MICHIGAN MEDICINE
UNIVERSITY OF MICHIGAN

# Connecting Collaboration and Quality

## June 21, 2019

**Patricia Craig, MSN, RN**
**Nicki Schmidt, BN, RN**

**Continuous Improvement Specialists**
**Michigan Medicine – University of Michigan**
**Quality Department**

MICHIGAN MEDICINE
UNIVERSITY OF MICHIGAN

# Today's Objectives

- Connect Collaborative participation to *improving* patient care
- Create awareness of key organizational characteristics of a continuous improvement culture
- Establish importance of communication throughout continuous improvement efforts
- Recognize benefit of prioritization and focus in continuous improvement efforts
- Utilize simulated data to determine active and watch metrics
- Create awareness of a framework for structured scientific problem solving
- Practice using a root cause analysis in developing prioritized interventions and apply in simulated setting
- Practice using a PDSA record to develop and document a PDSA cycle in simulated setting
- Recognize the PDSA record as a template for leading problem solving team meeting
- Describe the PDSA cycle
- Practice identifying process and outcome metrics
- Practice the use of data in simulated PDSA cycle
- Connect learning to selected MSQC project

# Introductions

Table Facilitator Role:

- Facilitate team through activities

# Activity: Think- Share- Share

## On your own

Think of an improvement effort of in the past…

- What caused the improvement effort to fall short?
- What obstacles were there?

## Share with Table

## Summarize key points

## Share with room

# Common Reasons Efforts Fall Short

1. Traditional organizational “culture”
2. Lack of communication and consensus
3. Not valuing and addressing resistance to change
4. All work is a priority
5. Assuming you know what the problem is
6. Not validating the impact of efforts and making adjustments

MICHIGAN MEDICINE
UNIVERSITY OF MICHIGAN

# Continuous Improvement

MICHIGAN MEDICINE
UNIVERSITY OF MICHIGAN

# Continuous Improvement

MICHIGAN MEDICINE
UNIVERSITY OF MICHIGAN

# What is Culture? Why Does it Matter?

# Continuous Improvement Culture

| Traditional Culture | Continuous Improvement Culture |
|---|---|
| Managers Direct | Managers Coach/Enable |
| Functional Silos | Crossfunctional Teams |
| Internal Focus | Customer Focus |
| Gain Information Through Meetings | Gain Understanding Where the Work Happens |
| Hide defects and errors | Surface errors to proactively address them |
| Have the Right Answers | Ask the Right Questions |
| Blame People | Blame the Process |
| Data, Data and More Data | Purposeful Data Collection & Use |
| Guard Information | Share Information |
| Fire Fighting | Identify and Fix Root Causes |
| “Expert” Driven, Periodic Improvement | Staff Driven, Continuous Improvement |

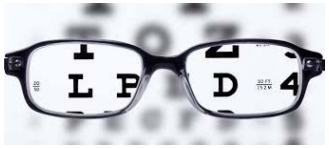
MICHIGAN MEDICINE
UNIVERSITY OF MICHIGAN

# What Can You Do to Increase Success?

## Engagement

## Clarity

## Focus



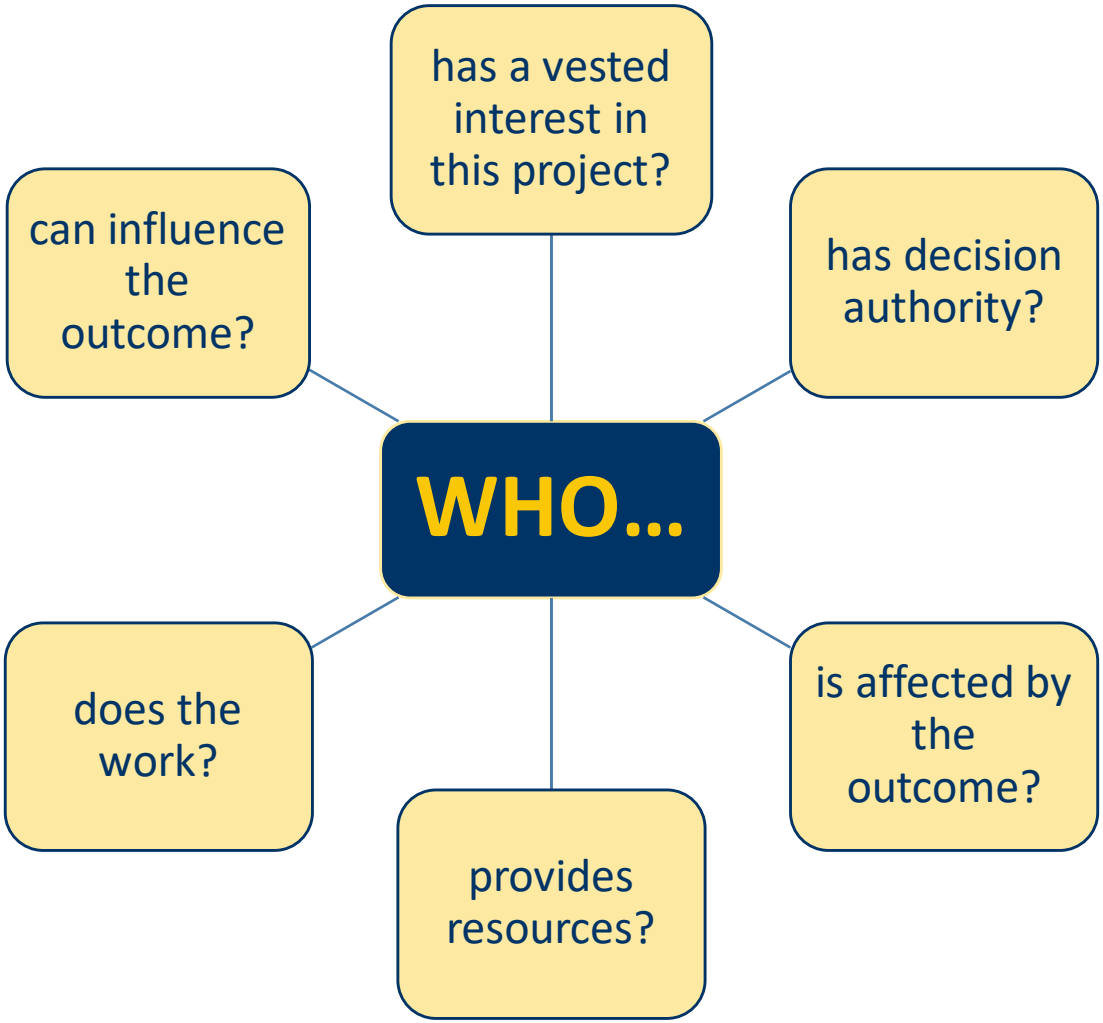

## Discipline

Adapted K. Martin "*The Outstanding Organization*"


US BOTH KNOW THIS NOT END WELL...

MICHIGAN MEDICINE
UNIVERSITY OF MICHIGAN

# Who Needs to be Involved?



# Why?


MSQC is a collaborative of Michigan hospitals dedicated to overall surgical quality improvement, including **better patient care and lower costs**. Our goal is simple: we work to make Michigan the best place for surgery in the country.

