# Lessons Learned: Quality Improvement and Innovation Strategy in the Indian Health Service

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2-20-2023
Rural AHA Leadership Conference

# Disclosures

- None of the presenters have any financial interests or relationships to disclose.

# Acronyms

- AI/AN American Indian/Alaska Native
- IHI Institute for Healthcare Improvement
- IHS Indian Health Service
- MFI Model for Improvement
- PCMH Patient Centered Medical Home
- PDSA Plan- Do- Study- Act
- PHR Personal Health Record (patient-facing aspect of EHR)

# Objectives

- Examine the impacts of a centralized approach to quality improvement in an organization otherwise decentralized, segregated, and geographically isolated.
- Contrast maturity of different data management strategies in quality improvement.
- Review different types of quality improvement projects that can be accomplished and generalize this approach to their own health system.

# Outline

- The history of the Innovations Project in the IHS and the staff and infrastructure necessary to sustain
- The spread of QI methodology in the IHS and the standardization of QI method (e.g. Model for Improvement) and data management (e.g. data over time and using run/control charts)
- Highlight different innovations in the IHS supported by the Innovations Project over the last 5 years.

# Indian Health Service

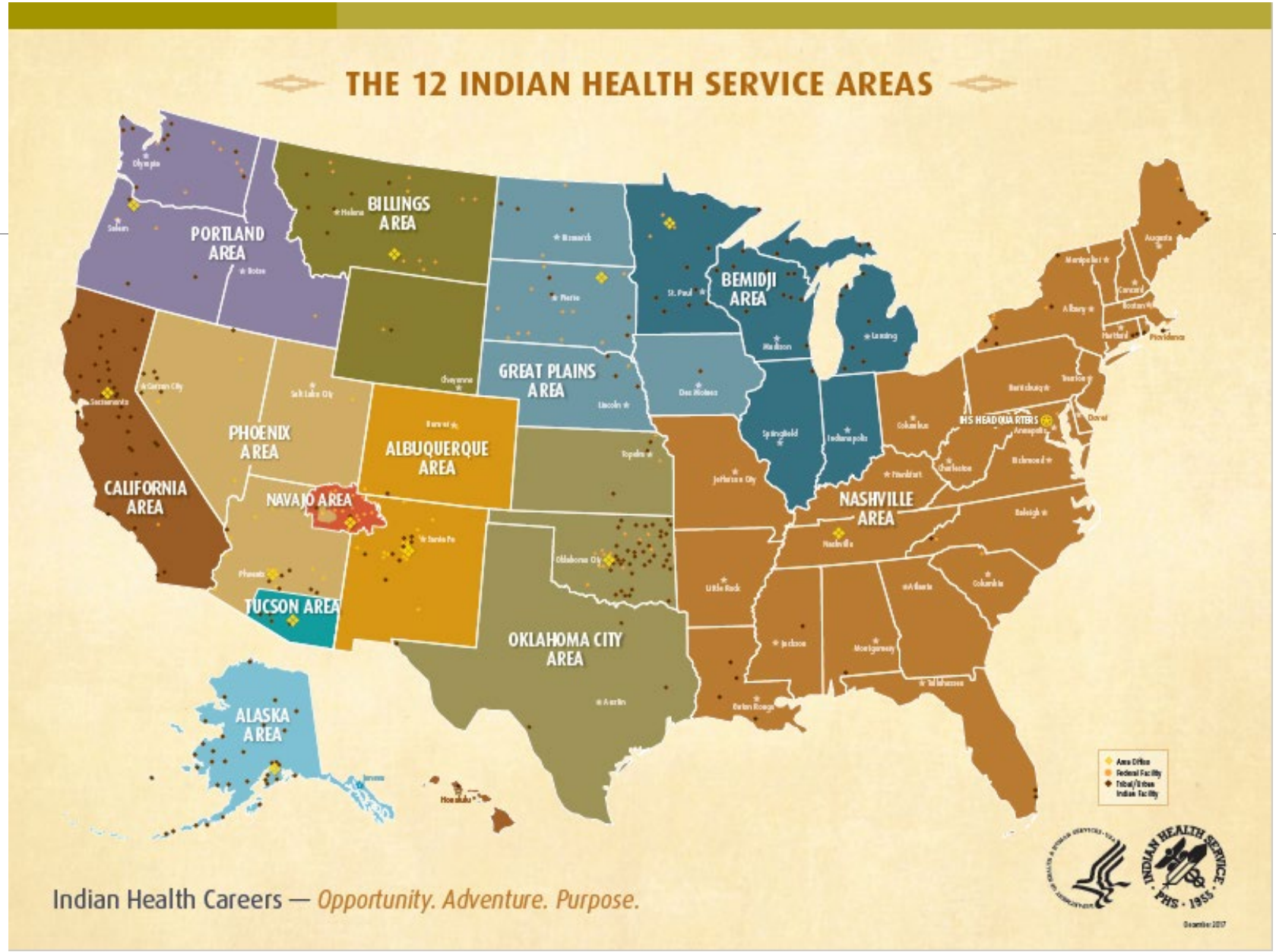
- Mission: to raise the physical, mental, social, and spiritual health of American Indian and Alaska Native people to the highest level
- Provides Direct Care (DC) and Purchased/Referred Care (PRC) services
- 3 Settings = I/T/U = IHS (Federal)/Tribal/Urban
- 2.56 million AI/AN patients across  574 federally recognized Tribes in 37 states

Rhoades ER, Rhoades DA. The public health foundation of health services for American Indians & Alaska Natives. *Am J Public Health*. 2014;104 suppl 3(suppl 3):S278-S285. Doi:10.2105/ajph.2013.301767

# IHS Structure

- Headquarters located in Rockville, MD
- 12 Regions each with its own Area Office
- Service Units which can consist of one or more clinic(s) or hospital(s) serving a specific community.

- National HQ < -- > Area Office < -- > Service Unit ( < -- > Individual Facilities )


THE 12 INDIAN HEALTH SERVICE AREAS
PORTLAND AREA
BILLINGS AREA
BEMIDJI AREA
GREAT PLAINS AREA
PHOENIX AREA
ALBUQUERQUE AREA
CALIFORNIA AREA
NAVAJO AREA
TUCSON AREA
OKLAHOMA CITY AREA
NASHVILLE AREA
ALASKA AREA
IHS HEADQUARTERS
Indian Health Careers — Opportunity. Adventure. Purpose.

# Office of Quality Innovations Projects

“This opportunity is for IHS health care facilities to receive assistance from the Office of Quality to develop and implement a quality improvement project. These projects should meet a demonstrated need of the population served and represent significant innovation in improving the quality of care and outcomes for AI/AN patients.

This also represents an opportunity for the Office of Quality to identify and develop proven innovative approaches that can have wider impacts as they can be replicated and adapted by other IHS health programs.”

# IHS Innovations Projects History

- Launched in 2017 by Division of Innovation and Improvement within the Office of Quality, a national Office located at IHS Headquarter
- Initially projects were focused on social determinants of health (SDOH) and now focused on any of the agency priorities
- In total, 16 projects have been completed thus far in this program

# Office of Quality Support

- Application period annually where any service unit with a proposed innovation can apply for support
  - Funding
  - Quality improvement training
  - Quality improvement support with QI advisors
  - QI portal access to document QI progress (e.g. charter, PDSAs)

# QI Framework

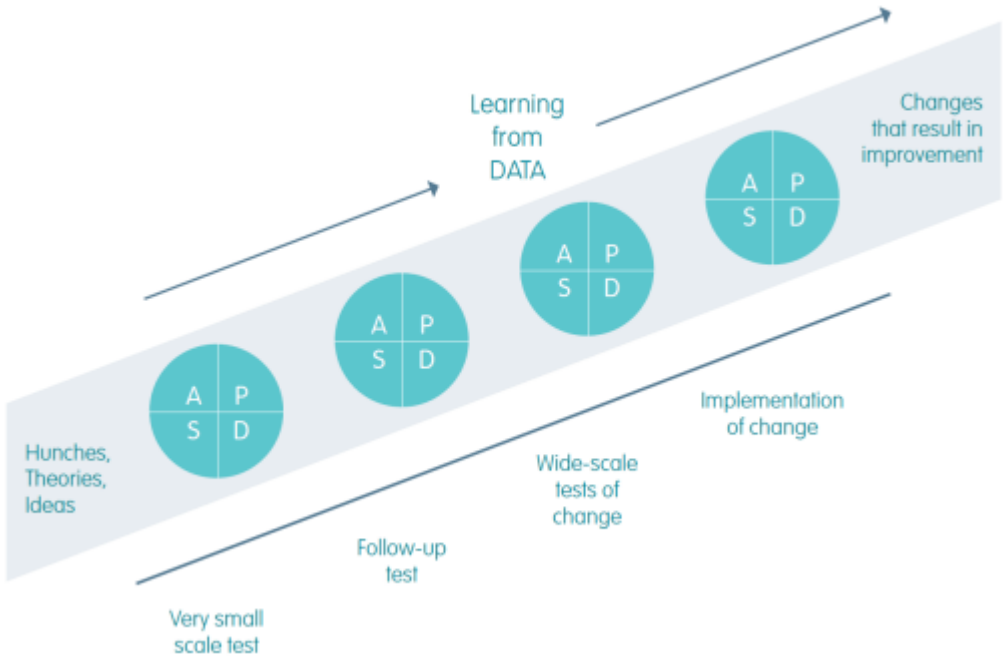
- Model for Improvement
  - Team creates a charter to initiate the QI project
  - Team completes one or more PDSA to test proposed changes
  - Team uses monthly sponsor reports to summarize ongoing work their leadership
  - Summary of learning at conclusion, spread implementation toolset created if positive changes

