Nebraska Hospital Association

RESIDENCY PROGRAM

TERRY STAFFORD PHD, EJD, RN, CPHQ, CHCQM, PCC

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Objectives

01

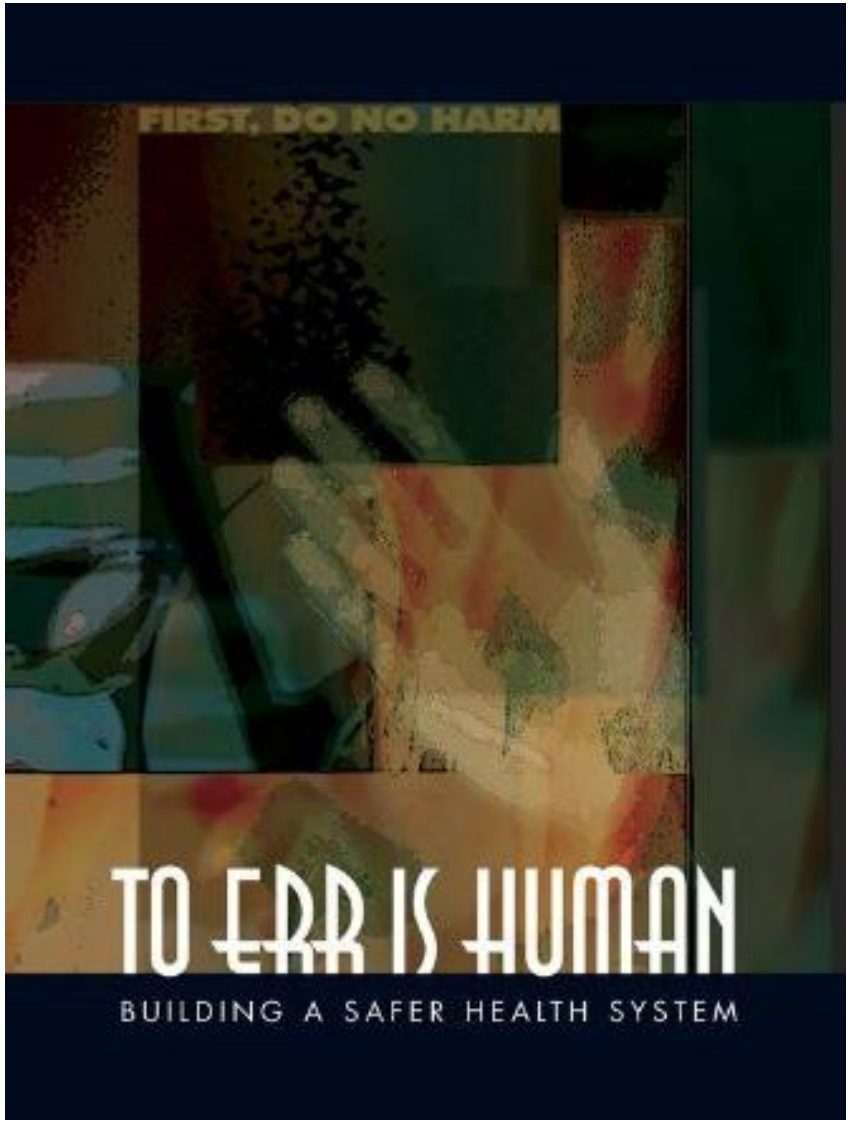
Synthesize and apply quality/safety improvement methods and tools in a clinical setting.

02

Promote sustained improvement of an identified goal through effective application of quality improvement tools and methods.

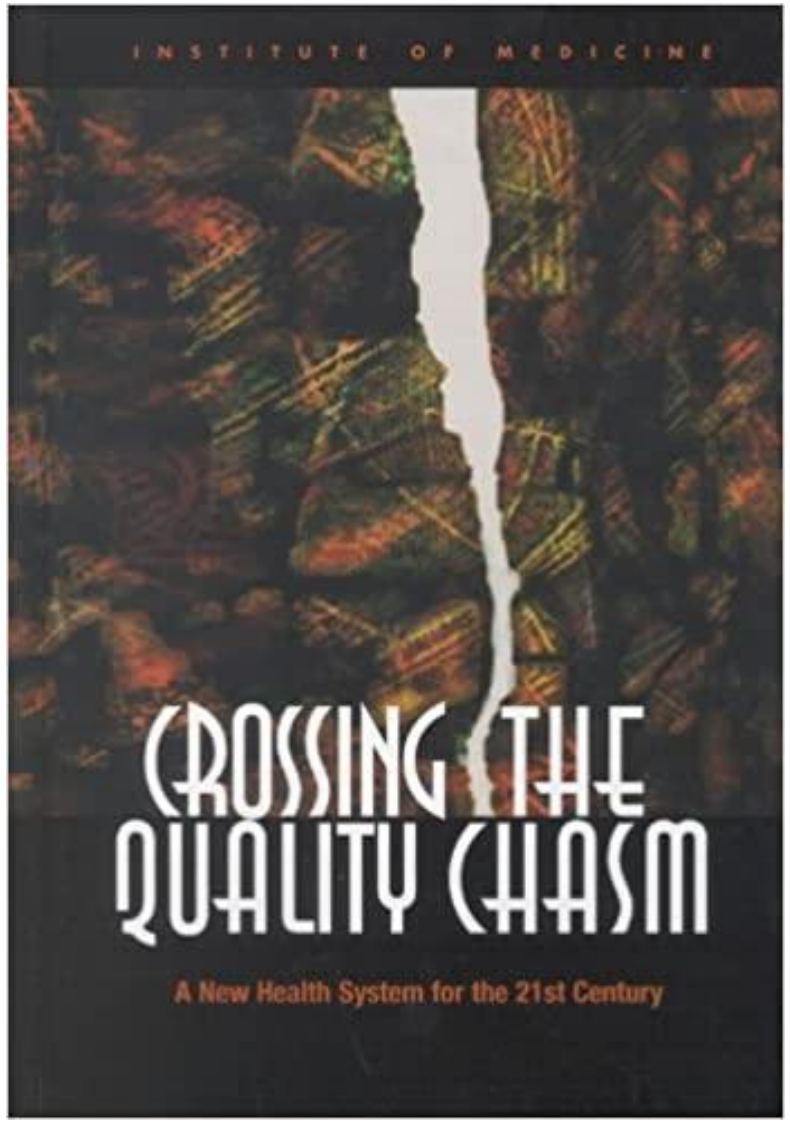
03

Integrate improvement science, complexity science, quality and safety tools and methodologies to develop systematic designs to sustain improvement in population healthcare delivery and outcomes.