# Why? What Purpose?

- Safe
- Timely
- Effective
- Efficient
- Equitable
- Patient-Centered

# Why?

## Collaborative Participation
## 2019 Focus Projects


# Continuous Improvement


WHEN EVERYTHING IS A
PRIORITY,
NOTHING IS A
PRIORITY.
The Karen Martin Group

**Switch Tasking Activity**

Task #1: Focus Reduces Chaos

Task #2: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17

**Round 1 – Alternate between tasks: letter, number, letter, number,**

Sentence: _____

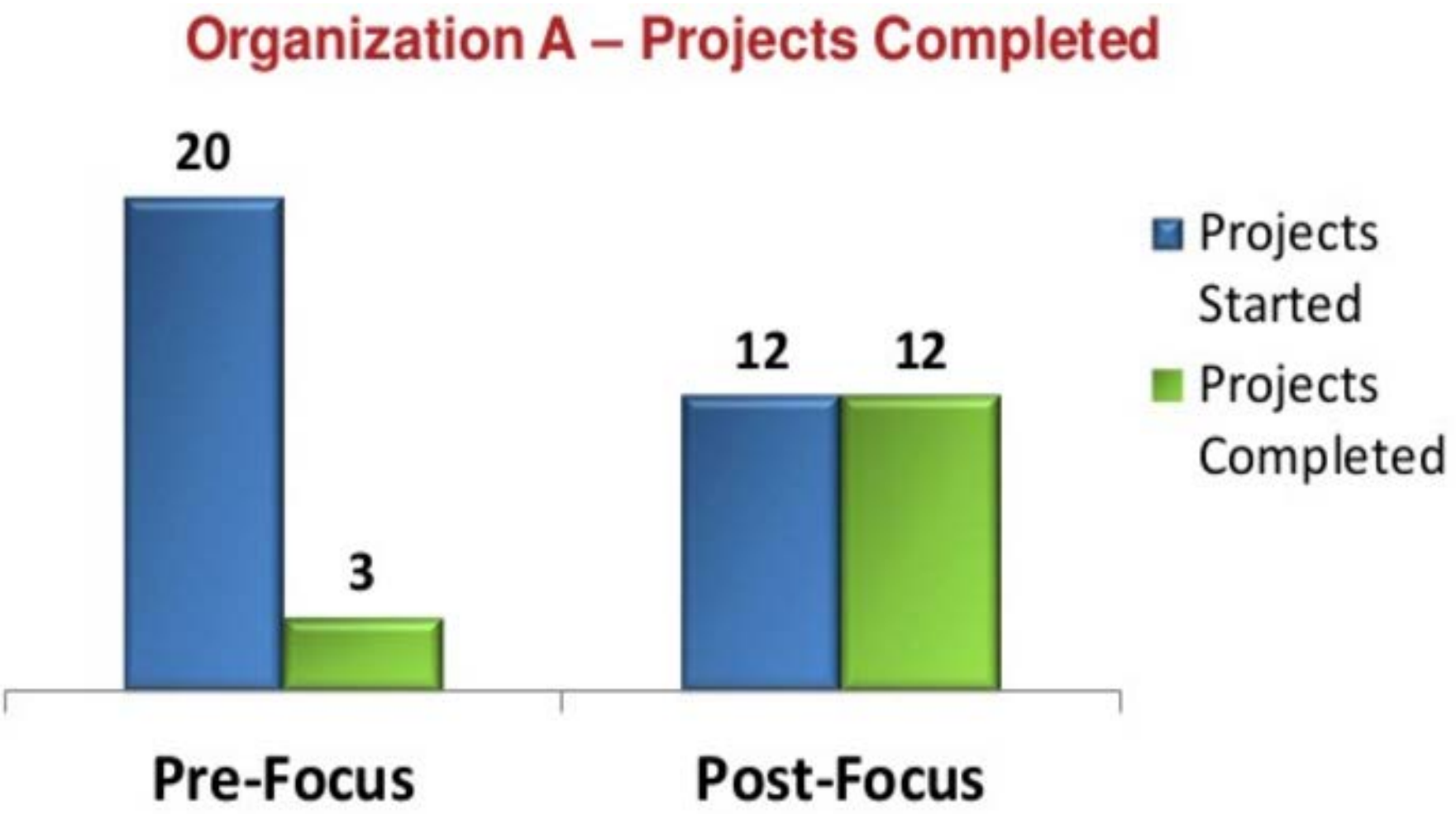
Numbers: _____

**Round 2 – Write the full sentence and then the numbers.**

Sentence: _____

Numbers: _____

Source: Karen Martin




Source: Karen Martin

# Active vs. Watch Metrics

- Active Metric
  - One to three metrics that you are actively trying to improve or impact
  - Can be linked to organizational strategies
  - Focus of majority of problem solving
- Watch Metric
  - All the other metrics that are important but that are not actively being worked on
  - Keeping the pulse of performance
  - Depending on performance and priority may one day become an Active Metric

# Active vs. Watch Metrics Dashboard Example

| ICU - Active Metrics | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Metric | Goal | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr |
| Medication Errors | 0 | 1 | 2 | 1 | 0 | 0 | 2 | 1 | 1 | 0 | |
| Employee Harm | 0 | 2 | 3 | 1 | 4 | 2 | 3 | 3 | 2 | 1 | |
| Readmissions | 10% | 15% | 18% | 13% | 10% | 8% | 6% | 7% | 4% | 5% | |
| Pressure Ulcers - Hospital Acquired | 0 | 1 | 2 | 2 | 1 | 0 | 2 | 2 | 3 | 1 | |

| ICU - Watch Metrics | | | | | |
|---|---|---|---|---|---|
| Metric | Goal | Q1 | Q2 | Q3 | Q4 |
| Vent Bundle Compliance | 98% | 100% | 99% | 99% | |
| Vent Associated Pneumonia | 0 | 0 | 2 | 0 | |
| Employee Engagement | 4.5 | 4.8 | 4.6 | 4.4 | |
| Specimen Mislabel | 0 | 1 | 1 | 1 | |
| Hand Hygiene | 95% | 98% | 92% | 90% | |
| UTI | 0 | 1 | 1 | 0 | |
| C-Diff | 0 | 0 | 0 | 0 | |
| Patient Falls | 0 | 2 | 0 | 0 | |

# Case Study: Introduction

Saint X Hospital is a member of 15 hospital quality collaborative looking to **reduce postoperative opioid prescribing** in the State of Michigan. The collaborative has recommended interventions for implementation.

# Activity: Case Study
# Part One - Prioritization

**In pairs, at your table (3 min)**

- Read through the case study
- Prioritize metrics into active and watch metrics
- Create a “dashboard” based on progress to target by writing an “A” over active metrics and “W” on watch metrics

