KEYSTONE HUMAN SERVICES "Advancing the Human Spirit"

UNIVERSITY OF Cincinnati

The Journey of a Thousand Miles Begins with a Single Step

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- Director of Quality and Performance Management
- QPM Oversight of Behavioral Health Organization
  - Residential and Community Settings
  - Intellectual Disabilities, Mental Health, Autism Spectrum Disorders
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- USA: PA, DE & CT
- International: Moldova, India

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- BS Psychology
- MHSA (Master's Health Services Administration)
- Certified Six Sigma Black Belt
- Operational Oversight of Hospital Functions
- QI Leadership of Implementation Research at Academic Health Center
- Patient Advisory Council Mentor
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- Administrative Director of Center of Improvement Science, Cincinnati CCTST

Presentation Overview

- A New Approach
- Getting to Know You
- Six Sigma and DMAIC
- Data, Data, Data
- Strong Project Starts
- Making Improvements
- Maintaining the Gains

Active Learning

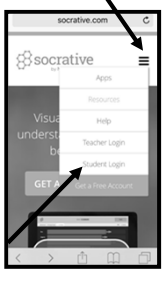
Changes from YOUR Feedback

- Less Broad, a Deeper Dive
- Examples from a Successful Project
- More Time to Do Activities
  - Worksheet Sent Ahead of Time to Registered Participants

Who Are You?

- Answer Privately in Socrative.com,
- Type in Room Number:
  AMYSHORT
- Login as Student
- Enter at Least One Letter as a Name

Click Here for Menu



Or Use the App

STUDENT

Click Here to Login

How Experienced Are You in QI?

- Answer Privately in Socrative.com,
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  AMYSHORT
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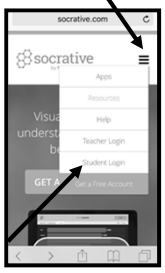

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Keeping It Real *Worksheet*

- What Compliance Issue Keeps You Up at Night?

DMAIC

Define

Measure

Analyze

Improve

Control

Where the Journey Begins: Data

Why Data?

- You Cannot Manage what You Cannot Measure

- Data →Information → Knowledge → Wisdom

What is Data?

Data is….

- Plural of "Datum" *Latin* for "Something Given"
- Set of Values of Qualitative or Quantitative Variables
- Information in a Raw or Unorganized Form that Refer to, or Represent, Condition, Ideas or Objects
- Facts that Can Be Analyzed or Used in an Effort to Gain Knowledge or Make Decisions
- Information that has Been Translated into a Form that Is More Convenient to Move or Process

What Do We Measure?

Characteristics of:

- Individuals We Support
  - Outcomes
  - Demographics / Characteristics
- Workforce
  - Outcomes
  - Demographics
- Programs/Services
  - Outcomes
  - Processes
  - Environment

"Everyday" Data

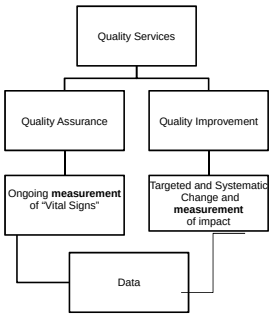
OUTCOME

- Lab/Assessment Results
- Satisfaction Ratings
- Utilization Rate
- Progress Note Content

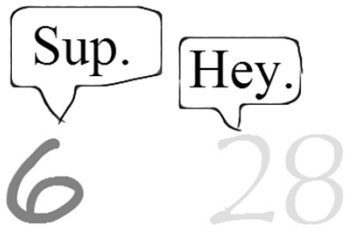
PROCESS

- Timeliness of Expected Deliverable (E.g., 24 Hrs for a Progress Note)
- Points of Contact with Caregivers
- Critical Process Milestones

Quality Assurance or Improvement?



Data Are Our Friends



https://dailysliceofpi.wordpress.com/2013/08/05/perfect-friendly-and-amicable-numbers/

Data Types / Levels

• Nominal	Name
• Ordinal	Order
• Interval	Equal Units
• Ratio	Equal Units & "True 0"
• Derived	Linear Combination

Nominal Data

- To Name an Object and Thus to Assign It to a Class (a.k.a. Categorical)
- Statistics Can Be Applied to These Data Only After They Have Been Converted to Percentages or Proportions, for Example:
- 45% Female and 55% Male
  - Gender
  - Program
  - Level of Delay