To Err is Human

To Err Is Human: Building a Safer Health System is a landmark report issued in November 1999 by the U.S. Institute of Medicine that may have resulted in increased awareness of U.S. medical errors. The push for patient safety that followed its release continues.



Second in the Series

Made an urgent call for fundamental change to close the quality gap. This book recommends a sweeping redesign of the American health care system and provides overarching principles for specific direction for policymakers, health care leaders, clinicians, regulators, purchasers, and others. In this comprehensive volume the committee offers:

1. A set of performance expectations for the 21st century health care system.
2. A set of rules to guide patient-clinician relationships.
3. A suggested organizing framework to better align the incentives inherent in payment and accountability with improvements in quality.
4. Key steps to promote evidence-based practice and strengthen clinical information systems.

Transformation

Transforming Healthcare

Despite serious and widespread efforts to improve the quality of health care, many patients still suffer preventable harm every day. Hospitals find improvement difficult to sustain, and they suffer "project fatigue" because so many problems need attention. No hospitals or health systems have achieved consistent excellence throughout their institutions. High-reliability science is the study of organizations in industries like commercial aviation and nuclear power that operate under hazardous conditions while maintaining safety levels that are far better than those of health care. Adapting and applying the lessons of this science to health care offer the promise of enabling hospitals to reach levels of quality and safety that are comparable to those of the best high-reliability organizations.

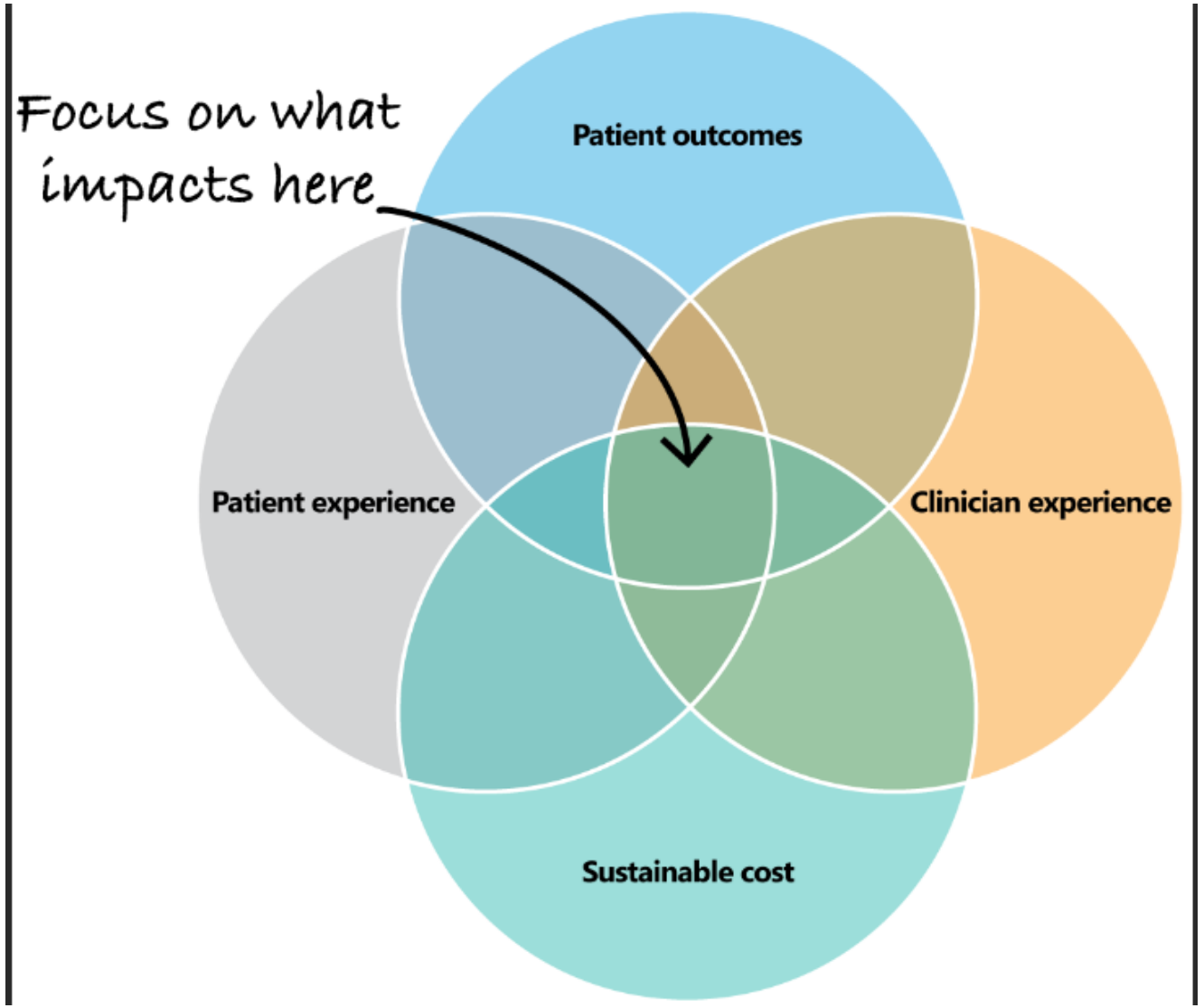
High-Reliability Health Care: Getting There from Here MARK R. CHASSIN and JEROD M. LOEB

The Joint Commission 2013

The Why

Inpatient Quality Reporting Program. CMS proposed several changes to the Inpatient Quality Reporting Program, which reduces payment to hospitals that fail to meet program requirements. CMS is seeking to add five new measures, including COVID-19 vaccination rates among healthcare personnel, a metric targeting maternal morbidity and two medication-related adverse event electronic clinical quality measures. CMS also wants to remove the exclusive breast milk feeding measure, among other changes.