**Once complete, briefly share at your table: (2 min)**

- Selected active and watch metrics
- Rationale for selection

# Continuous Improvement

# Scoping the Problem

## BIG VAGUE CONCERN

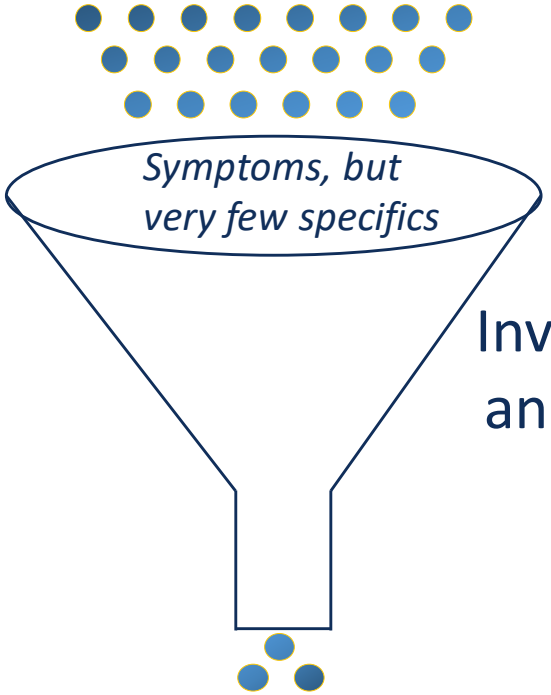

Investigation and analysis sharpen our focus

## Manageable Focus

*Adapted from Lean Pathways, Inc. (2012)*

# Scoping the Problem

Patients Have an Email Address for the 90-Day PRO Assessment



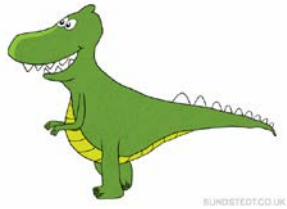

Investigation and analysis sharpen our focus

Email addresses for patients having laparoscopic GYN procedures

*Adapted from Lean Pathways, Inc. (2012)*

MICHIGAN MEDICINE
UNIVERSITY OF MICHIGAN

# Addressing the Scope Monster

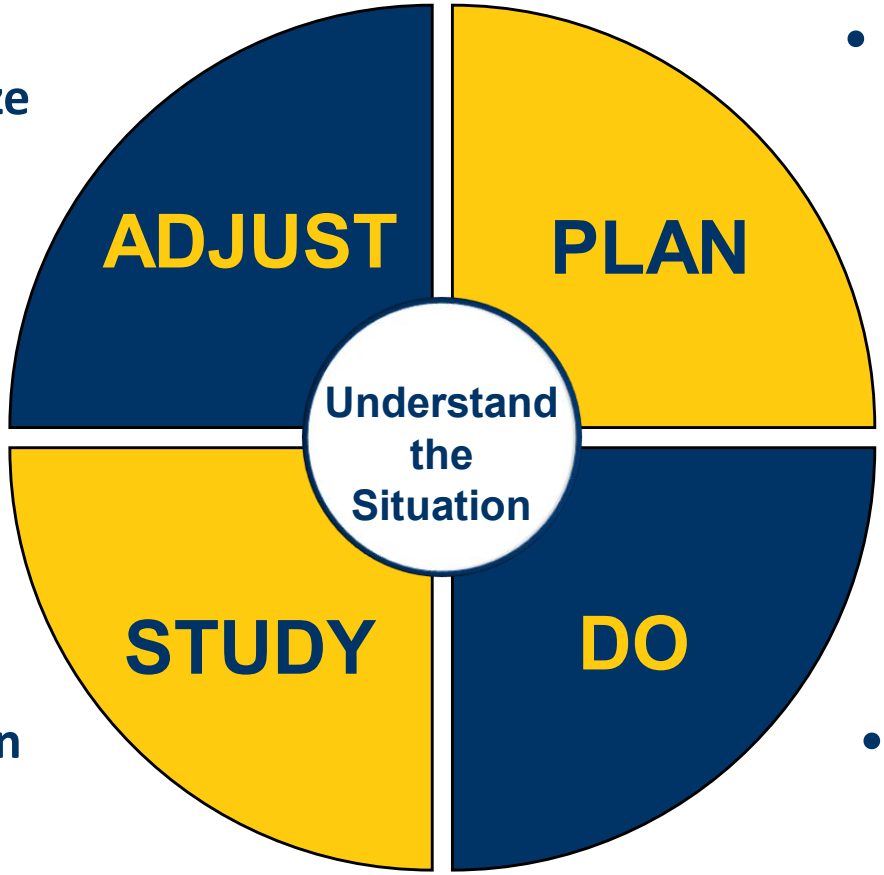


| Original Scope | Reduced Scope – "Plant Your Flag" |
|---|---|
| Poor Nurse / Physician Communication | Number of times the Physician and Nurse speak after morning rounds<br>- Physician limited to the Hospitalist<br>- Nurse limited to the Case Management Nurse<br>- Unit reduced to 7A Internal Medicine in UH |
| Absence of End of Life Discussions | Number of advanced directives completed for clinic patients<br>- Limited to Taubman General Medicine Clinic<br>- Limited to the Residents' Clinic<br>- Limited to the Friday morning Resident Clinic |

# How = Scientific Approach

- Adjust & Standardize

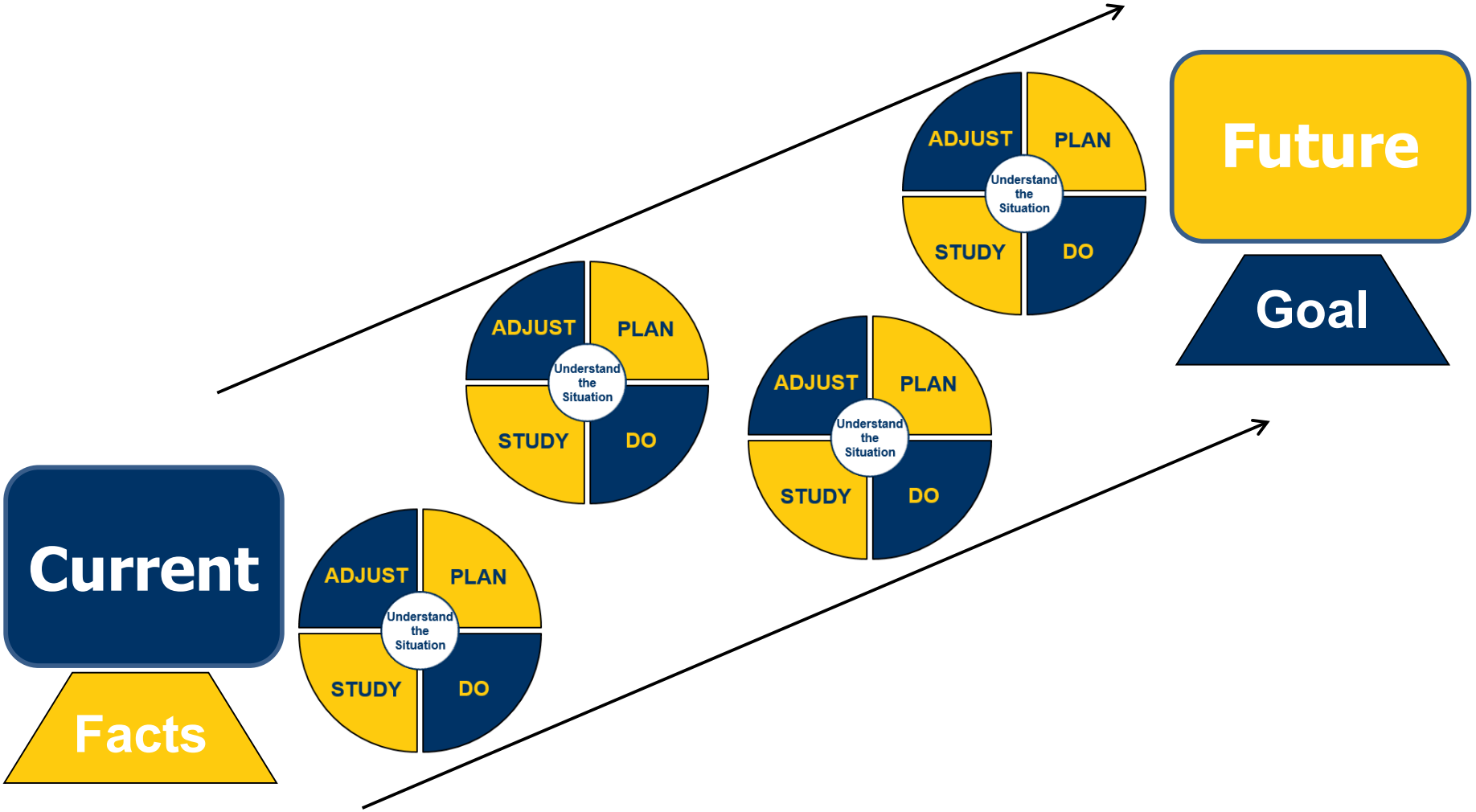
- Make a Hypothesis based on Data




- Reflect on Data and Results

- Try Something

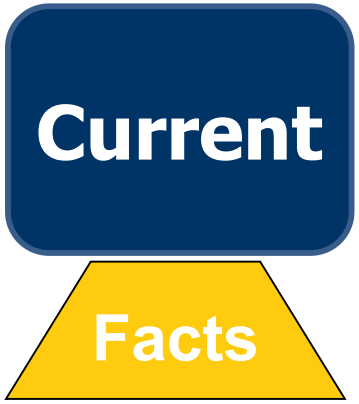
# Learning Our Way Forward



# Understanding the Situation


| | |
|---|---|
| **Problem:** What is the problem? | PDSA Cycles: |
| **Importance:** Why is this important? | |
| **Current Condition:** Where are we now? | |
| **Target:** Where do we want to be? | |
| **Root Causes:** What are the causes? | |