# Model for Improvement

**What specifically are we trying to accomplish?**

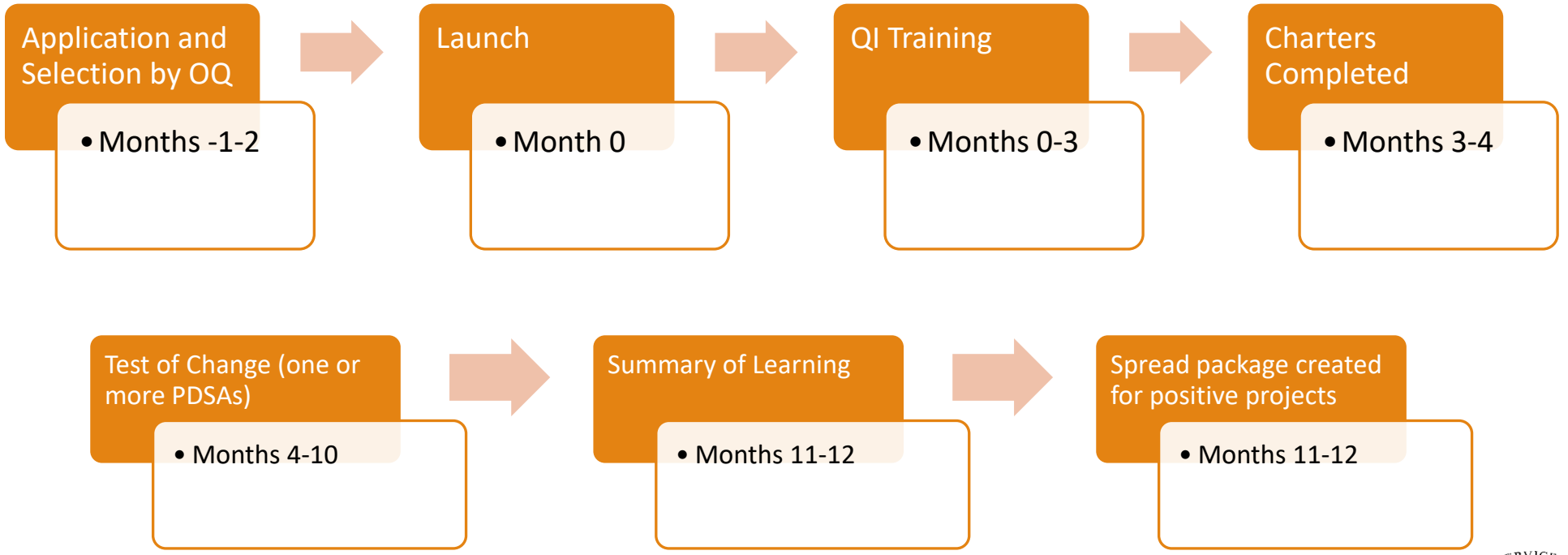
**What changes might we make and why?**

**How will we know that a change is an improvement?**


LeMahieu et al., 2017b, p. 6; adapted from Langley et al., 2009

# Timeline for Innovations Projects



# History of Prior Projects 1/3

**2017-2018**

- 24-hour nurse line
- PCMH health literacy improvement model by improving PHR use

**2018-2019**

- Increase use of comprehensive care elements for diabetics in the ambulatory care setting
- Area Office-based 24-hour nurse line

# History of Prior Projects 2/3

**2019-2020**

- Promoting Equitable, High Quality Healthcare through Medical Social Workers
- Enabling Community Health Representatives (CHRs) to Communicate Effectively with the Primary Care Team
- Addressing the  Behavioral and Developmental needs of American Indian/Alaska Native Youth

**2020-2021**

- Improving the Lives of Patients with Uncontrolled Diabetes through Collaborative Practice with Continuous Glucose Monitoring and Patient Focus Groups
- Telehealth Collaboration with BIA Corrections
- Expanding Women's Health Services by Creating a Comprehensive Women's Health Center

# History of Prior Projects 3/3

**2021-2022**

- Pharmacist-Led Diabetes Education and Management Clinic Integration
- Addressing access for mental health
- Addressing social determinants of health to decrease obesity rates
- MOVE! – a program to Decrease BMI in patients
- Modernizing Patient Screening Data Collection
- Co-development with patients of quality measures to assess the patient journey

**2022-2023**

- Telehealth: remote monitoring and remote primary care
- Indigenous language medical interpretation certification
- Telecardiology population health for CHF to ensure evidence-based medication regimen

# Benefits of this approach

- Smallest of sites that are closest to the patients and community have hyperlocal expertise on what is needed to best take care of those patients and community
- Yet, as smaller sites, they may lack the time, funding, infrastructure, and expertise in using quality improvement methodology
- This approach leverages centralized QI methodology support (single point of investment) with distributed support across separated and disparate sites
- Innovations with spreadable implications for the IHS as a whole can also be amplified and given platform

# Core QI Curriculum

- Model for Improvement (IHI)
- Theory of Profound Knowledge (Deming)
  - System Thinking
  - Understanding Variation
  - Theory of Knowledge
  - Psychology
    - Core Strengths – Self Deployment Inventory (SDI)

# DII Support for QI in IHS

- Provide consultation and 1:1 technical assistance
- QI Cooperatives
  - Innovations Projects
  - IPC-LAB/Advancing Primary Care
- QI Education
  - IHI Open School
  - QI Curriculum (Health Improvement Professional)
  - QI Documentation platform
- Communication
  - IHS Quality Portal
  - LISTSERVS

# QI Education Spread

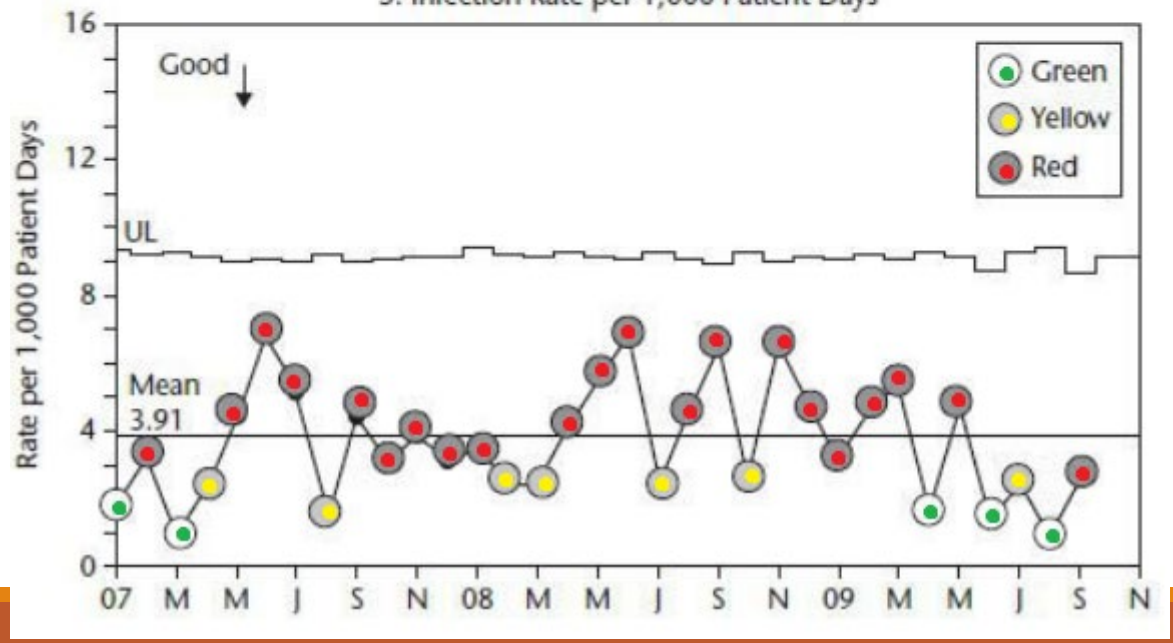
- Self-paced online curriculum
  - IHI Open School – Basic QI Education
  - LEAN
- Focused QI curriculum to develop local team leaders and coaches (Human Improvement Professional HIP)
- Experiential Learning – learn while doing a project such as the Innovations project (**key to success**)