https://www.beckershospitalreview.com/finance/cms-proposed-inpatient-payment-rule-for-2022-8-things-to-know.html?origin=RCME&utm_source=RCME&utm_medium=email&utm_content=newsletter&oly_enc_id=2226C7659690D7



The Why – the Quadruple Aim

Improve patient outcomes

Improve patient experience

Lower health care costs

Higher healthcare workforce satisfaction

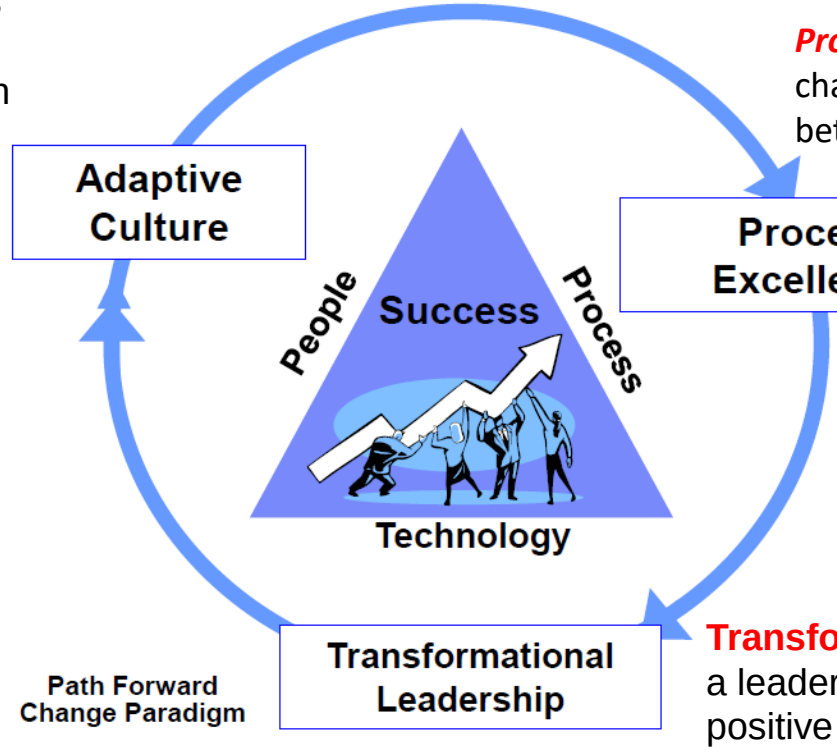
Triple aim created by the Institute of Healthcare Improvement (IHI) 2007

We haven't finished with the triple aim – the triple aim is patient centered. We can't lose focus and we must measure what matters. (IHI)

Adaptive Culture is a way of operating where change is expected Adapting to change is smooth, routine and seamless. Change, growth, and innovation are a "given" part of the business environment.

People can quickly and effectively make good decisions, and a ***team*** (group, organization, etc.) can coordinate efficiently, and ultimately reach the targeted goal together

The Path Forward Approach to Business Transformation



Process - Innovation, change for the better, strategies

Purpose - *Business Relevance*: Refers to the characteristics of a particular change – aka, the burning platform and the vision; Balanced scorecard decision making, ***COMPELLING REASONS FOR CHANGE***

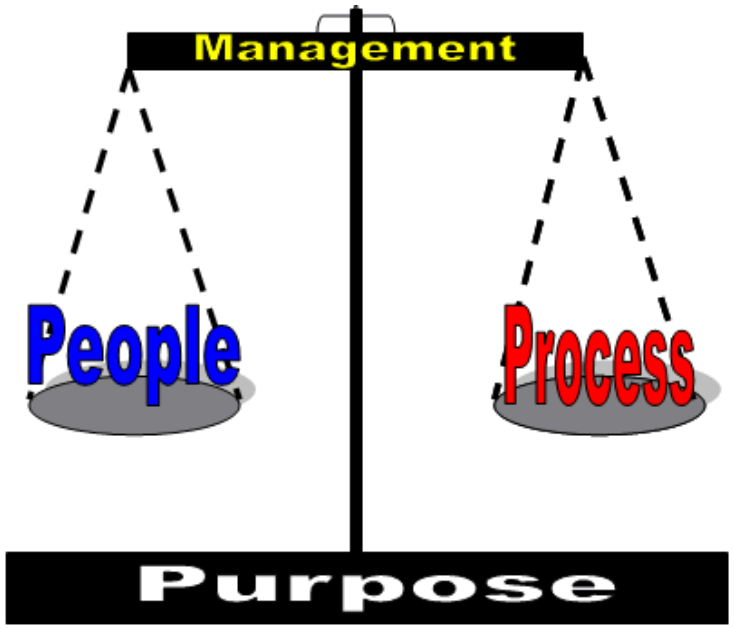
Business Performance

Building Organizational Capabilities for Business Transformation

Transformational leadership is an approach in which a leader inspires and motivates team members to create positive changes within an organization.

Innovation and continuous improvement enabled through process excellence and high performing organization culture

https://www.iise.org



It’s a balancing act!