# How Can We Find Out?

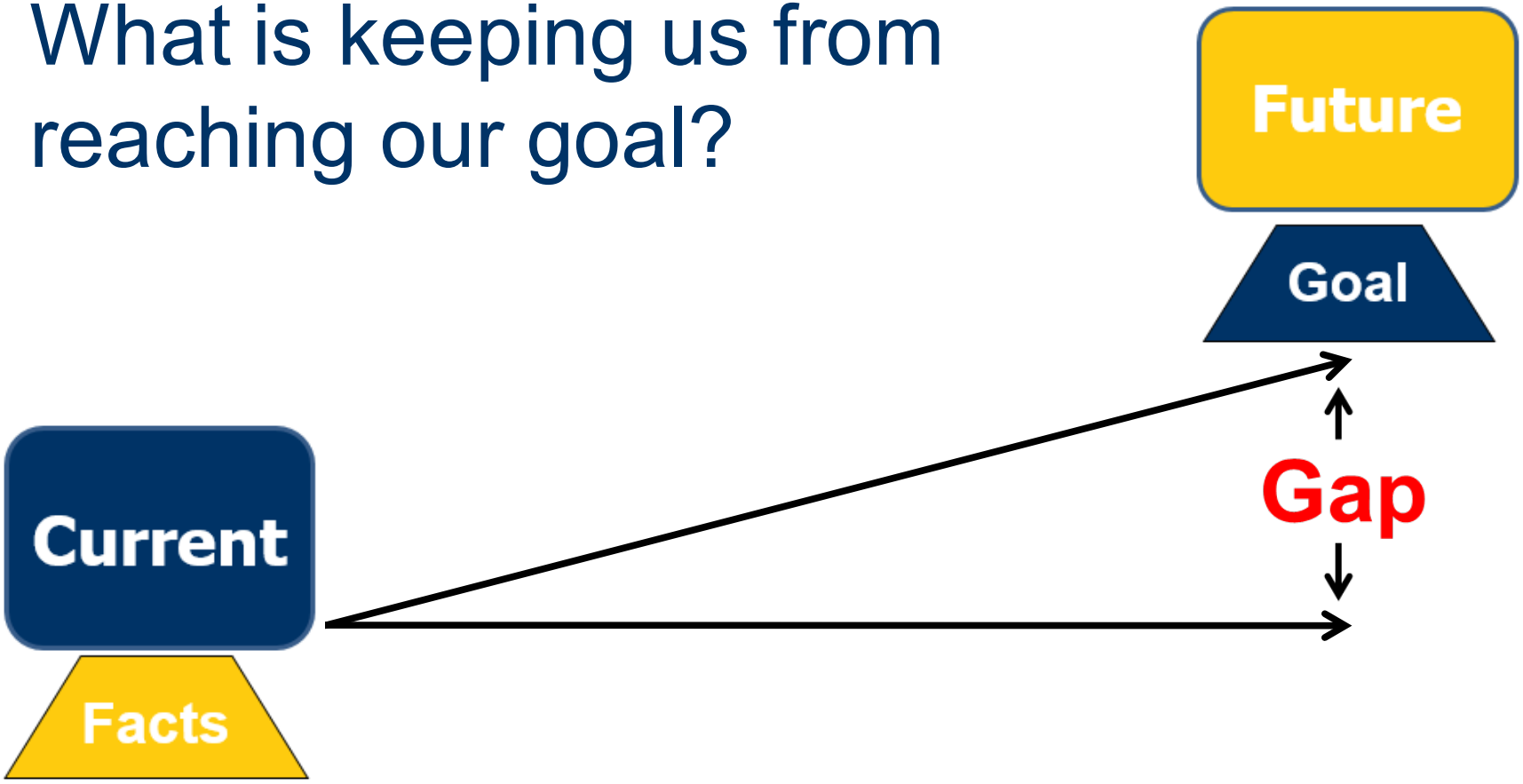



Understanding the Current Condition

- Go See
- Mapping
- Data Collection

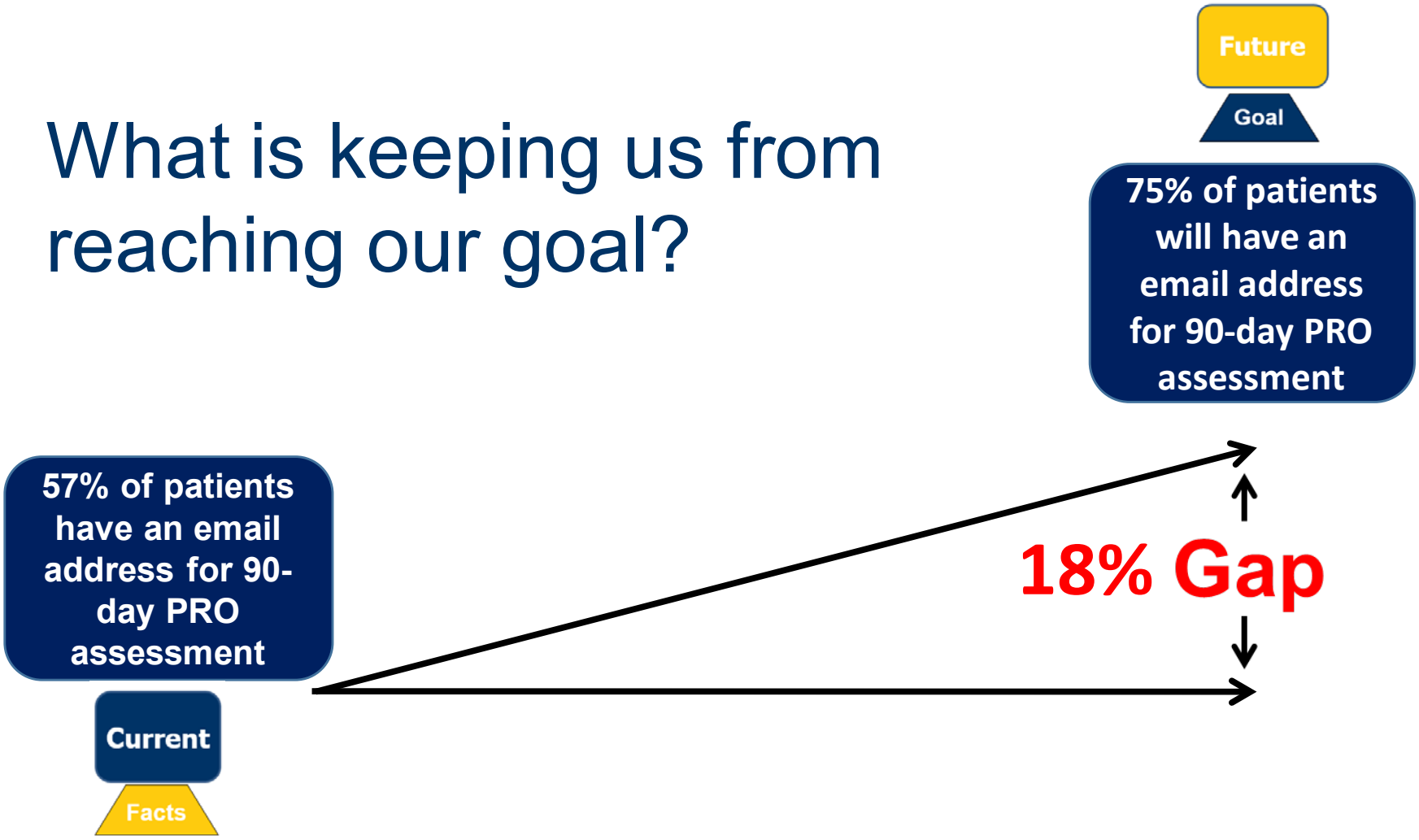
# Understanding the Gap

What is keeping us from reaching our goal?



# Understanding the Gap

What is keeping us from reaching our goal?



# Root Cause Analysis

- ✓ Help to think more deeply about the problem
- ✓ Help to surface the real causes
- ✓ Include Fishbone Diagrams, 5 Whys and Root Cause Trees

# A Real Problem

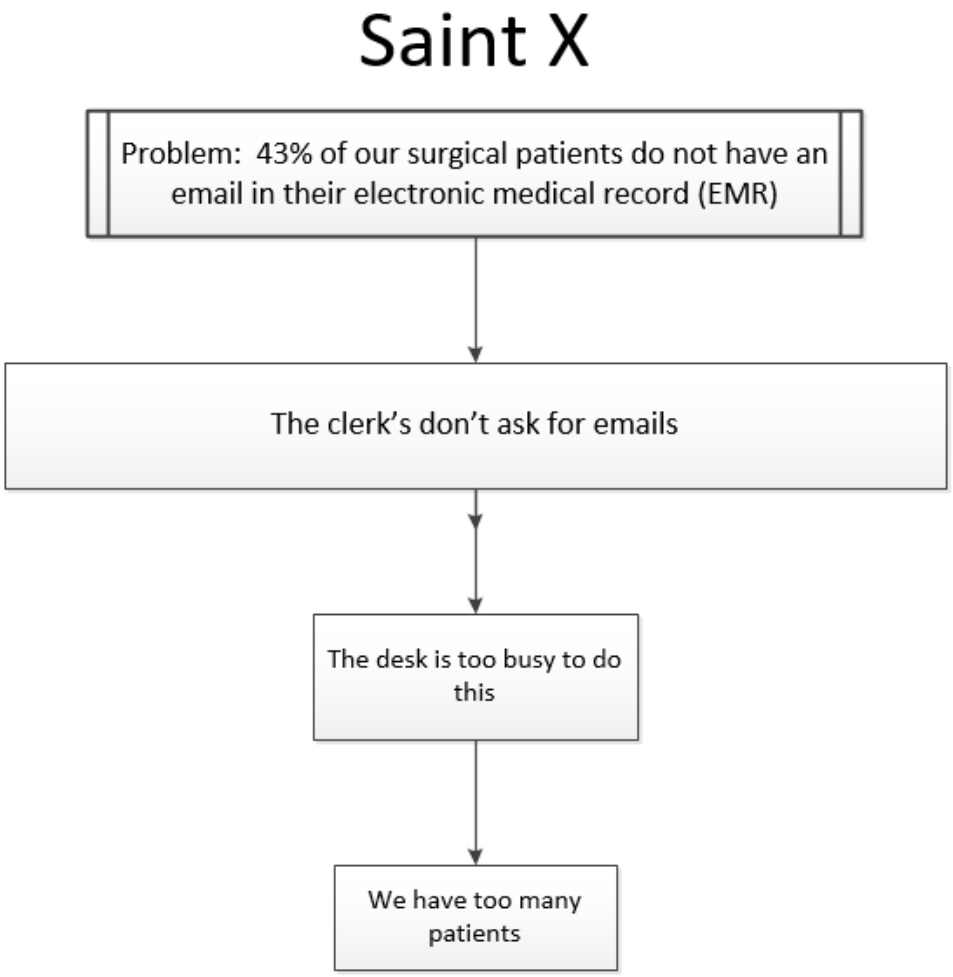
The stone on **the Jefferson Memorial** was crumbling.