# Understanding Variation - Visualization

- Humans do better with visualization for processing data and identify trends, outliers, patterns
- Longitudinal display provides historical context
- The use of run charts or control charts can further help with evaluation of measures by augmenting visualization with statistical analysis to help with pattern recognition and prediction

| Month | Infection Rate per 100 Patient Days | Month | Infection Rate per 100 Patient Days | Month | Infection Rate per 100 Patient Days |
|---|---|---|---|---|---|
| J 07 | 1.43 | J 08 | 3.97 | J 09 | 3.20 |
| F | 3.46 | F | 2.48 | F | 4.48 |
| M | 1.04 | M | 2.43 | M | 5.38 |
| A | 2.32 | A | 4.67 | A | 2.00 |
| M | 4.39 | M | 5.88 | M | 4.50 |
| J | 6.83 | J | 6.66 | J | 1.60 |
| J | 5.41 | J | 2.20 | J | 2.30 |
| A | 2.12 | A | 4.17 | A | 1.10 |
| S | 4.71 | S | 6.83 | S | 2.60 |
| O | 3.30 | O | 2.34 | | |
| N | 3.50 | N | 6.69 | | |
| D | 3.13 | D | 4.39 | | |

5. Infection Rate per 1,000 Patient Days



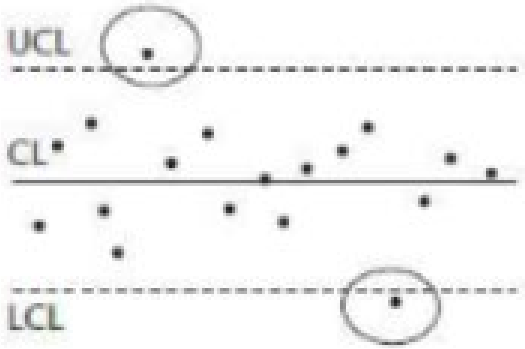

Provost LP, Murray S. The Health Care Data Guide: Learning from Data for Improvement. San Francisco: Jossey-Bass; 2011.

# Evaluation – Cause of Variation

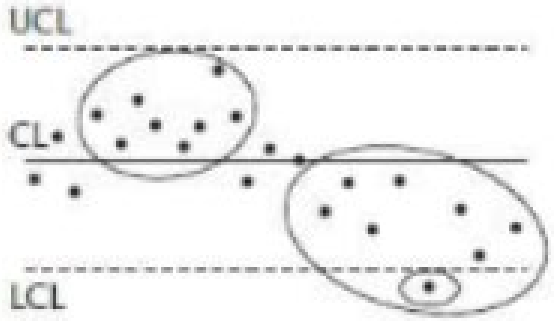
| Cause of Variation | System | Stability | Action for Improvement |
|---|---|---|---|
| Common Cause | Internal/inherent to system over time affecting everyone | Stable, predictable | Redesign system |
| Special Cause | Not part of system all the time or does not affect everyone equally | Unstable, not predictable | Study special cause and take appropriate action |

Provost LP, Murray S. The Health Care Data Guide: Learning from Data for Improvement. San Francisco: Jossey-Bass; 2011.

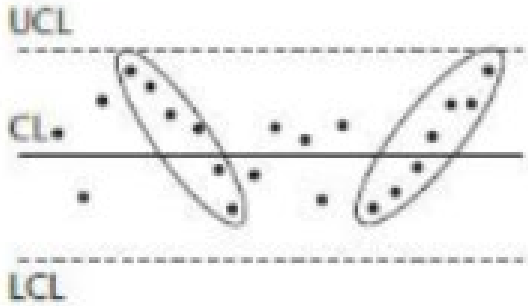
1. A single point outside the control limits.



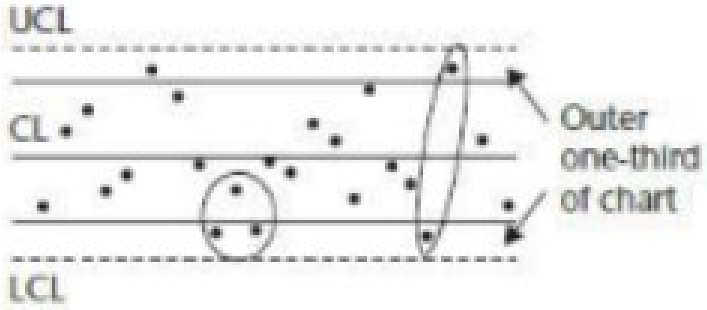

2. A run of eight or more points in a row above (or below) the centerline.



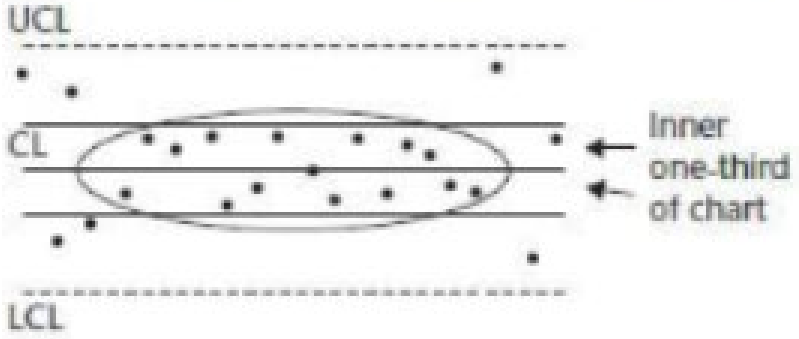

3. Six consecutive points increasing (trend up) or decreasing (trend down).




4. Two out of three consecutive points near (outer one-third) a control limit.




5. Fifteen consecutive points close (inner one-third of the chart) to the centerline.




Provost LP, Murray S. The Health Care Data Guide: Learning from Data for Improvement. San Francisco: Jossey-Bass; 2011.

# Projects

1. MOVE! – A Program to Decrease BMI
2. Redesigning Mental Health Care
3. Modernizing Patient Screening Data Collection

# MOVE! - Description

- The project will screen and refer patients with a BMI > 30 in order to decrease BMI in patients. The Department of Veterans Affairs has an existing program that will be adopted by the Service Unit. The program's aim is to annually screen every Native patient who receives care at SU for obesity, refer individuals to weight management services, and make available different treatment options that fit the needs and preferences of our patients. The project involves two changes to improve outcomes related to obesity;
  - (1) Improve coordination within SU (medical, pharmacy, nursing) and between the IHS-external health programs (e.g. Nutrition and WIC);
  - (2) adopt an evidence-based self-management program that focuses on health and wellness through healthy eating, physical activity, and behavior change called MOVE!.

# MOVE! – Model for Improvement

- **What are we trying to accomplish?**
  Redesign screen and refer patients BMI > 30 in order to Decrease BMI in patient
- **How will we know it is an improvement?**
  - **Outcome:**
    Decrease BMI in patient
    Decrease Sugary Beverage intake within MOVE! program patients
  - **Process:**
    Decrease No show appointments
    Increase Number of patients who are overweight/obese that were referred to nutrition
    Increase Patients seen in clinic with a BMI measured
    Increase Percent of active user population with BMI recorded within the past year
    Increase percent of obesity referrals to nutrition with one completed appointment
    Decrease weight in patients enrolled in the MOVE! program
  - **Balancing:**
    Maintain or Increase Stakeholder Satisfaction