How the pandemic will affect hospitals for years to come

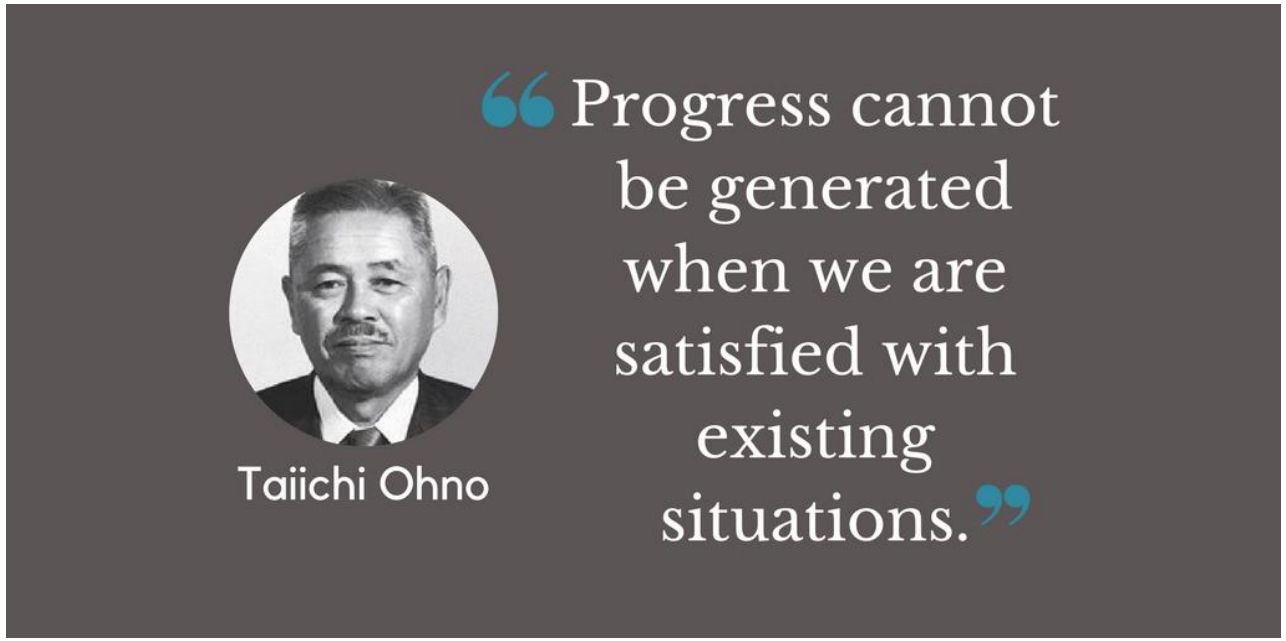
- Quality programs and measures not designed to contend with pandemics and public health emergencies of the magnitude seen in 2020 and 2021
- Quality programs not designed to manage the degree of aberration encountered in underlying data reporting
- The pandemic disrupted the health care system in ways that have affected the patient, provider, hospital level decision making, behaviors and performance.
- Medicare's payment system adjusts hospital payments based on quality of care delivered, using metrics from the Value Based Purchasing (VBP) Program, Hospital Readmission Reduction Program (HRRP) and the Hospital Acquired Condition (HAC) Program. With the impact COVID had on patient care, using 2020 data will impact hospital quality reporting.
- Centers for Medicare and Medicaid Services (CMS) faces challenges in adjustment, modifications and exceptions to ensure proper use of data in these payment programs.

- Salzberg, Claudia A., Kahn Charles COVID – 19 Will Upend Hospital Reporting and Value Based Programs for Years to Come. Online: https://www.healthaffairs.org/do/10.1377/forefront.2021520.815024/

Tools and Methods

LEAN Methodology - The Developer

Taiichi Ohno was a Japanese Industrial engineer and businessman. He is considered the father of the Toyota Production System, which inspired Lean Manufacturing in the U.S. He devised the seven wastes as part of this system.



What is LEAN Thinking?

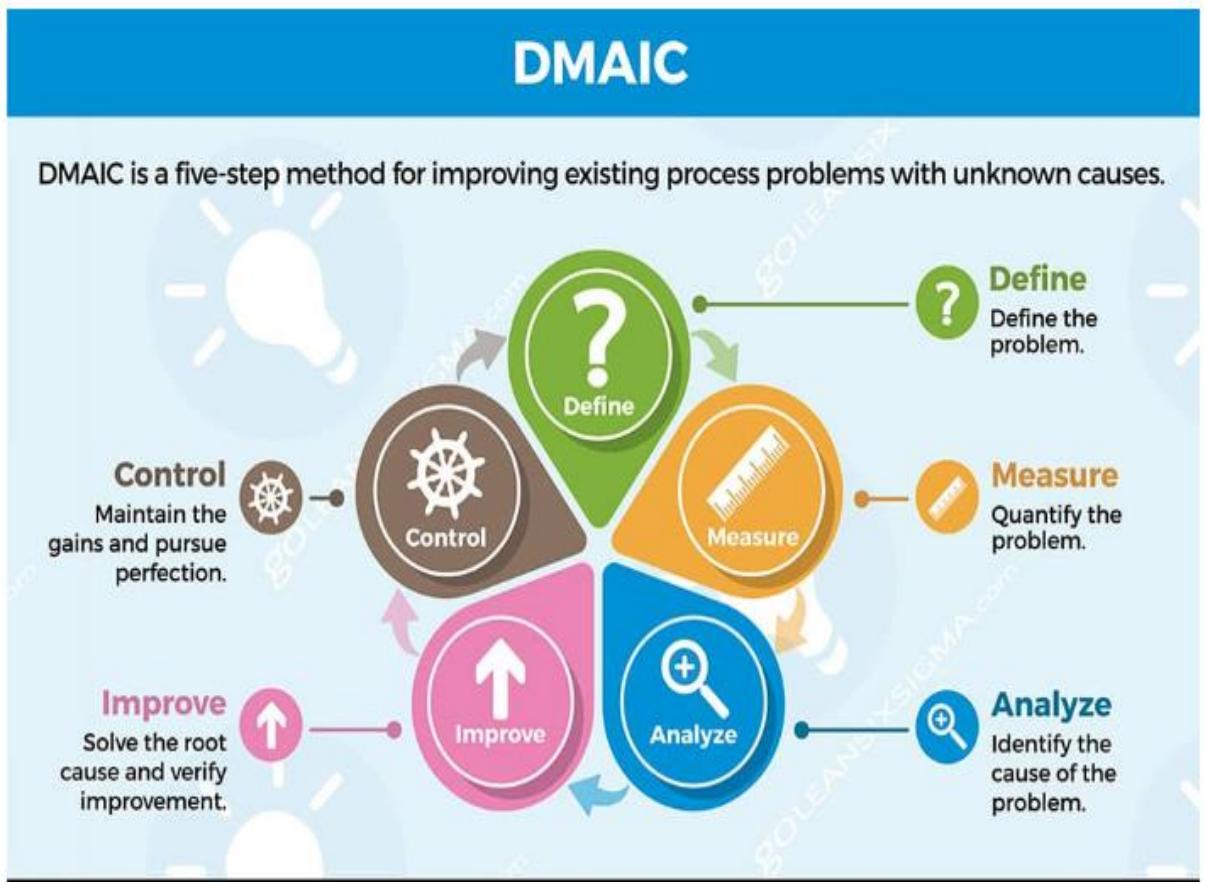
At its core, Lean is a business methodology that promotes the flow of value to the customer through two guiding tenets: continuous improvement and respect for people.