?? Water pressure??

??chemicals??

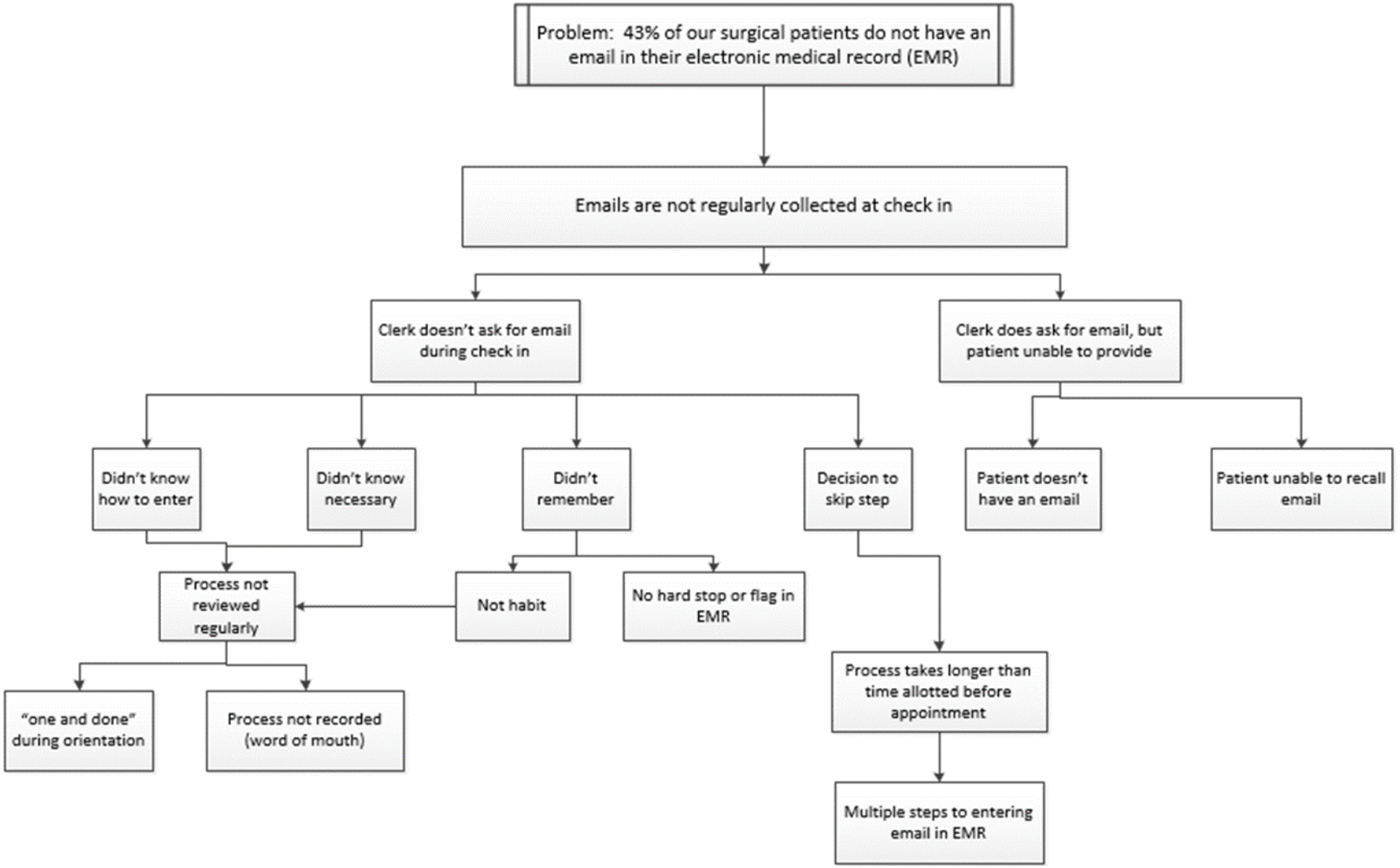
??material failure??

# Ineffective Root Cause



# Case Study: More Effective

## Saint X



# Root Cause Analysis Tips

- It gets easier with practice
- Warning! Be on the look out for…
  - Causes you have no control over
  - The *5-Whos*
  - Dead-end paths
- There is often more than one root cause
- Add available data – gather more if needed
- Root causes often come down to “no standard” or a “standard not being followed”

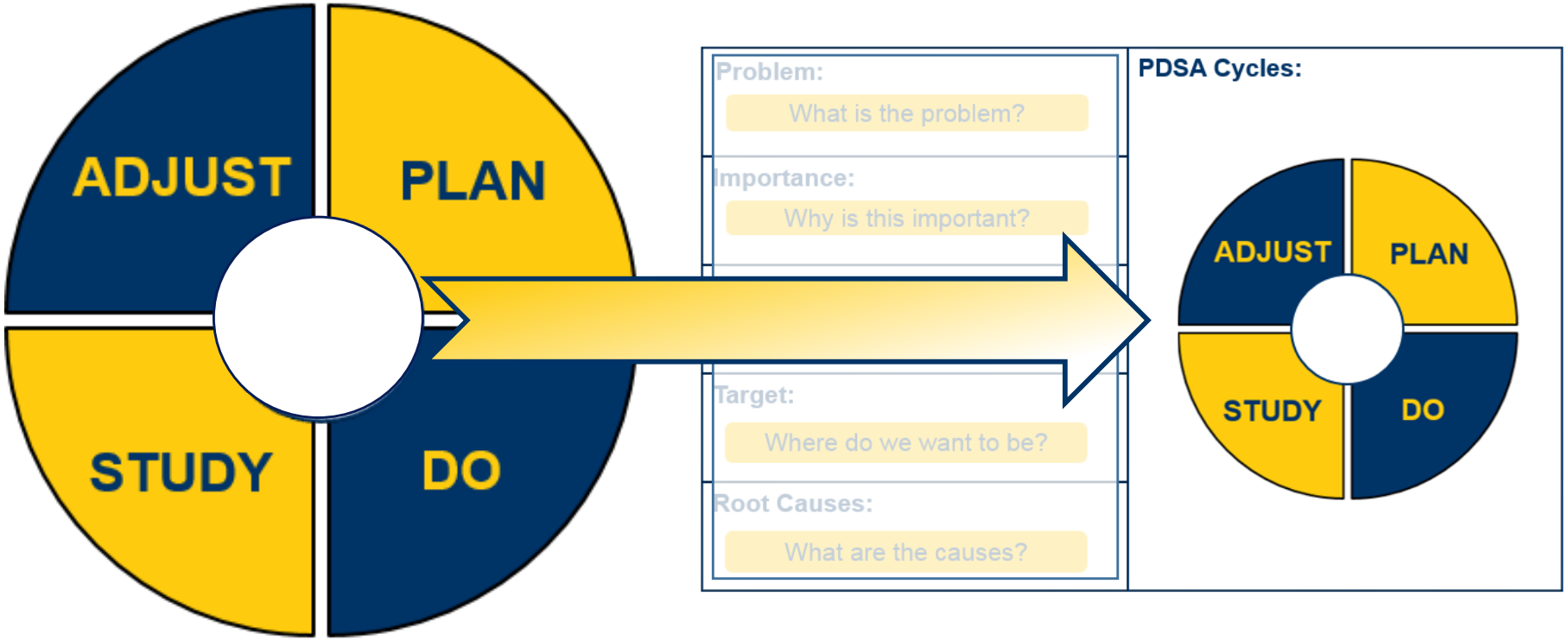
MICHIGAN MEDICINE
UNIVERSITY OF MICHIGAN