Ordinal Data

- Objects Are Measured as Being Either Greater Than or Less Than, Higher or Lower Than a Comparative Object
- Intervals Between Are Meaningless (Non-Standard)
  - Birth Order / Win, Place, Show
  - Likert Scale (Never, Sometimes, Always)

Interval Data

- Interval: A Basic Standard Interval but Not Necessarily a True Zero / Starting Point
  - Difference Between Score of 1 and 2 is Same as Difference Between 2 and 3 Etc.
  - Zero Does Not Have a True Meaning Indicating the Complete Absence of Whatever We Are Measuring
  - E.g. Temperature (Fahrenheit and Celsius)
    - 60 Degrees Is Not Twice as Hot as 30 Degrees
    - 0 Degrees Is Not Absence of Kinetic Energy
  - E.g. Standard Scores (IQ, Adaptive Behavior)

Ratio

- There Is a Basic Standard Interval as in Interval
- Also Has a Meaningful Zero Value
- E.g. Height, Weight, Duration of Time

Descriptive Statistics

Term Given to the Analysis of Data that Helps Describe, Show or Summarize Data in a Meaningful Way

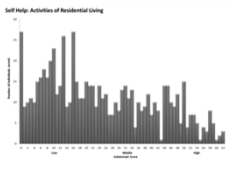
- Measures of Central Tendency
- Measures of Dispersion and Variability

Central Tendency

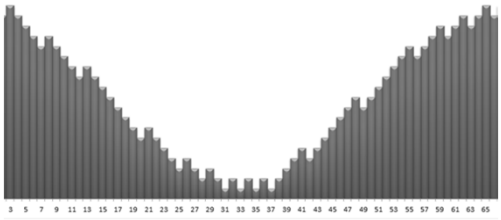
NAME	DESCRIPTION	BEST FOR…
Mode	Most Frequently Occurring Value (Can Have More Than One)	Nominal Data
Median	"Middle Point" of the Distribution; Point Below which 50% of Values Fall	Ordinal Data or for Use with a Skewed Distribution
Arithmetic Mean	Sum of All Data Values in the Distribution Divided by the Number of Values	Most Commonly Used Statistic; Not for Use with Skewed or Bi-Modal Data

Distributions: "Eyeball your data"

- The Importance of Visual Inspection
- First Step in Analyzing and Understanding Your Data
- Discrete Variables
  - Frequency Distribution Table
  - Bar Charts
- Continuous Variables
  - Histogram



Behold……and Beware



Measures of Dispersion/Variability

$$\begin{aligned}\mathrm{Var}(X) &= \mathrm{E}[(X-\mu)^2] \\ &= \mathrm{E}[(X^2 - 2X\mu + \mu^2)] \\ &= \mathrm{E}(X^2) - 2\mu\mathrm{E}(X) + \mu^2 \\ &= \mathrm{E}(X^2) - 2\mu^2 + \mu^2 \\ &= \mathrm{E}(X^2) - \mu^2.\end{aligned}$$

Variability of Distribution

- 1 5 5 5 5 5 5 5 9
- 1 2 2 3 5 6 7 8 9

  - Both Distributions Have a Mean of 5

  - In which Distribution Is Your Score of 9 More "Impressive"?
  - In which Distribution are the Scores More Spread Out?

Know Your Data

Secure the Foundation and Trajectory of Your Project

When in Doubt, Consult an Expert….

When Confident About Your Data, Still Consult an Expert….

Worksheet

(R)DMAIC

Recognize

Define

Measure

Analyze

Improve

Control

Recognize

- The Secret Step BEFORE DMAIC

- First, Look at Data:
  - Quality Control
  - Audits
  - Customer Service Surveys
  - Financial Performance Indicators

Recognize

- Second, Make an Evaluation:
  - Nix if There Is a Known Solution
    - Implement!
  - Not Suitable if Problem Is a Management Issue
  - Make Sure the Problem Is Process Related

Recognize

- Third, Prioritize:
  - How Important Is It to Your Organization?
  - Is It Worthy of Resources that Could Be Otherwise Deployed?
  - Are There Other Projects that Need to Happen First?