Roots in Manufacturing

Lean methodology originated with the Toyota Production System, or TPS, which revolutionized the manufacture of physical goods in the 1950s, ‘60s, and beyond. Lean maintains its hold in manufacturing, but has also found new applications in knowledge work, helping businesses in all industries eliminate waste, improve processes, and boost innovation.

Lean thinking is a transformational framework that aims to provide a new way to think about how to organize human activities to deliver more benefits to society and value to individuals while eliminating waste.

Is an integral part of a Six Sigma initiative, but in general can be implemented as a standalone quality improvement procedure or as part of other process improvement initiatives such as lean.



Six Sigma

Six Sigma is a process improvement methodology that is a disciplined, data-driven approach for eliminating defects and waste from a process. To achieve Six Sigma, a process must not produce more than 3.4 defects per million opportunities. A defect is anything that falls outside of a customer's specification.

Six Sigma uses a method called DIMAC which stands for Define, Measure, Analyze, Improve, and Control. Each stage of this process is designed to help you identify, measure and improve existing processes.

Define – What do Customer's Value?

- What is the problem?
- Why is it important?
- Who is the customer?
- What is critical to quality?
- What is the goal?
- Who are the stakeholders?
- Who are team members?
- Do you anticipate resistance?
- What does the current state look like?
- What are you going to improve, by how much and by when (timeline)?

Tools

Project Charter

15 Words – what is most important?

5 Whys (5 W's)

Voice of the customer

SMART Goals (specific, measurable, achievable, relevant, timebound)

ARMI Analysis: Approval, R = Resource, M = Member, I = Interested Party

Stakeholder Analysis

Barriers to Success Analysis

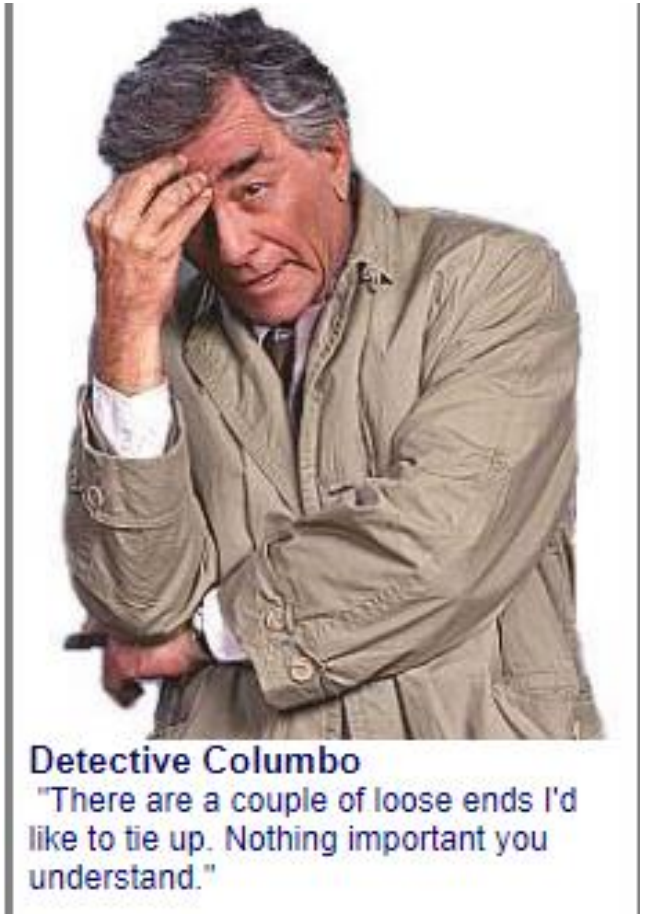
Process mapping – define what you are changing

Value Stream Mapping

WWW

Columbo Approach

Detective Columbo always scratched his head and asked a lot of questions. A good mapping facilitator does the same. Good facilitators often suspect where the critical issues lie and direct questions accordingly.



Project Examples

- Reducing Falls
- Patient Flow (ED, Clinic, Surgery, Procedures)
- Patient Experience
- Readmissions
- Reducing infections
- Reducing length of stay
- Admission and discharge process
- Care transitions
- Reduce billing cycle time
- Reduce purchasing costs and par levels
- Achieving National Patient Safety Goals

What are the projects in your facility?

Project Summary

- **Importance of this Opportunity to You:** Having a child undergo surgery is a stressful event for a family. Providing as positive an experience as possible for the family surrounding the time of the procedure is important to me. Providing the family improved methods of education regarding the procedure and the postoperative recovery will arm families with information. Giving small amounts of information over time will improve retention.

- **AIM Statement:** By December 31, 2019, the Division of Pediatric Otolaryngology at Nemours will provide text message-based messages postoperatively to families whose children have undergone two commonly performed surgeries, adenotonsillectomy and tympanostomy tube insertion. Families will understand and retain a greater amount of information regarding their child's post-operative course. Frequency of postoperative calls and visits to the emergency department regarding information provided in the handout will decrease by 20% and family satisfaction will improve.

Rationale for Choosing this Project: As a busy pediatric otolaryngology practice, thousands of the surgeries are performed in our division each year. Improving retention of information will help improve the care that parents are able to provide their children at home. In addition, I hypothesize that 1. Improved understanding will translate into a more efficient outpatient practice, by decreasing the volume of postoperative parent calls fielded by the otolaryngology staff and so allowing more time to be dedicated to direct patient care. 2. The number of visits to the ED within 30 days of the procedure will decrease, which has benefits to both families and the health care system. 3. Families' satisfaction regarding their child's surgical experience will increase.

Project Summary

- **Project Title:** Combating alarm fatigue by reducing the number of pulse oximeter alarms in the ICU.