# Continuous Improvement

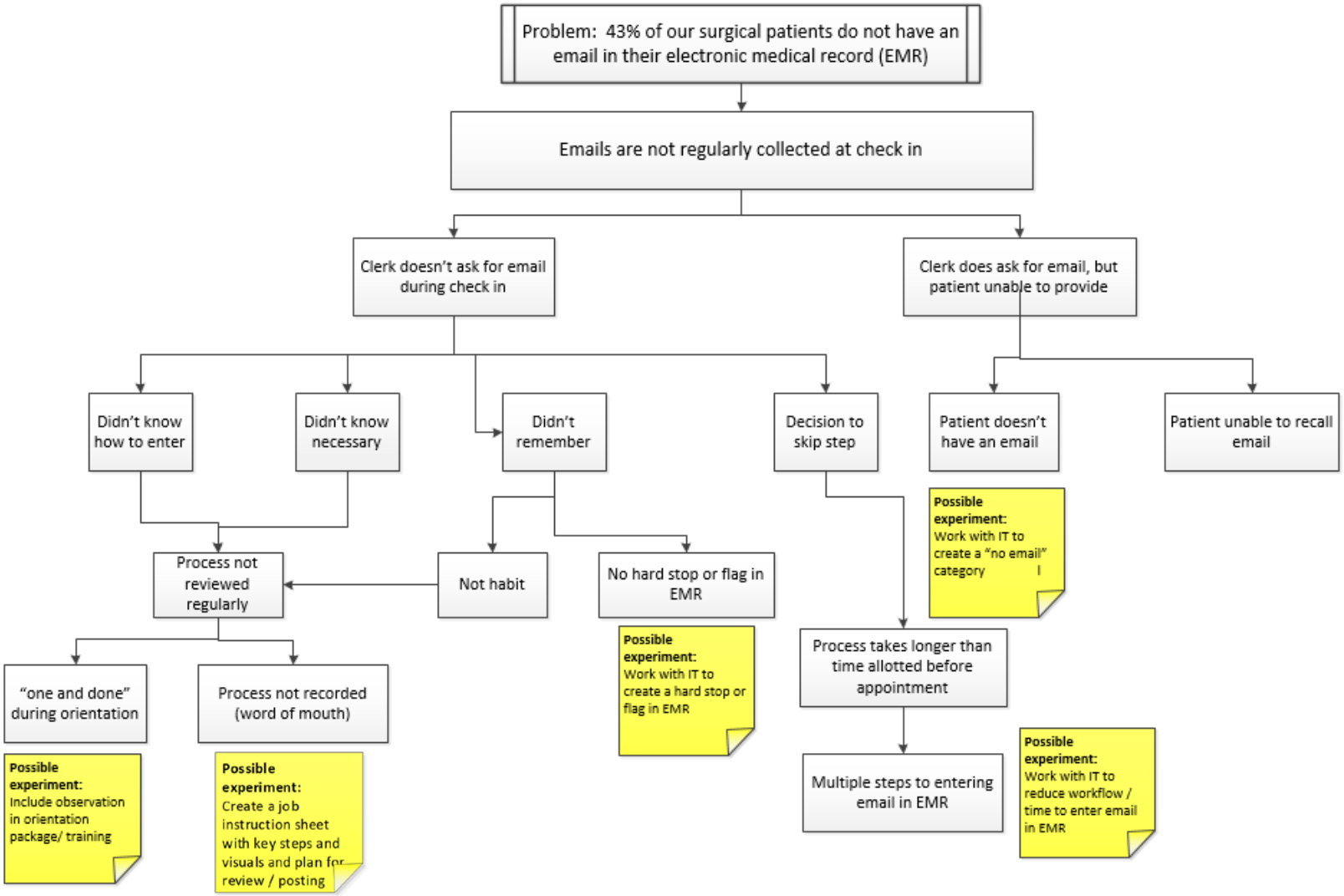
# How Will We Close the Gap?

MICHIGAN MEDICINE
UNIVERSITY OF MICHIGAN

# Scientific Problem Solving

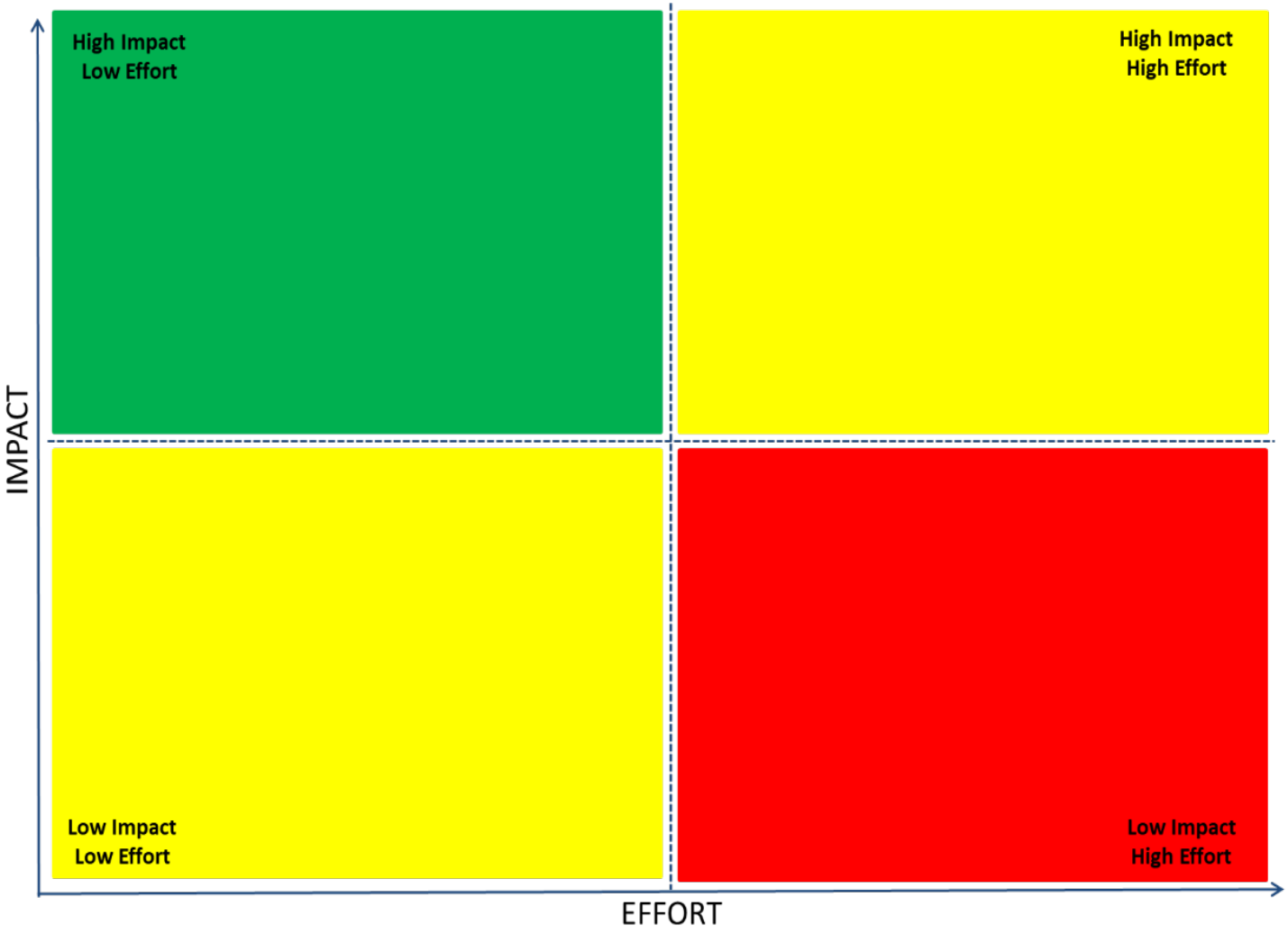


# Case Study: Address a Root Cause



MICHIGAN MEDICINE
UNIVERSITY OF MICHIGAN

# Impact / Effort Matrix

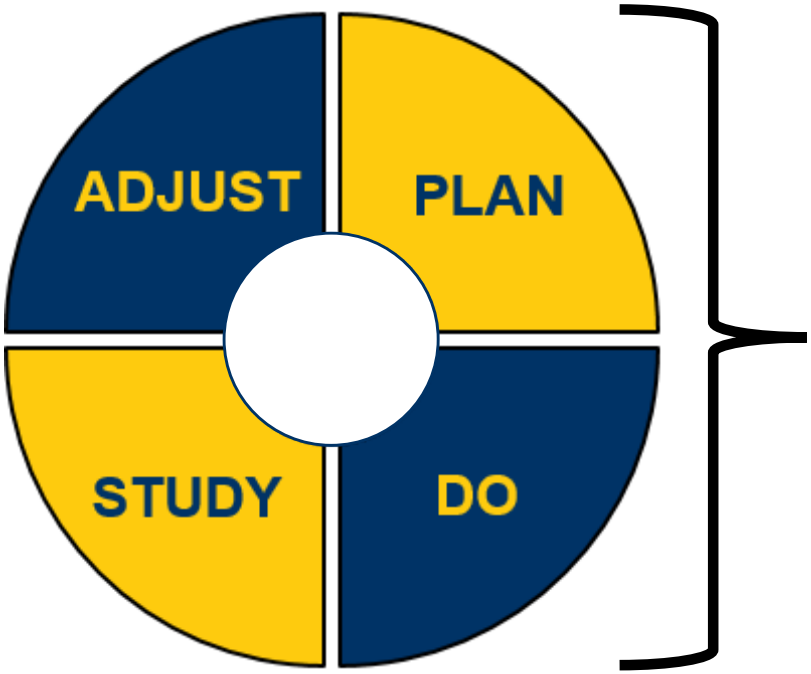



# Activity: Case Study Part Two Prioritizing Experiment Options

**In pairs, at your table : (10 min)**

- Review additional Case Study information
- For each potential experiment, put each corresponding letter on the appropriate section of the Impact / Effort matrix
- Decide which experiment you will try first