Recognize

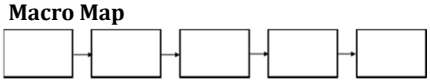
- Fourth, Define the Problem
  - Develop a High-Level Understanding of the Problem
  - Begin to Think About Scope
- Helpful Tools:
  - Project Definition Worksheet
  - Macro Map

Worksheet

Recognize

	1. Fill in the LEAN Project Definition Worksheet	
ep	Element	Actual
	What is the specific project idea?	
	Is project idea tied to business strategy? Yes / No Is the project important to achieving the strategy? Describe.	
	Who is the Customer of the output of the process? Will the project affect the Customer directly? Yes / No (CTXs)	
	Will this project create value for the Customer? Describe. Can the project be completed in less than 4 weeks? Yes / No Where does the project idea reside? (Process location) Has the process been documented? (existing Process flows and Maps; Current state, SIPOC-R) Yes / No	
	Is the project location, a distinct process within a business unit? Yes / No	
	Is there existing data on the problem that quantifies current performance results? How Much? What is the extent or magnitude of the problem? (as it relates to the Business issue) The Problem Statement: <what><who> <where><how much> (sentence format) describing the opportunity. Is there a Champion identified to remove barriers and provide resources? Who?	

Macro Map



DMAIC

Define

Measure

Analyze

Improve

Control

Define

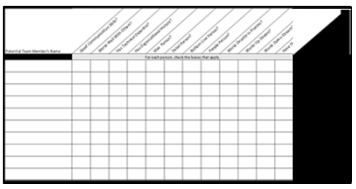
- Identify Team Members
  - Local Experts
  - People from Up and Down Stream
    - Helpful Tools:
      - Team Attribute Chart
      - Team Roster

Worksheet

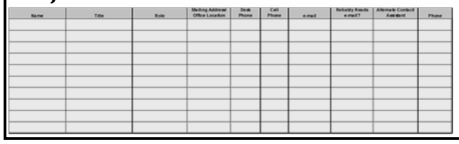
- Build Team Culture
  - Helpful Tool:
    - Ground Rules

Define

Team Attribute Worksheet



Project Roster



Define

Sample Ground Rules

- Meetings start and end on time.
- Stick to the agenda.
- No looping back.
- Be honest/speak your mind.
- Members will meet deliverables' deadlines.
- Treat each other with respect.
- Challenge ideas, not people.
- Be actively engaged.
- All voices will be heard.
- Silence equals agreement.
- Limit side conversations.
- Seek consensus.
- Define how decisions will be made.
- Cell phone used only for emergencies.

Define

- Review Project Definition Worksheet
- Verify Macro Map
- Refine the Project Statement
- Verify Baseline Correct
- Identify Additional Data that Are Needed
- Define Project Metrics

Types of Project Metrics

1: Six Sigma Project Metrics

Project Metric	Definition	Correlation to Primary Metric	Use in Improvement Project
Primary Metric	Defines the project goal: "improve (primary metric) from (baseline) to (target) by (date)"	N/A	Measure baseline and improvement level when the project ends
Secondary Metric	Captures, validates and tracks welcome side effects of the project	Strong (high relative predictive power, or R^2). By default, there is a cause-and-effect relationship between the primary and secondary metrics.	Measure baseline and impacts of project after improvement. Monitor during and after project if linked to financial metric.
Consequential Metric	Captures, validates and tracks non-welcome side effects of the project	Strong (high R^2). In the current design of the process, there is a cause-and-effect relationship between the primary and consequential metrics.	Collect data before, during and after the project to prove no collateral damage was caused by the project.
Financial Metric	Links progress in the primary and secondary metrics to financial advantage. Most often this metric is tailor-made for the specific project	Expected strong (high R^2).	Evaluate at project milestones (i.e., Define, Measure, Analyze and Control phases) and typically one year after the project ends.
Business Metric	Measures how an organization achieves one of its major goals.	Typically weak (low R^2).	Monitoring is optional and mainly needed for communication purposes

From: Be Consistent in Six Sigma Project Metric Selection; M. Ohler; isixsigma.com

Define

Worksheet

Smart AIM Statements

Aim Statements

What are we trying to accomplish?

- **S - Specific**
- **M - Measurable**
- **A – Actionable**
- **R – Relevant**
- **T – Time bound**

We will increase physician hand washing, prior to entering a patient's room on unit 7NW, from 60% to 90% by May 30th, 2014.