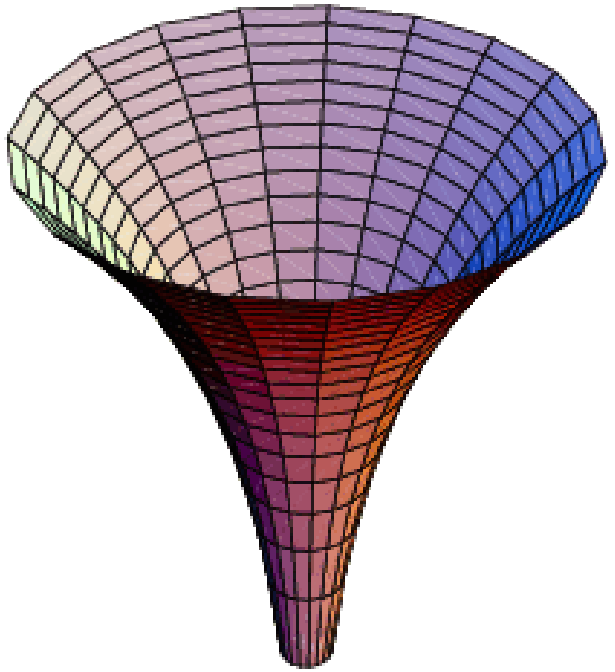
- **AIM Statement:** AIM to combat alarm fatigue in the nursing staff, this project will decrease the number of a frequent alarm, the pulse oximeter alarms, that sound daily in a medical ICU by 35% from baseline by October 1, 2019

- **Importance of this Opportunity to You:**
  - Alarm management is a national patient safety goal
  - Too many alarms sounding causes alarm fatigue.
  - Alarm fatigue is a risk to patient safety
  - Alarm fatigue is a contributes to staff burnout

- **Rationale for Choosing this Project:**
  - Recent SCORE survey revealed a high level of burnout in the medical ICU.
  - I am the support person for the national patient safety goal of alarm management.
  - The alarm management committee needs an actionable goal for FY 2020
  - A patient safety issue for patients and families.

Summary - Define

- Drill down - keep questioning until you have the problem, issue or project clearly defined, measurable and relevant and workable.
- Don’t boil the ocean
- Team consensus for understanding
- Use tools to define the problem



Measure – Identify all steps in the process

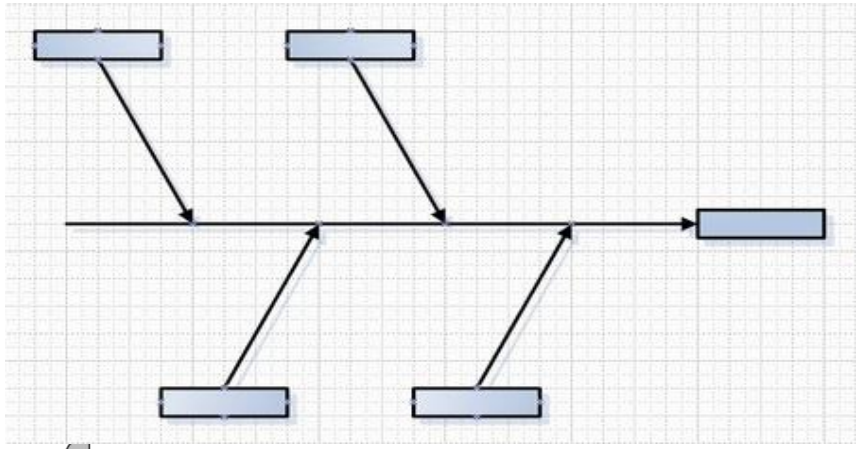
- What steps have the biggest impact on the customer?
- What could go wrong within the key steps?
- What are probable causes?
- What are you going to measure?
- How reliable and accurate are your data?
- How can a new process meet the customer's demand?

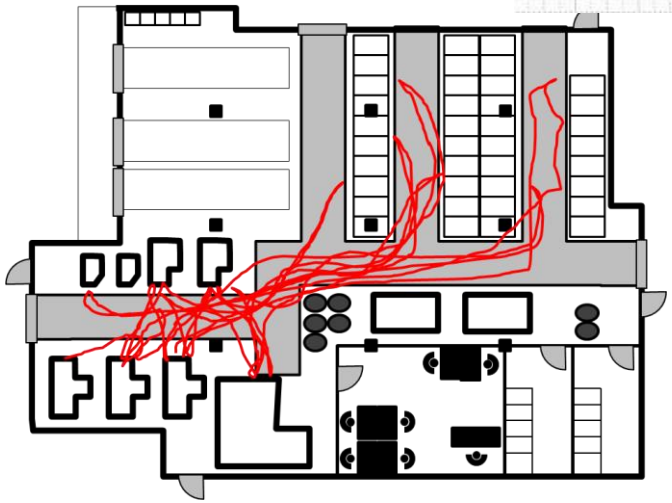
Tools

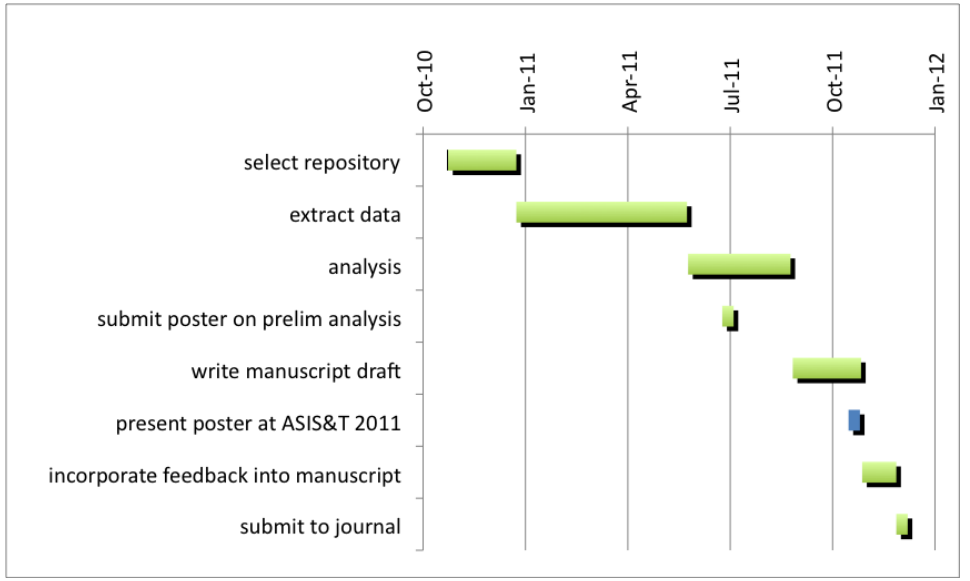
Cause and Effect Diagram
RCA
Data Collection Plan
Spaghetti Diagram
Value Stream Map
Failure Mode Effects Analysis (FMEA)

