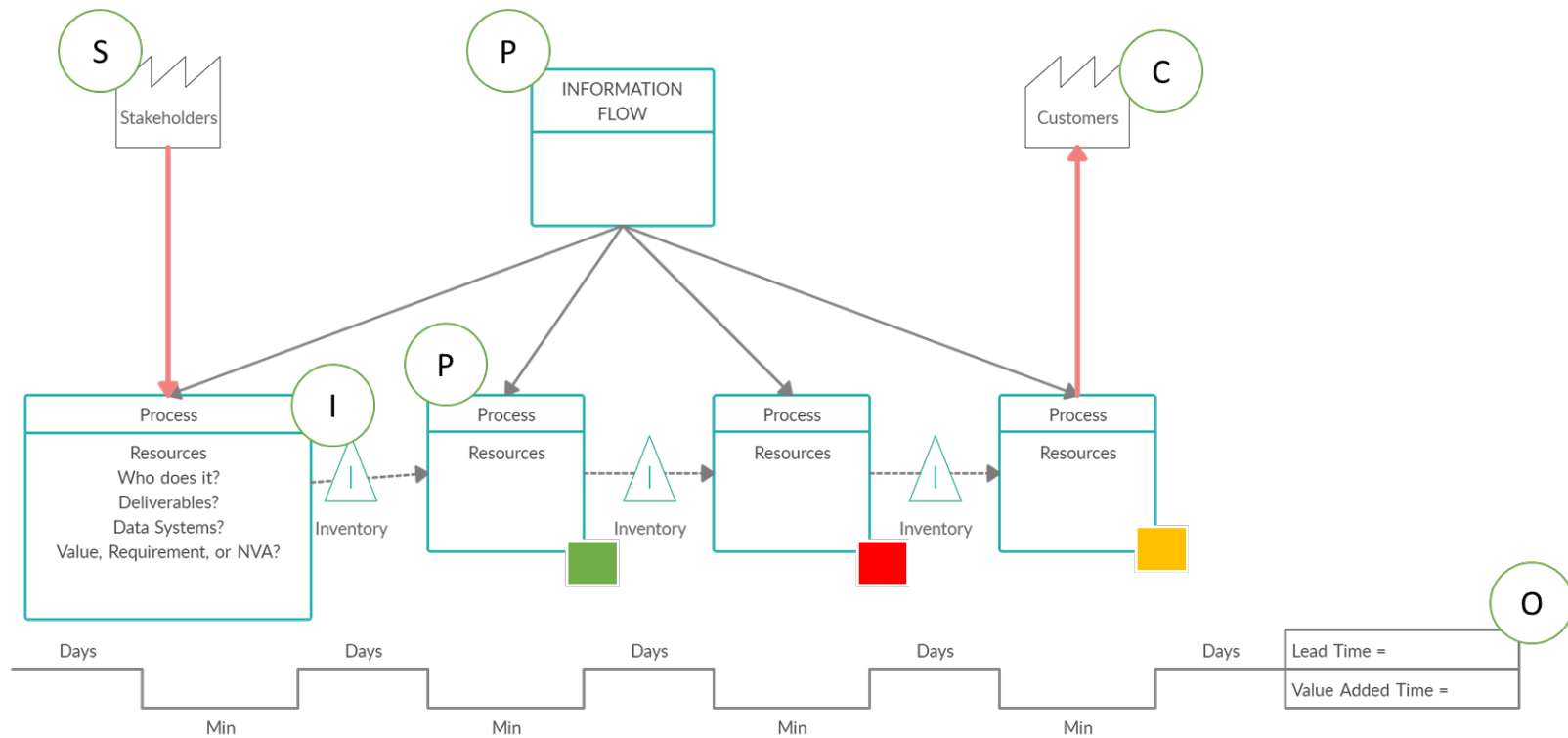
Current State - Value Stream Map Case Study

Value Added

Required

Non-Value Added

Cycle Times:
- Dx to ART = 112 hours; 14 days
- Dx to Viral Suppression = 89 days

Patient confirmed positive

PN contacted by cellphone. DOB, First and last name, Phone number, DX date

Appointment scheduled with provider, labs, eligibility.

DIS called to verify that the patient is truly treatment naive/newly dx.

Uber transportation for patient arranged if needed.