Define

- Create Project Timeline, Meeting Plan, and Communication Plan
- Helpful Tool:
  - Project Charter

Worksheet

Pro-Tip: Issues List

Define

Project Charter

Project Title:	Problem Statement:
Business Case:	Smart Aim:
Financial Benefit:	Project Scope: (start and stop process) (excludes/includes)
Business Y:	

Champion:	
Process Owner:	
Finance Rep:	
BB or GB:	
Team:	

	Start Date:	Target End Date:	Actual End Date:
Define			
Measure			
Analyze			
Improve			
Control			

DMAIC

Define

Measure

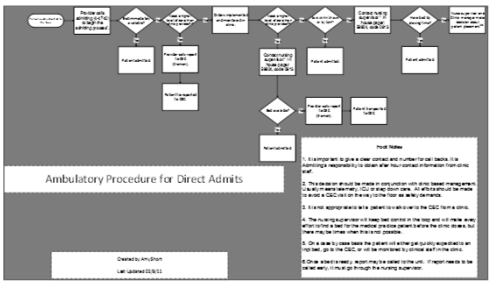
Analyze

Improve

Control

Measure

The Process Map



Why Process Map?

- You Can't Fix a Problem Until You Understand the Present State
  - … How It REALLY Works
  - …. Everyone Shares the Same Understanding
- Process Maps Reveal Where Improvement Is Needed Most
- Process Mapping Helps Keep a Project in Scope

How to Process Map

- Gather Your Team
- Define the End Points
- Brainstorm the Process Steps
- Put Process Steps in Proper Order

Activity

Pro-Tip: Use Sticky Notes

Process Map Errors

- Only Working with Those Distal to the Process
- Mapping the Improved Process First
- Mapping the Way a Process is "Supposed to Work"
- Incorrect Level of Abstraction
- Not Verifying Accuracy

DMAIC

Define

Measure

Analyze

Improve

Control

Analyze

- Walk the Process Map and Refine It
  - Spend Time with the People Who Do the Work
- Re-scope if Needed
- Capture Cycle Times
- Brainstorm Ideas for Improvement
  - Fishbone Diagrams
  - Affinity Diagrams

DMAIC

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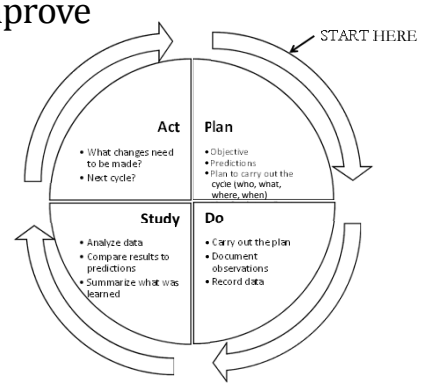

DMAIC

Define

Measure

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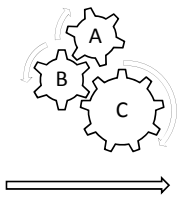
Now What?

C O N T R O L



- "Surface" Key Process and Outcome Measures
- Timely Data Entry = "Knowable" Individual and Group Performance
- Embed Use of Data into Management Repertoire

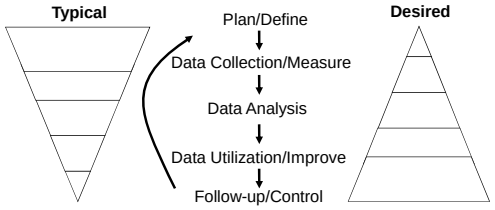
CONTROL

- This is the Most Difficult Phase in DMAIC
- Maintaining the Gains
- Safeguards: What Will Be Done to Keep This on Track?
- Responsibility Rests on the Process Owner (Role of KPI)

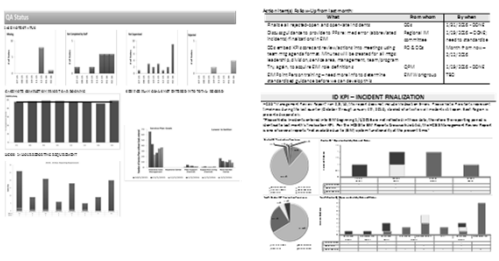
- <u>What Happens in this Phase?</u>
  - Pick the Right Control Method (Checklists, Monitoring, Reporting)
  - What is Acceptable Variance?
  - Document the Response Plan

Focus and Streamline

Changing the Approach is Key to Success



Scorecard



Active Management vs. Auditing

Factor	Active Management	Auditing
Time	Close to "Real Time"	6 Months, Yearly
Sample Size	Population Served	Sample
Focus	Current Time and Prospective	Retrospective
Action	Point-in-Time and Proactive	Reactive
Ownership	Operations & QPM	Compliance & Operations

Whoever Owns the Process Assumes the Responsibility

Worksheet

Putting It All Together

Questions?