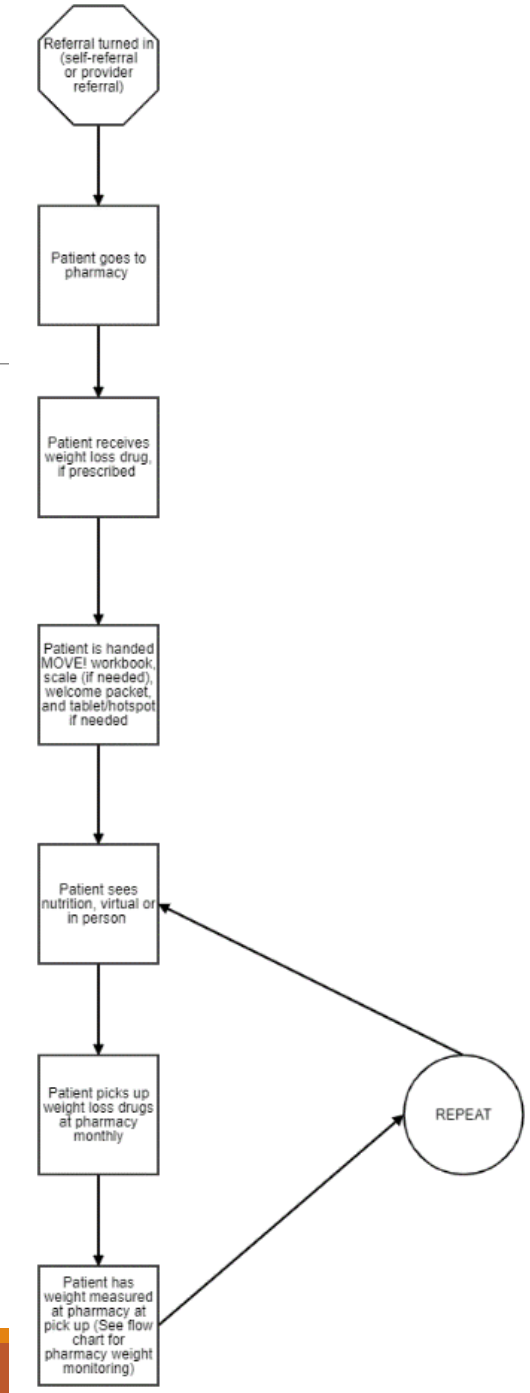
# MOVE! – Tests of Change

| PDSA Cycle | Change Concepts To Use | Measures Impacted |
|---|---|---|
| Implement Introduction of MOVE! to staff (# 1) | 27, 31, 37 | 1. Increase move! referrals |
| Implement Height & Weight training (# 2) | 18, 27, 31 | 1. Increase bmi recorded within last year<br>2. Increase bmi updated or recorded |
| Test Modify clinic BMI screening process for all patients (# 3) | 28, 29, 51, 59 | 1. Increase bmi recorded within last year<br>2. Increase bmi updated or recorded |
| Test Modify BMI referral process for any patient with a BMI over 25, which includes updating patient contact information and identifying barriers to care (transportation and technology access) (# 4) | 18, 19, 34, 51, 53 | 1. Increase referral + at least one appointment kept<br>2. Increase move! referrals<br>3. Decrease show rates |
| Implement MOVE! Program will improve health of enrolled patients: reduce weight & sugary beverage intake (# 5) | 18, 27, 34 | 1. Decrease weight (kg)<br>2. Decrease daily sugary beverage intake fl oz |
| Implement Meeting demand by managing capacity (# 6) | 18, 22, 65 | 1. Increase referral + at least one appointment kept |

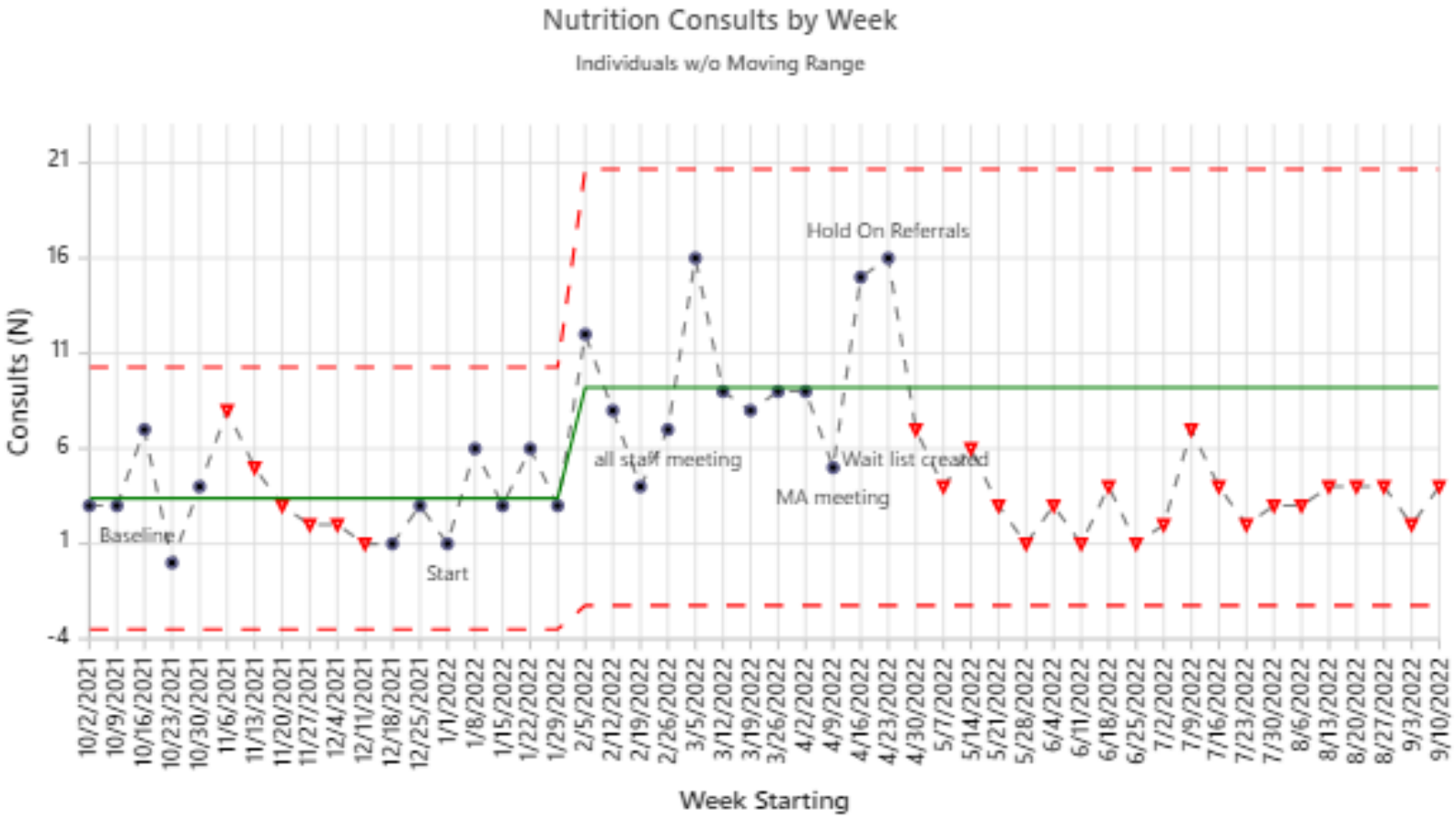
**Change Concept Descriptions**

18. Smooth workflow, 19. Do tasks in parallel, 22. Adjust to peak demand, 27. Give people access to information, 28. Use proper measurements, 29. Take care of basics, 31. Conduct training, 34. Focus on core process and purpose, 37. Develop alliances/cooperative relationships, 51. Standardization (create a formal process), 53. Develop operation definitions, 59. Use reminders, 65. Offer product/service anyplace