Patient completes registration form, fqhc form, signs consents.

If patient has active Medicaid, send rx to Avita and pick it up same day.

Intake labs drawn.

Provider dispenses first dose of ARVs in office and explains the importance of adherence.

Follow-up appt scheduled for 3-4 weeks with HIV-RNA repeated at that time.

Patient completes Ryan White paperwork and Medicaid app/ LAHAP app as needed. Future assessment scheduled with case manager

Linkage coordinator verifies that the patient attends the follow up provider visit. Then patient is referred to CHWs for future follow up.

Future State Value Stream Map: Key Questions

1. How would the customer draw this map?
2. What would the ideal process look like?
3. Look for value added activities (usually the boxes) and seek to eliminate waste (arrows, forms, decisions, rework, transport etc.)
4. What improvements could be made if there were **no** constraints on scope or resources?
5. Where is continuous flow most important?
6. Where could we employ a creative idea to remove waste?
7. Which improvements will give us the most juice for the squeeze? (intersection of high impact, high probability, low cost solutions)
8. Which improvements will best help the process owners sustain?

Creating a Future State – What would you change?

Value Added

Required

Non-Value Added
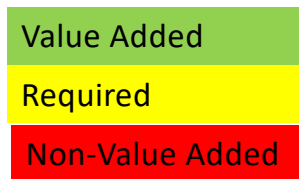
Cycle Times:
- Linkage time = 112 hours; 14 days
- Dx to Viral Suppression = 89 days

Goals:
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Implementing Solutions

- How do you prioritize multiple solutions to root cause(s)?
  - Sort possible projects
  - Collect relevant data
  - Analyze relevant technical and experiential data
  - Refer to Root Cause Analysis to ensure solution addresses the root cause
  - Consider impacts vs. barriers to implementation
- There are several tools for prioritization
  - **PICK Chart or Priority Matrix (Beginner)**
  - **Failure Mode Effects Analysis (Advanced)**

Understand Critical Failures

- **What should we prioritize?**
  - Think horses, not zebras

- **FMEA key questions for improvement teams**
  - What could go or went wrong?
  - What would cause it?
  - What are the consequences?
  - What can we do? (Redesign)

- **Contingency planning for probable, critical, occurrences**
  - Designing better interventions could save you several cycles!
    - **If X, then Y planning**

Failure Mode & Effects Analysis (FMEA)

- With a long history in private industry and the military, FMEA is a step-by-step approach for identifying all 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 consumers, and can be potential or actual

- **Effects analysis**: refers to studying the consequences of those failures, potentially even <u>before</u> they happen

Simplified FMEA example

	Function	Failure Mode	Effects	Severity	Cause of Failure	Liklihood	Risk Priority	Action Reccomended	Date Due	Person Responsible
1	Review data	insufficient interfaces between data sytems to easily create data dashboard	Review is not data driven Stakeholders don't value process	7 - High	Lack of resources (time, IT, and expertise)	6 - Moderate: Possible chance...	42	IT workaround - do manual data import and use sharepoint instead of Tableau	6/9/2020	
2										

1-10 Scale Use data to confirm

1-10 Scale Use data to confirm

Multiply Severity X Likelihood of Occurrence For Risk Priority Number (RPN)

Develop recommended actions for high RPN functions

Case Study - FMEA

Function	Failure Mode	Effects	Severity	Cause of Failure	Likelihood	Risk Prioirty	Action Recommended
On site medication	Meds are not delivered by pharmacy	Unable to conduct DOT	9 – Very high	Pharmacy short staffed	5- Moderate possible chance	45	Have starter pill pack on site in case pharmacy unable to deliver
Designated Provider at each site	Provider scheduled for that day is not available	RS appt not available at clinic	10 – very high	Designated Dr. called in sick	6 – moderate	60	Sites have more than one designated RS provider as back-up