# Problem Solving Thinking




## PDSA Record

| Date | What will we do? | Who will do it? | When will it be done? | What will we measure / find out? | What is the data? | | 1. What did we learn?<br>2. What did the data tell us?<br>3. What is our next step (next line)? |
|---|---|---|---|---|---|---|---|
| | | | | | Before | After | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

MICHIGAN MEDICINE
UNIVERSITY OF MICHIGAN

# PDSA Record

| Date | What will we do? | Who will do it? | When will it be done? | What will we measure / find out? | What is the data? | | 1. What did we learn?<br>2. What did the data tell us?<br>3. What is our next step (next line)? |
|---|---|---|---|---|---|---|---|
| | | | | | Before | After | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

What is the plan?

# Using Data in Healthcare


**A few examples:**

- Clinical Research
- Patient Satisfaction
- Population Health
- Care Management
- Financial Analysis
- Quality Scores
- **Process Improvement**

# Data for Improvement Work

| Data Use |
| --- |
| To bring new knowledge into daily practice |
| Gather “just enough” data to learn and move to action |
| “Small tests of significant changes” accelerates the rate of improvement |
| Real time |

Adapted from IHI, 2018

# Types of Metrics

- **Outcome** metrics (Lag)
  - Focuses on the end result
  - Usually part of “Why do we care?”

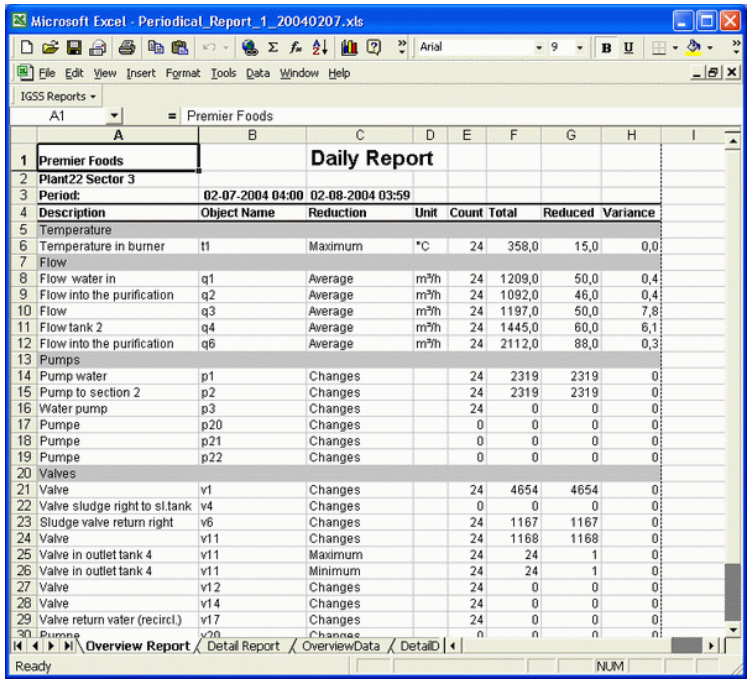
- **Process** metrics (Lead)
  - Focuses on steps within the process
  - Usually part of Understanding the Situation
  - May be an indicator of outcome

# Outcome or Process Metric?

- Percent of patients by day that were asked for an email
- Percent of patients with complete opioid prescription in workstation for 2019
- Number of patients that exceeded the recommended number of prescribed opioids today
- Percent of patients in 2019 that have an email entered into EHR

# Data Collection Options

- Time Studies
- Tally Sheets
- Frequency Charts
- EMR Reports
- Others?


Microsoft Excel - Periodical_Report_1_20040207.xls

| | A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|---|
| 1 | Premier Foods | | Daily Report | | | | | |
| 2 | Plant22 Sector 3 | | | | | | | |
| 3 | Period: | 02-07-2004 04:00 | 02-08-2004 03:59 | | | | | |
| 4 | Description | Object Name | Reduction | Unit | Count | Total | Reduced | Variance |
| 5 | Temperature | | | | | | | |
| 6 | Temperature in burner | t1 | Maximum | °C | 24 | 358,0 | 15,0 | 0,0 |
| 7 | Flow | | | | | | | |
| 8 | Flow water in | q1 | Average | m³/h | 24 | 1209,0 | 50,0 | 0,4 |
| 9 | Flow into the purification | q2 | Average | m³/h | 24 | 1092,0 | 46,0 | 0,4 |
| 10 | Flow | q3 | Average | m³/h | 24 | 1197,0 | 50,0 | 7,8 |
| 11 | Flow tank 2 | q4 | Average | m³/h | 24 | 1445,0 | 60,0 | 6,1 |
| 12 | Flow into the purification | q6 | Average | m³/h | 24 | 2112,0 | 88,0 | 0,3 |
| 13 | Pumps | | | | | | | |
| 14 | Pump water | p1 | Changes | | 24 | 2319 | 2319 | 0 |
| 15 | Pump to section 2 | p2 | Changes | | 24 | 2319 | 2319 | 0 |
| 16 | Water pump | p3 | Changes | | 24 | 0 | 0 | 0 |
| 17 | Pumpe | p20 | Changes | | 0 | 0 | 0 | 0 |
| 18 | Pumpe | p21 | Changes | | 0 | 0 | 0 | 0 |
| 19 | Pumpe | p22 | Changes | | 0 | 0 | 0 | 0 |
| 20 | Valves | | | | | | | |
| 21 | Valve | v1 | Changes | | 24 | 4654 | 4654 | 0 |
| 22 | Valve sludge right to sl.tank | v4 | Changes | | 0 | 0 | 0 | 0 |
| 23 | Sludge valve return right | v6 | Changes | | 24 | 1167 | 1167 | 0 |
| 24 | Valve | v11 | Changes | | 24 | 1168 | 1168 | 0 |
| 25 | Valve in outlet tank 4 | v11 | Maximum | | 24 | 24 | 1 | 0 |
| 26 | Valve in outlet tank 4 | v11 | Minimum | | 24 | 24 | 1 | 0 |
| 27 | Valve | v12 | Changes | | 24 | 0 | 0 | 0 |
| 28 | Valve | v14 | Changes | | 24 | 0 | 0 | 0 |
| 29 | Valve return vater (recircl.) | v17 | Changes | | 24 | 0 | 0 | 0 |
| 30 | Pumpe | v20 | Changes | | 0 | 0 | 0 | 0 |