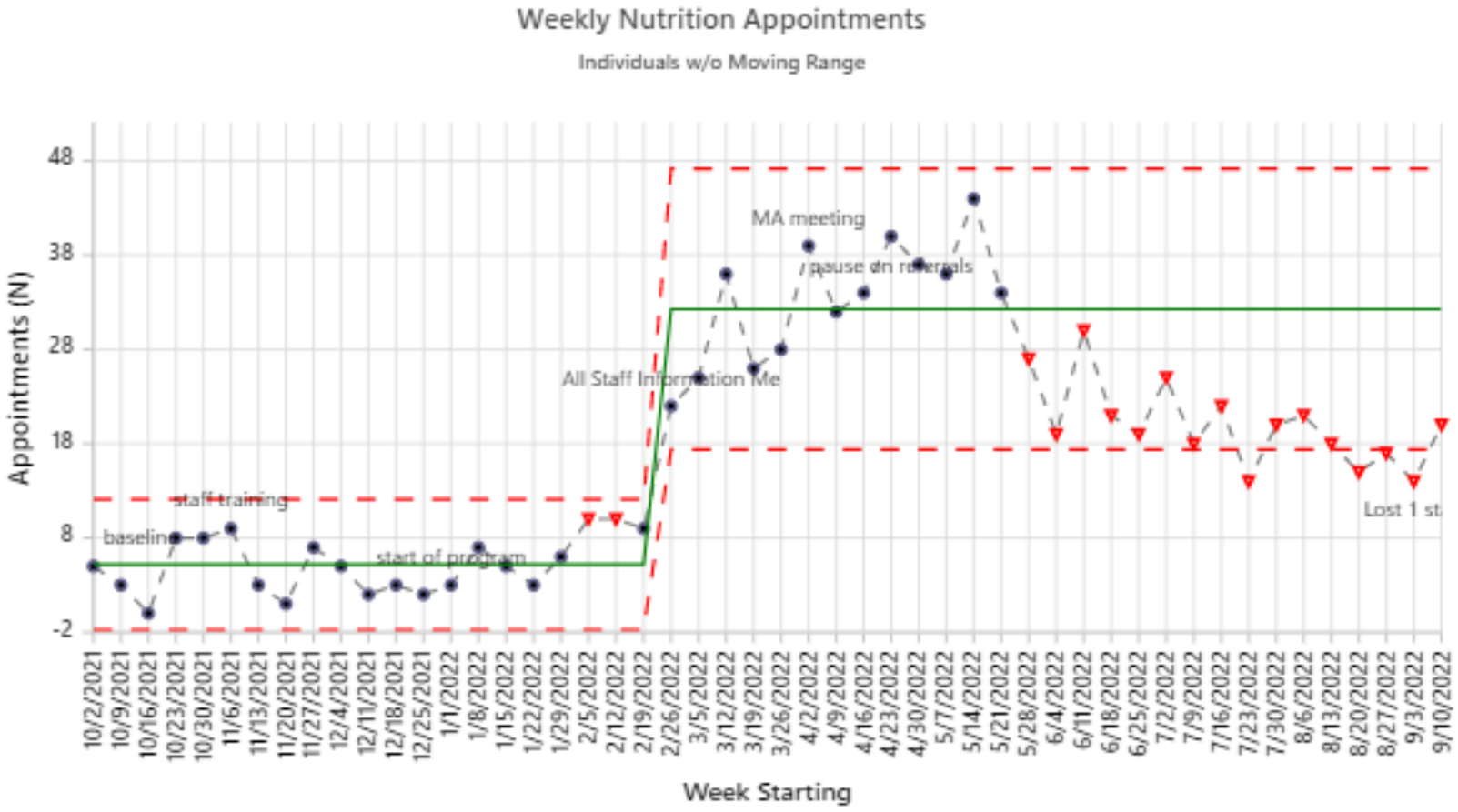
# MOVE! – Process Mapping



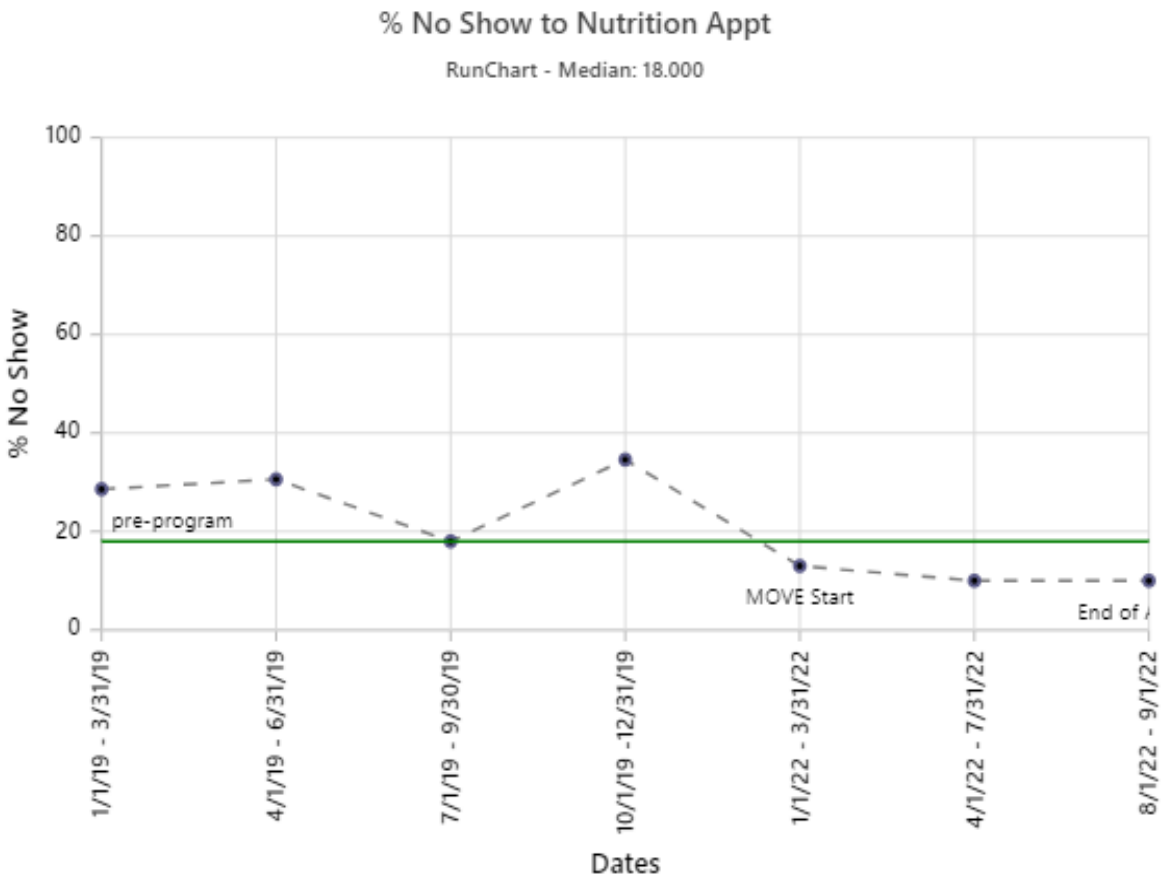
# MOVE! - Data

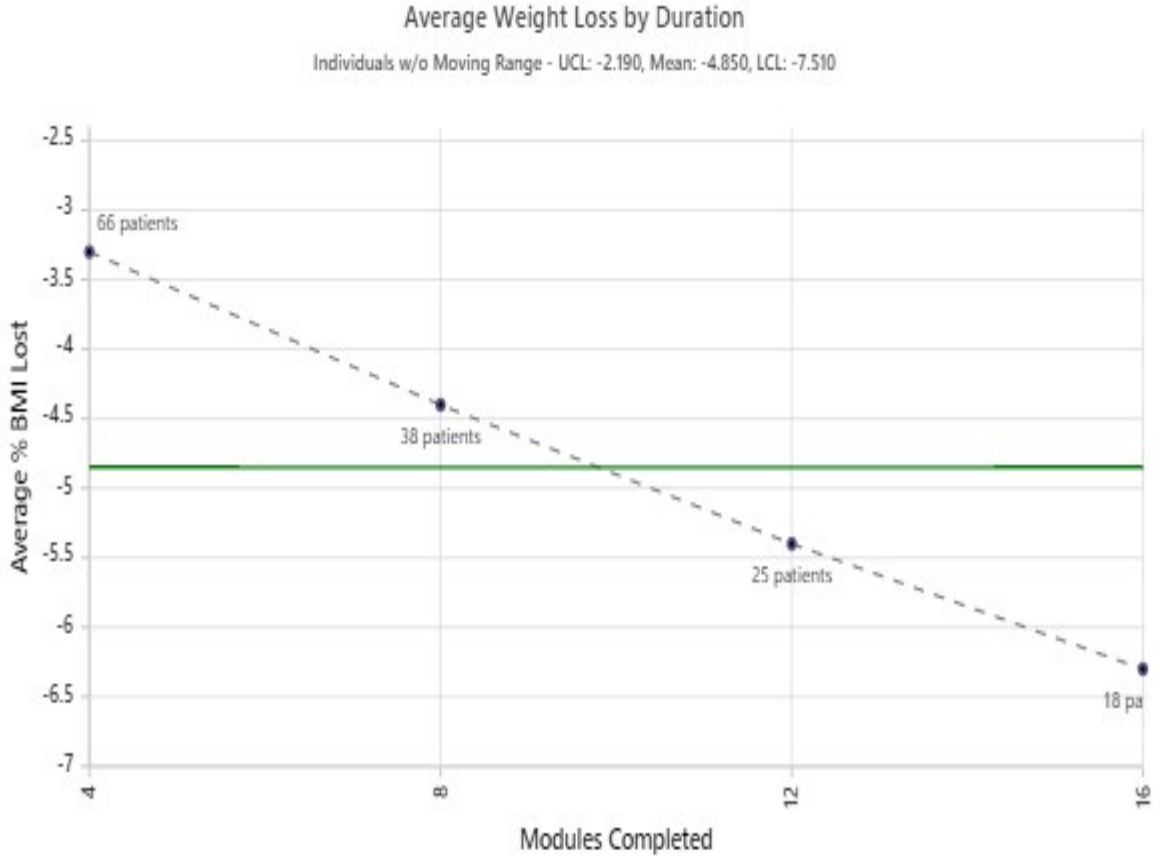

Nutrition Consults by Week
Individuals w/o Moving Range
Consults (N)
21
16
11
6
1
-4
Hold On Referrals
all staff meeting
Wait list created
MA meeting
Baseline
Start
10/2/2021
10/9/2021
10/16/2021
10/23/2021
10/30/2021
11/6/2021
11/13/2021
11/20/2021
11/27/2021
12/4/2021
12/11/2021
12/18/2021
12/25/2021
1/1/2022
1/8/2022
1/15/2022
1/22/2022
1/29/2022
2/5/2022
2/12/2022
2/19/2022
2/26/2022
3/5/2022
3/12/2022
3/19/2022
3/26/2022
4/2/2022
4/9/2022
4/16/2022
4/23/2022
4/30/2022
5/7/2022
5/14/2022
5/21/2022
5/28/2022
6/4/2022
6/11/2022
6/18/2022
6/25/2022
7/2/2022
7/9/2022
7/16/2022
7/23/2022
7/30/2022
8/6/2022
8/13/2022
8/20/2022
8/27/2022
9/3/2022
9/10/2022
Week Starting

# MOVE! - Data


Weekly Nutrition Appointments
Individuals w/o Moving Range
Appointments (N)
48
38
28
18
8
-2
staff training
baseline
start of program
All Staff Information Me
MA meeting
pause on referrals
Lost 1 st
10/2/2021
10/9/2021
10/16/2021
10/23/2021
10/30/2021
11/6/2021
11/13/2021
11/20/2021
11/27/2021
12/4/2021
12/11/2021
12/18/2021
12/25/2021
1/1/2022
1/8/2022
1/15/2022
1/22/2022
1/29/2022
2/5/2022
2/12/2022
2/19/2022
2/26/2022
3/5/2022
3/12/2022
3/19/2022
3/26/2022
4/2/2022
4/9/2022
4/16/2022
4/23/2022
4/30/2022
5/7/2022
5/14/2022
5/21/2022
5/28/2022
6/4/2022
6/11/2022
6/18/2022
6/25/2022
7/2/2022
7/9/2022
7/16/2022
7/23/2022
7/30/2022
8/6/2022
8/13/2022
8/20/2022
8/27/2022
9/3/2022
9/10/2022
Week Starting