Tools

Examples





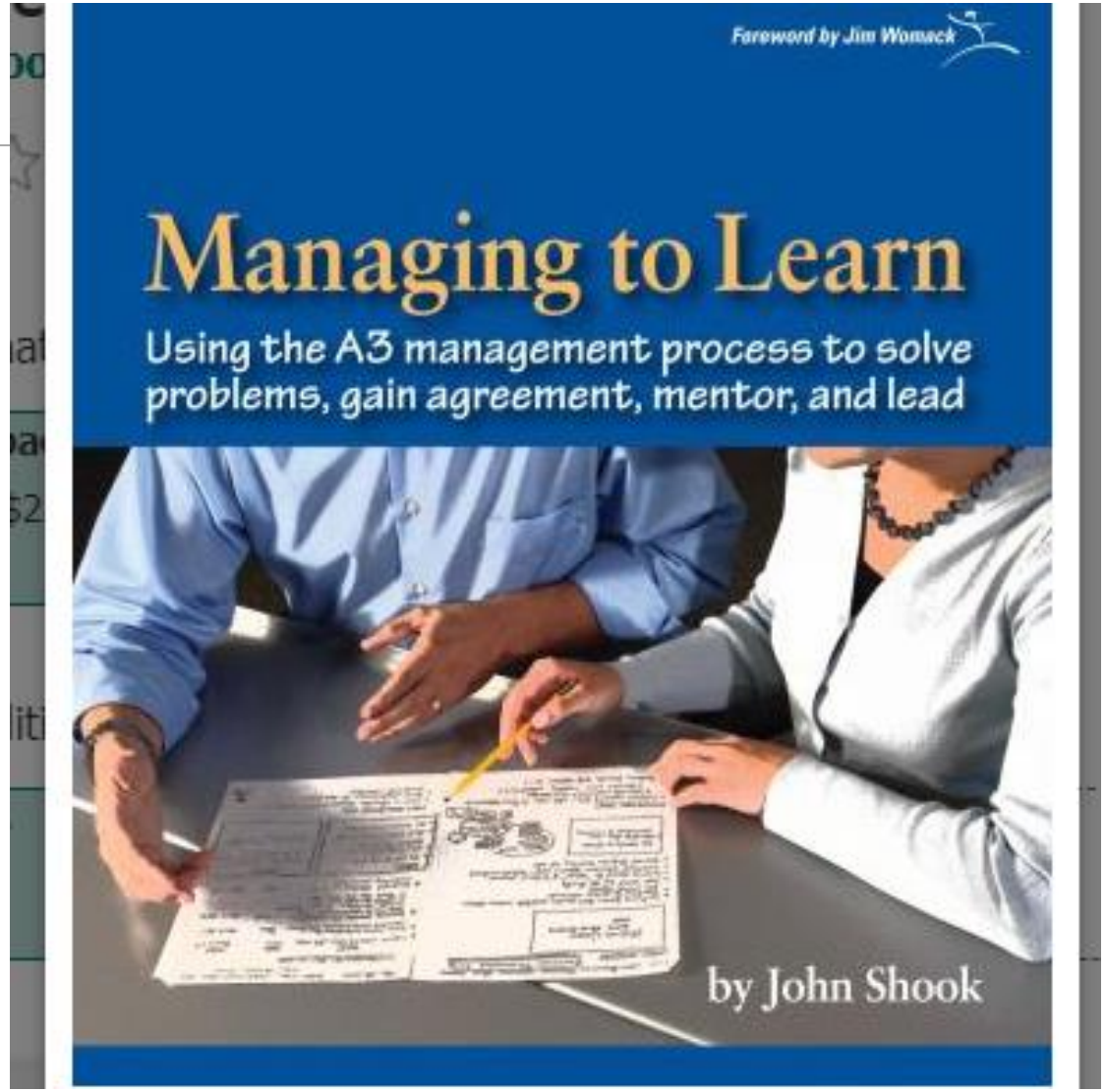


Value Stream Mapping

"Whenever there is a product (or service) for a customer

There is a value stream. The challenge lies in seeing it!.... John Shook

A Value Stream Map (VSM) is a graphic map of all steps that occur from the specific request for a product (or service) to the actual delivery. A VSM provides a simple means to see the request.



VSM Attributes

A high level view

Recognizes activities as value added or nonvalue added

Demonstrates workflow as of NOW

Plots steps in request as the occur *right to left*

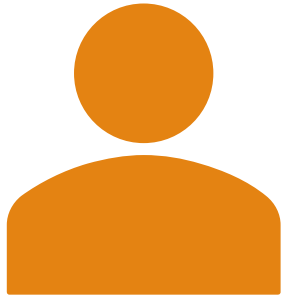
Plots steps in the process *left to right*

Identifies areas of delay, wastes and inconsistences

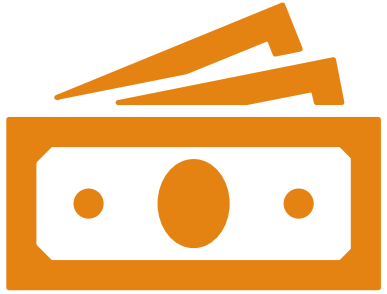
Forms the basis for future state development

Maps the flow of patient, information and materials

Value Added



Product or service transformed into a state required by the customer



If asked the customer is willing to pay for the product or service

Non-Value Added

Needed	True Non-Value Added
Activities causing no value or created value but cannot be eliminated	Activities consume resources but create no value in the eyes of the customer
• Required/Regulatory, customer mandate	Pure Waste
• Necessary due to non-robustness of the process	

The VSM Perspective

- Process Mapping - starts with a flow chart, and typically adds detail such as inputs and outputs of each process step (used in Six Sigma).
- Value Stream Mapping - Starts with a flow chart and adds time for each process step as well as the delay between process steps. Shows where the process doesn't flow because of waste and delays.
- Walk the Gemba to get information to create a VSM – Observe people doing the job.
- Highlights all types of waste (waiting, transporting, motion, excess processing, defects, overproduction)
- Eliminate the waste in the future state VSM add design and make the process standard work
- Customer point of view and high level