# Data Collection

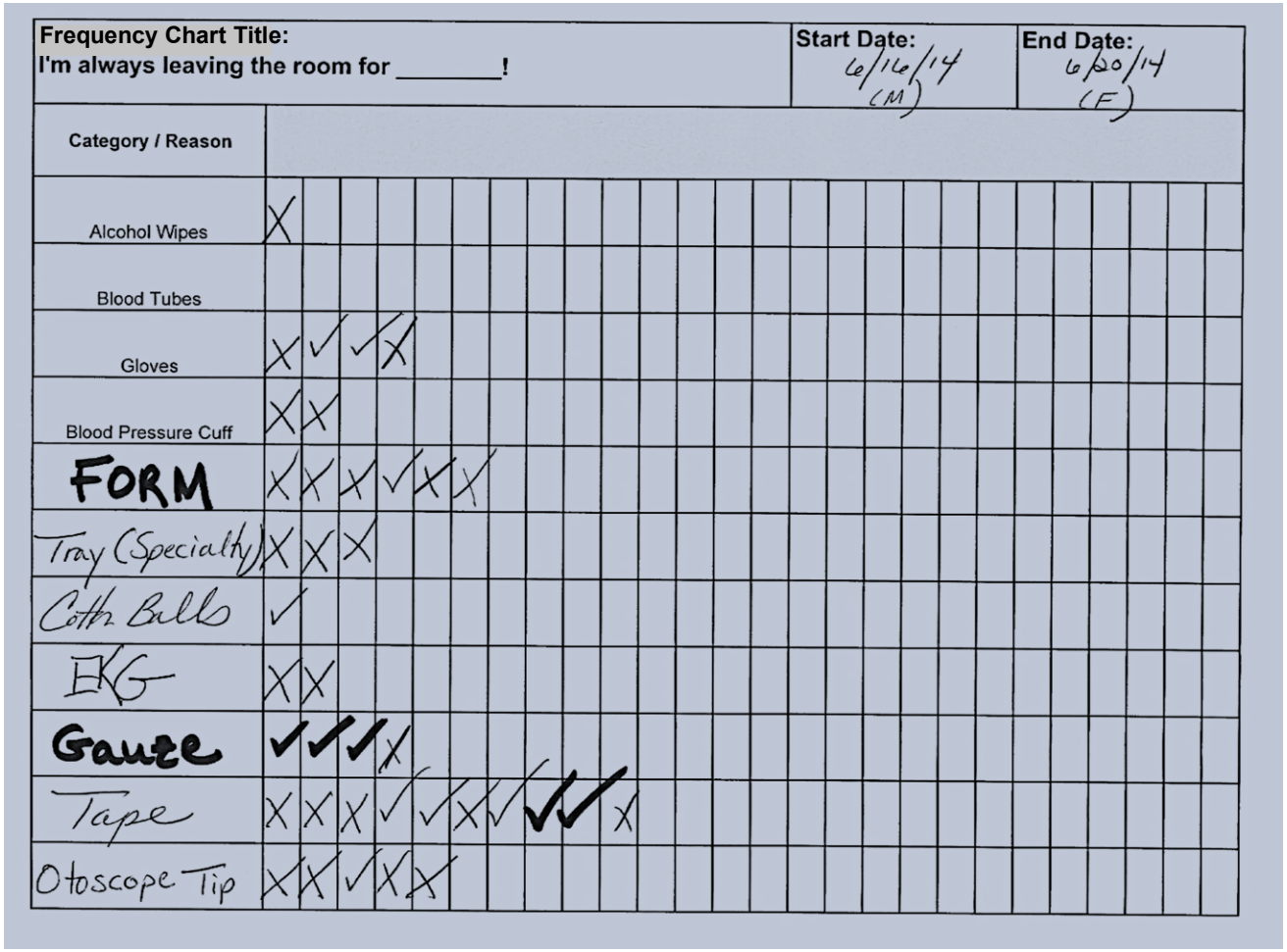
- Collecting data can help us:
  - Understand what is currently happening
  - Fill in process metrics
  - Establish a baseline (measurement of current)
  - Identify and define issues/problems
- Collecting data should be done as close to work as possible
- Collecting data should be practical

MICHIGAN MEDICINE
UNIVERSITY OF MICHIGAN

# Frequency Chart Data

Problem = Provider not able to locate MA when needed

Purpose = To understand why MA was not in area



# Data Collection

- Charts can be simple and created **by hand**
- Charts can be done by **any role**
- Make sure the chart is **easily accessible** to mark in real time
- Leave room to add to the chart

MICHIGAN MEDICINE
UNIVERSITY OF MICHIGAN

# PDSA Record

| Date | What will we do? | Who will do it? | When will it be done? | What will we measure / find out? | What is the data? | | 1. What did we learn?<br>2. What did the data tell us?<br>3. What is our next step (next line)? |
|---|---|---|---|---|---|---|---|
| | | | | | Before | After | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

What is the plan?

MICHIGAN MEDICINE
UNIVERSITY OF MICHIGAN

# Experiment Planning Guide

| Key Elements | Details | Follow-up Needed Before |
|---|---|---|
| Communication Needed Prior to Experiment<br>- Who needs to know?<br>- Have we socialized it? | | |
| Experiment Job Aides, Data Collection Tools, or Equipment Needed<br>- Is specific equipment needed?<br>- Does standard job aid need to be developed?<br>- Is a template or checklist needed? | | |
| Experiment Data Collection?<br>- What will be collected?<br>- How will it be collected?<br>- By who? Backup?<br>- Where will data by discussed and displayed? | | |
| Shared Learning<br>- Where will experiment learning be shared and reviewed?<br>- How will improvement suggestions be captured and shared?<br>- How will obstacles be identified and shared? | | |
| Start date: | | |
| Duration of Experiment: | | |


# Activity: Case Study Part Three PDSA

**In pairs, at your table (10 min)**

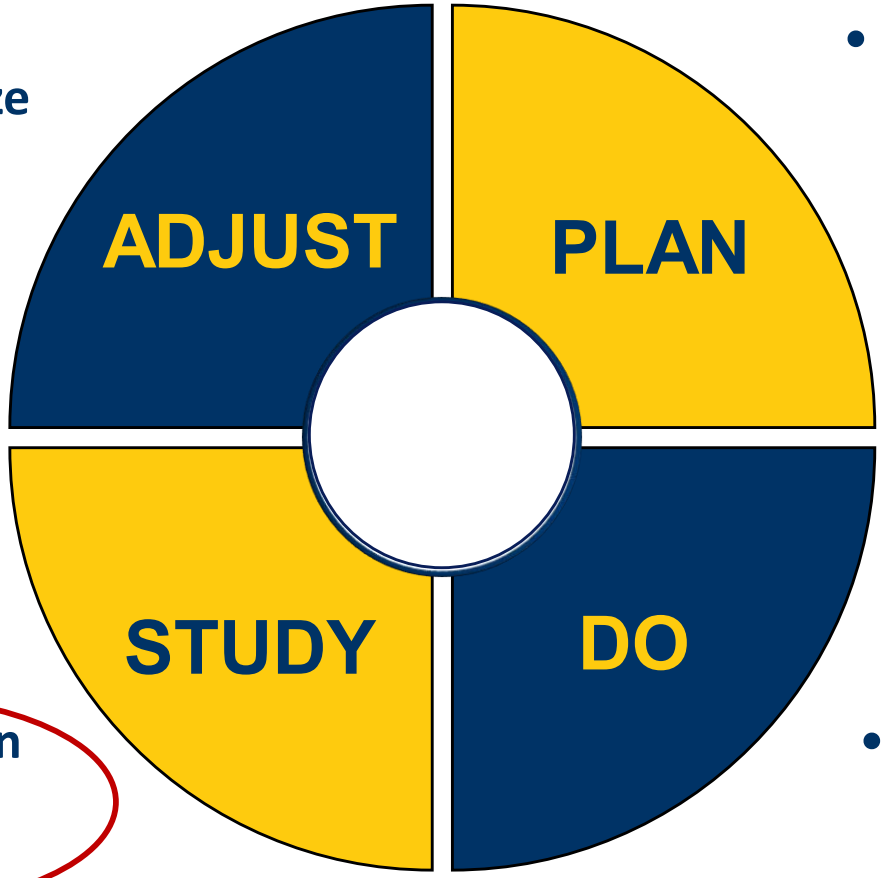
1. Review additional Case Study Information
2. Use Experiment Planning checklist as a guide
3. Complete the left side of the PDSA record with

- What the experiment will be?
- Who will do what and by when?
- What will you measure and how?

# How = Scientific Approach

- Adjust & Standardize

- Make a Hypothesis based on Data




- Reflect on Data and Results

- Try Something

MICHIGAN MEDICINE
UNIVERSITY OF MICHIGAN

# PDSA Record

| Date | What will we do? | Who will do it? | When will it be done? | What will we measure / find out? | What is the data? | | 1. What did we learn?<br>2. What did the data tell us?<br>3. What is our next step (next line)? |
|---|---|---|---|---|---|---|---|
| | | | | | Before | After | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

What is the plan?

What happened and what was learned?


# Activity: Case Study Part Four PDSA

**In pairs, at your table (5 min)**

1. Review additional Case Study information
2. Complete the right side of the PDSA record with
   - What did we learn?
   - What did the data tell us?
3. Complete the left side of the PDSA record with
   - Your next steps
   - Who will do what and by when?
   - What will you measure and how?

MICHIGAN MEDICINE
UNIVERSITY OF MICHIGAN

# Connecting Your Work
# Activity: Think- Share- Share

**Individually, at your table (2 min)**

Thinking about your own process for getting improvement -

- What topics or tools from today's session would you consider applying?
- What questions do you still have?

**Discuss thoughts at your table (2 min)**

**Share thoughts with the collaborative (6 min)**

# What questions do you have?

# Thank You!



MICHIGAN MEDICINE
UNIVERSITY OF MICHIGAN

72