# MOVE! - Data


% No Show to Nutrition Appt
RunChart - Median: 18.000
% No Show
100
80
60
40
20
0
pre-program
MOVE Start
1/1/19 - 3/31/19
4/1/19 - 6/31/19
7/1/19 - 9/30/19
10/1/19 -12/31/19
1/1/22 - 3/31/22
4/1/22 - 7/31/22
8/1/22 - 9/1/22
Dates


Average Weight Loss by Duration
Individuals w/o Moving Range - UCL: -2.190, Mean: -4.850, LCL: -7.510
Average % BMI Lost
-2.5
-3
-3.5
-4
-4.5
-5
-5.5
-6
-6.5
-7
66 patients
38 patients
25 patients
4
8
12
16
Modules Completed

# Redesigning Mental Health Care - Description

- The project will redesign managing the care of patients diagnosed with depression and anxiety in order to increase number of encounters where depression or anxiety is addressed. The project will focus on patients with existing diagnoses of depression and/or anxiety who have evidence of limited follow up with primary care or behavioral health teams, and/or who have evidence of suboptimal treatment regimens and/or medication adherence.

# Redesigning Mental Health Care– Model for Improvement

**What are we trying to accomplish?**
Redesign management of the care of patients diagnosed with depression and anxiety in order to Increase number of encounters where depression or anxiety POV is addressed

**How will we know it is an improvement?**

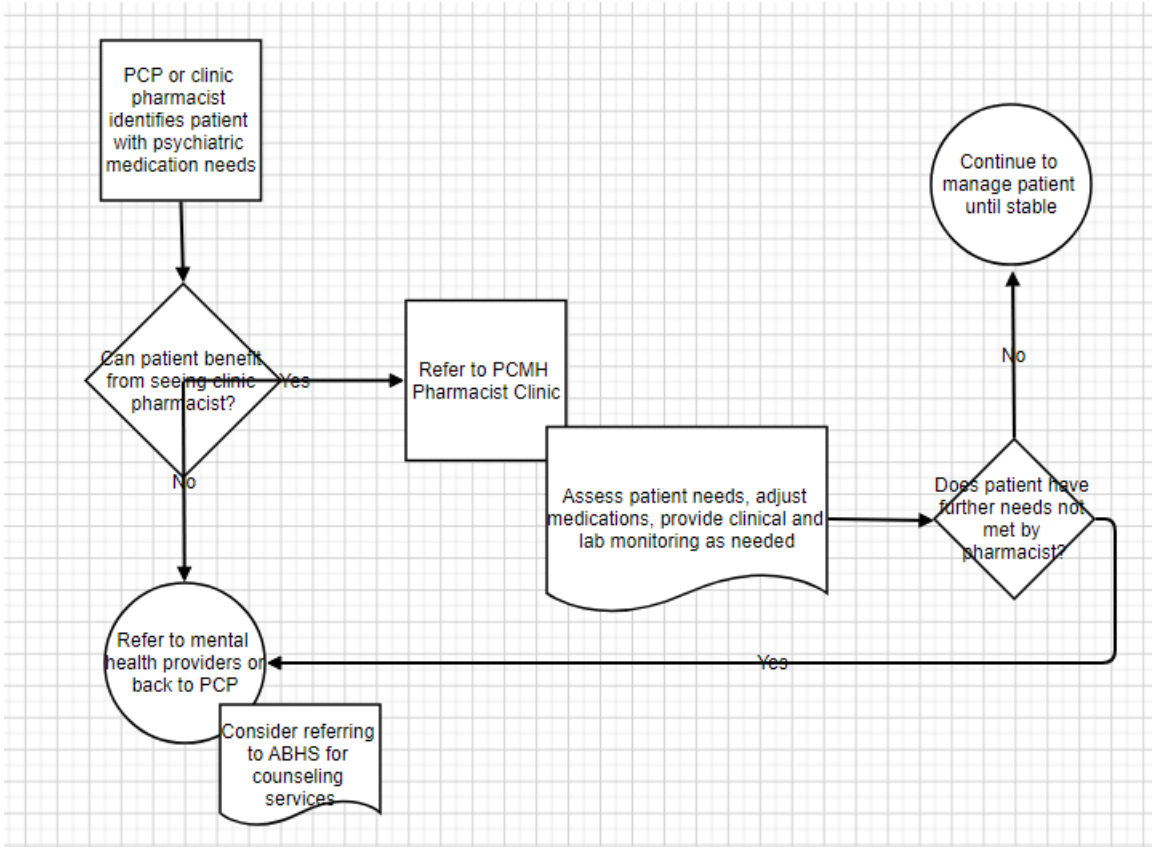
- **Outcome:**
  Increase number of encounters where depression or anxiety POV is addressed
  Increase percent positive PHQ2 from community that receive follow-up
- **Process:**
  Increase # of PHQ-2 screenings
  Decrease average PHQ9/GAD7 scores from baseline
  Increase number of psychiatric medication interventions made
  Increase percent medication refills
- **Balancing:**
  Maintain or Increase Stakeholder Satisfaction

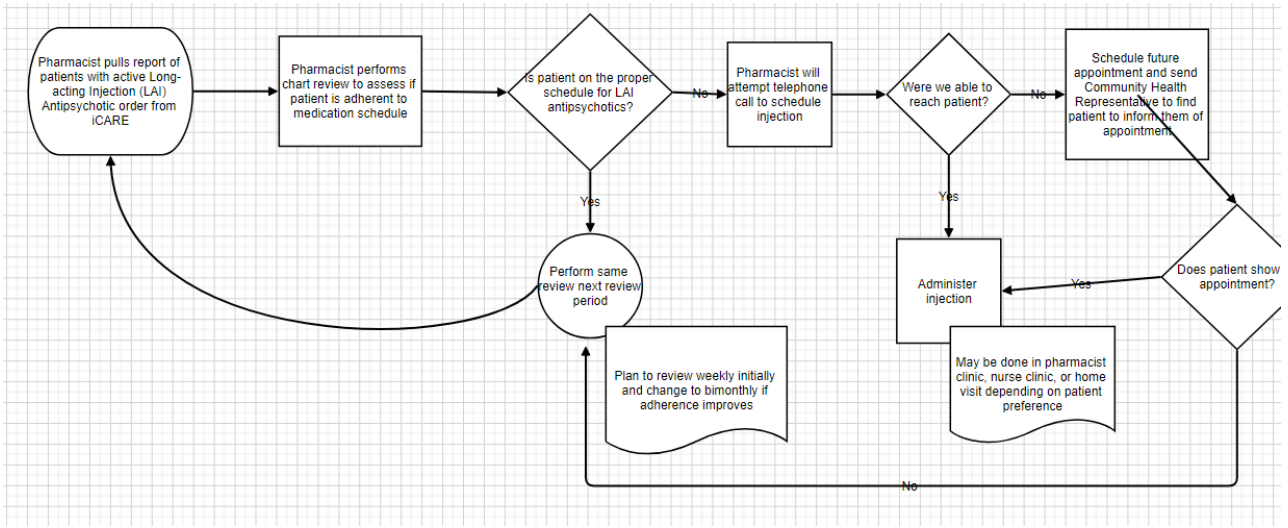
# Redesigning Mental Health Care– Model for Improvement

| PDSA Cycle | Change Concepts To Use | Measures Impacted |
|---|---|---|
| Test Dedicated behavioral health pharmacists to coordinate care (# 1) | 12, 20, 27, 39, 49, 51 | 1. Increase number of psychiatric medication interventions made<br>2. Increase percent medication refills<br>3. Maintain or Increase satisfaction rating<br>4. Decrease average phq9/gad7 scores from baseline<br>5. Increase # of phq-2 screenings<br>6. Increase number of encounters where depression or anxiety pov is addressed |
| Test Coordinate community outreach events focusing on education to reduce stigma related to mental health (# 2) | 38, 39, 66 | 1. Maintain or Increase satisfaction rating<br>2. Increase # of phq-2 screenings<br>3. Increase percent follow-up received given a positive phq2 |
| Test Track referral completion of eligible patients to ABHS (# 3) | 37, 51 | 1. Maintain or Increase satisfaction rating |
| Test customized follow-up for patients taking antipsychotic medication injections (# 4) | 14, 36, 39, 41, 48, 64, 65 | 1. Increase # of phq-2 screenings<br>2. Increase number of psychiatric medication interventions made<br>3. Increase percent medication refills<br>4. Maintain or Increase satisfaction rating |
| Implement PCMH clinic pharmacists to incorporate behavioral health follow-up into chronic disease management (# 5) | 14, 15, 37, 39, 40, 41, 51, 59 | 1. Increase # of phq-2 screenings<br>2. Decrease average phq9/gad7 scores from baseline<br>3. Increase number of encounters where depression or anxiety pov is addressed<br>4. Increase number of psychiatric medication interventions made<br>5. Increase percent medication refills<br>6. Maintain or Increase satisfaction rating |