Kanban

- Japanese for "signboard"
- A visual display that regulates the flow of work
- Organized around the different milestones in an improvement project
- Clearly indicates what work remains to be done and who is responsible
- Colors can represent the state of the work in process
  - Example: yellow can mean behind schedule; orange on time; red means immediate attention
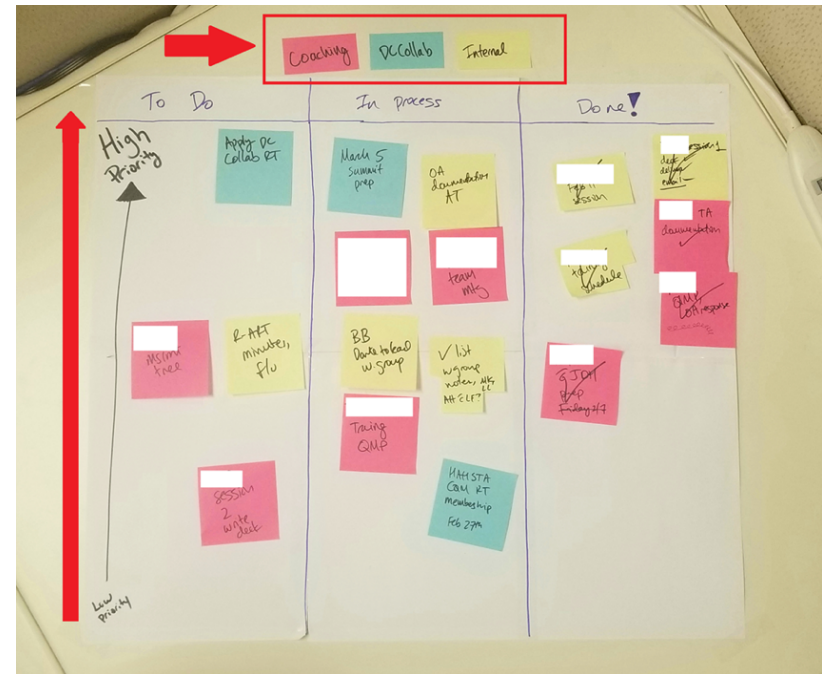
Making a Simple Kanban

Status →

| Not Started | Working | Waiting | Reveiw | complete |

Due date →

Priority →

Task Owner →

Using Kanban for Team Huddles

Huddles are:

- Brief; 10-15 minutes

- Focused; no side conversations, everyone is focused and reviewing the information

- Standing meetings

- Review of the "vital few"

- Engagement focused
  - More than just speaking aloud or reading an email, visual boards help everyone see the same thing
  - Responsibility for leading the huddle rotates

How to do a Kanban Huddle

- It's easy! Review the information on the board; it's a conversation piece, not wallpaper

- Agenda could look like
  - "Glow and Grow"
    - Updates on roadblocks, celebrating team members, and opportunities for improvement
  - Top 1 (what is the thing we want to get done this week?
    - What was our Top 1 last week? Did we do it? Why / why not?
  - Metrics – review of data. Color coded red/yellow/green. Improvement ideas flow from data review
  - Offers and requests
  - Cheer. End with joy, a fun quote, a verbal cheer, anything to smile and unify!

Case Study - Kanban

To-Do

Task: Present 3rd Qtr. performance measures for RS process

Priority: Medium

Due Date: 6/1/20

Person Responsible: Quality Manager, Data Coordinator

In-Process

Task: Train front desk staff on rapid appt scheduling procedures, insurance (RW)
Priority: High
Due Date: 11/15/2019
Person Responsible: Clinic Manager

Done!

Task: Train testing sites on rapid linkage process

Priority: High

Due Date: 10/15/2019

Person Responsible: Linkage Coordinator

Related QI Resources

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

Colorado Local Public Health & Environmental Resources QI tools -
     https://www.colorado.gov/pacific/cdphe-lpha/tools-and-resources

EPA Lean Metrics Guide –
     https://www.epa.gov/sites/production/files/2014-
     04/documents/metrics_guide.pdf

Institute for Healthcare Improvement - http://www.ihi.org/
     Quality Improvement Essentials toolkit and a wide variety of tutorials on
     tools

Center for Quality Improvement & Innovation (CQII)

targethiv.org/cqii:
- ✓ Information on Advanced Trainings
- ✓ On site Technical Assistance
- ✓ Quality Academy
- ✓ Consumer Quality Improvement Activities
- ✓ Collaborative Resources

Frequently Asked Questions:

- Which tool should we use if we are just getting started with our quality improvement project?

- Which tool would we use to help us to capture and document our project?

- How do these tools apply to a health department or Ryan White recipient that does not provide direct patient care?

Contact Information

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