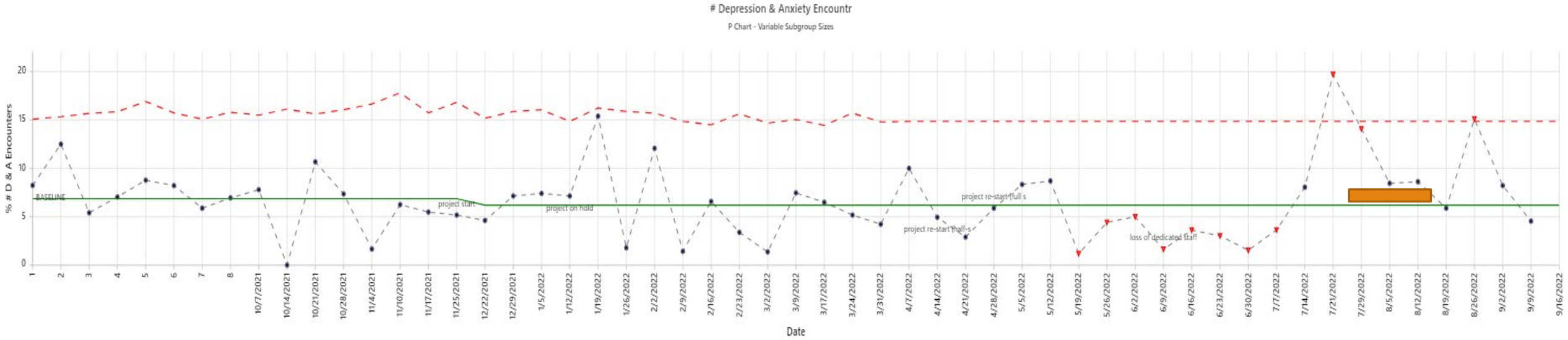
**Change Concept Descriptions**
12. Synchronize, 14. Minimize handoffs, 15. Move steps in the process close together, 20. Consider people as in the same system, 27. Give people access to information, 36. Emphasize natural and logical consequences, 37. Develop alliances/cooperative relationships, 38. Listen to customers, 39. Coach customer to use product/service, 40. Focus on the outcome to a customer, 41. Use a coordinator, 48. Optimize maintenance, 49. Extend specialist's time, 51. Standardization (create a formal process), 59. Use reminders, 64. Offer product/service anytime, 65. Offer product/service anyplace, 66. Emphasize intangibles

# Redesigning Mental Health Care-Process Mapping

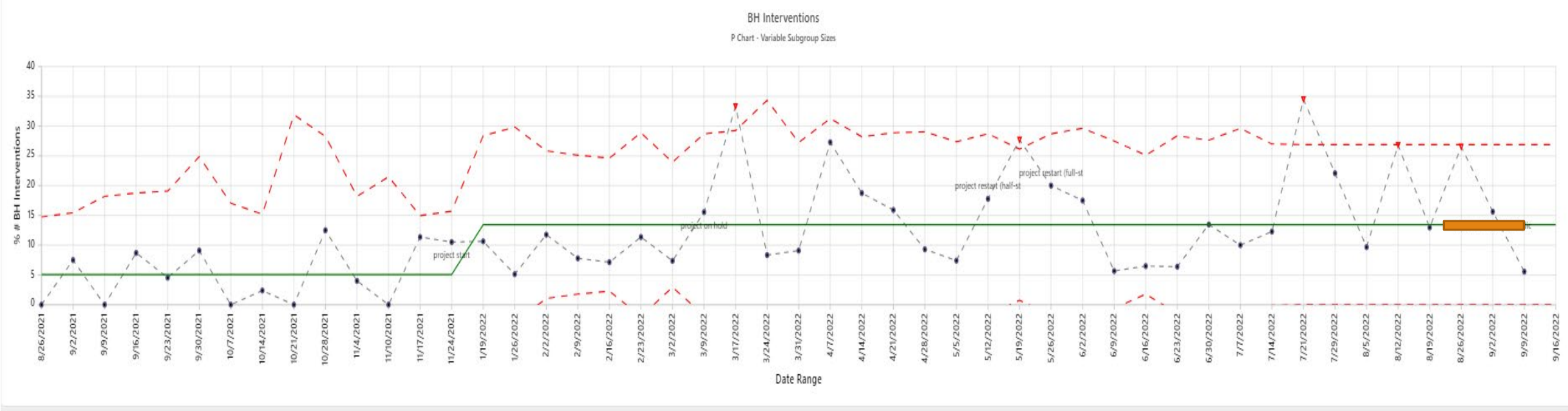


# Redesigning Mental Health Care-Data



# Redesigning Mental Health Care - Data



# Modernizing Patient Screening Data Collection - Description

- *Modernize Data Collection*. The project will redesign collection and input of standard patient screening data in order to decrease time to input and document health screening information. The project will replace a manual process in the current Patient Centered Home Model with a modern, automated solution to allow patients to view, complete and sign forms electronically during a contactless digital process using tablets or their personal devices. Data can be saved directly into the EMR in a fully reportable and searchable format. The automation will improve the number of screenings completed; increase the number of people represented in the data set; reduce time connecting patients to care managers when needs are identified and improve the experience of both patients and staff.

# Modernizing Patient Screening Data Collection-MFI

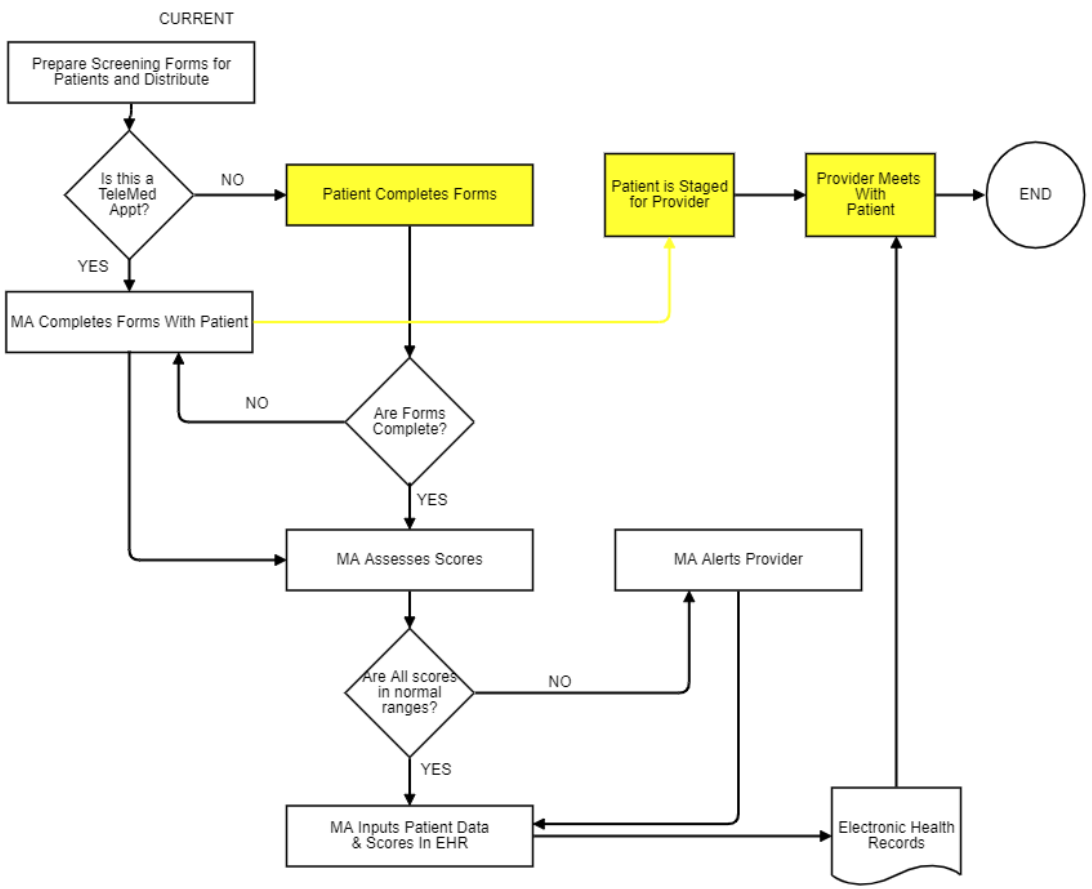
- **What are we trying to accomplish?**
  Redesign Collection & Input of standard patient screening data in order to Decrease Time to input and document health screening information
- **How will we know it is an improvement?**
  - **Outcome:**
    Decrease Time to input and document health screening information
  - **Process:**
    Eliminate Number of equipment malfunctions.
    Decrease Number of errors caused by the system.
    Increase Number of screenings completed using the new automated system.
  - **Balancing:**
    Maintain or Increase Satisfaction Rating

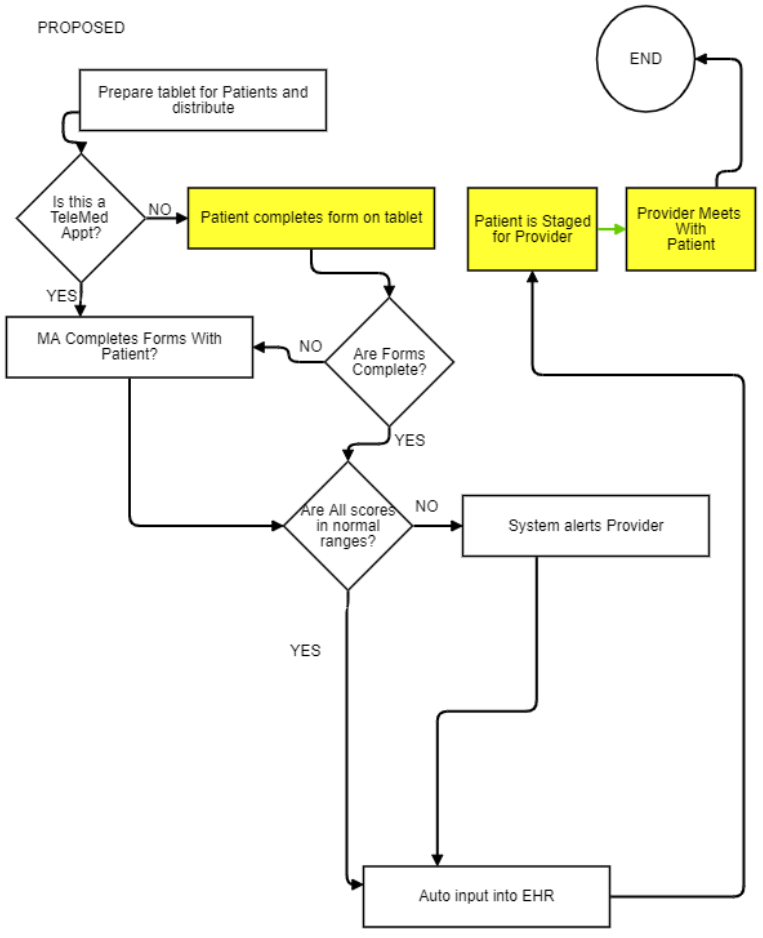
# Modernizing Patient Screening Data Collection-MFI

| PDSA Cycle | Change Concepts To Use | Measures Impacted |
|---|---|---|
| Data Collection Meet with vendor to determine processes for testing & implementation. (# 0) | N/A | ◦ N/A |
| Test Form interface with new technology. (# 1) | 3, 16 | 1. Eliminate number of equipment malfunctions.<br>2. Decrease number of errors caused by the system.<br>3. Maintain or Increase satisfaction rating |
| Test Application of new technology. (# 2) | 16, 18, 27, 39, 40 | 1. Increase number of screenings completed using the new automated system.<br>2. Maintain or Increase satisfaction rating<br>3. Decrease time to input and document health screening information |
| Test Fix new system errors. (# 3) | 16, 18 | 1. Eliminate number of equipment malfunctions.<br>2. Decrease number of errors caused by the system.<br>3. Maintain or Increase satisfaction rating |

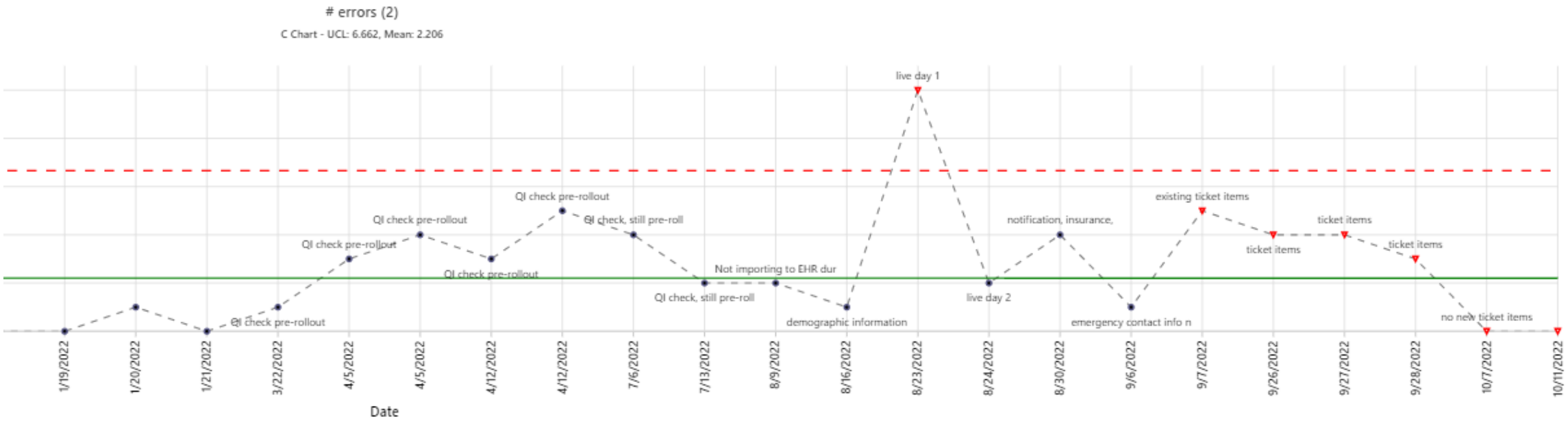
**Change Concept Descriptions**
3. Reduce or eliminate overkill, 16. Find and remove bottlenecks, 18. Smooth workflow, 27. Give people access to information, 39. Coach customer to use product/service, 40. Focus on the outcome to a customer

# Modernizing Patient Screening Data Collection-Process Mapping

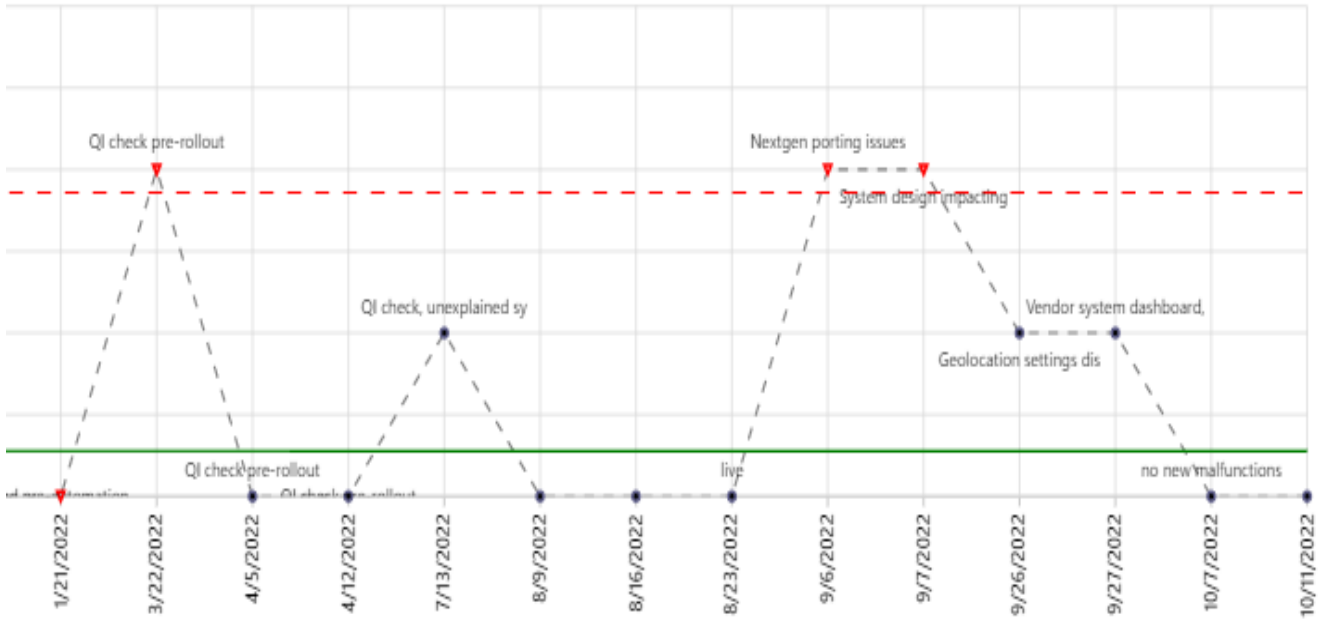


# Modernizing Patient Screening Data Collection-Data



# Modernizing Patient Screening Data Collection-Data




**Our Mission... to raise the physical, mental, social, and spiritual health of American Indians and Alaska Natives to the highest level.**

**Our Goal... to assure that comprehensive, culturally acceptable personal and public health services are available and accessible to American Indian and Alaska Native people.**

**Our Foundation... to uphold the Federal Government's obligation to promote healthy American Indian and Alaska Native people, communities, and cultures and to honor and protect the inherent sovereign rights of Tribes.**