Uses of a VSM

UNDERSTAND PROCESS STEPS

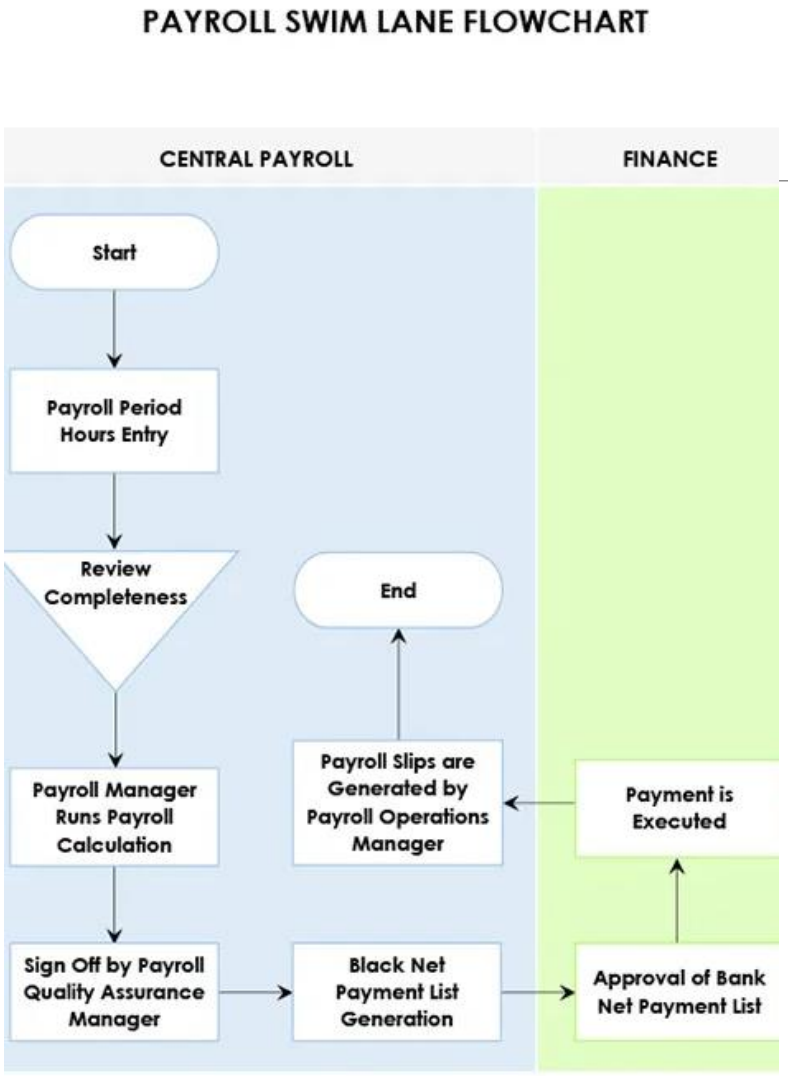
VISUALIZE LOCATION OF PROBLEMS

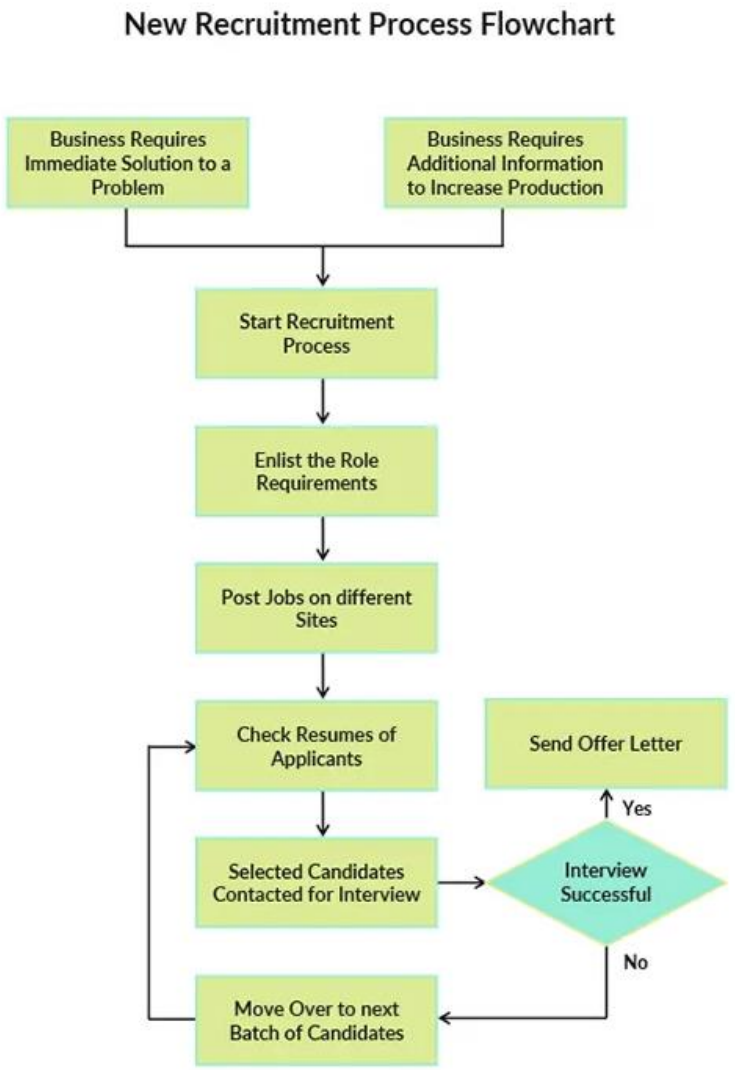
LAUNCH PROBLEM SOLVING EFFORTS

EDUCATE STAFF ON THE PROCESS

DESCRIBE THE PROCESS TO OTHERS (LEADERS)

SPRINGBOARD FOR FUTURE STATE PROCESSES





Typical Flow Charts

(shows step by step)

Typical Flow (Process) Chart ordering Ice Cream – This is NOT a VSM

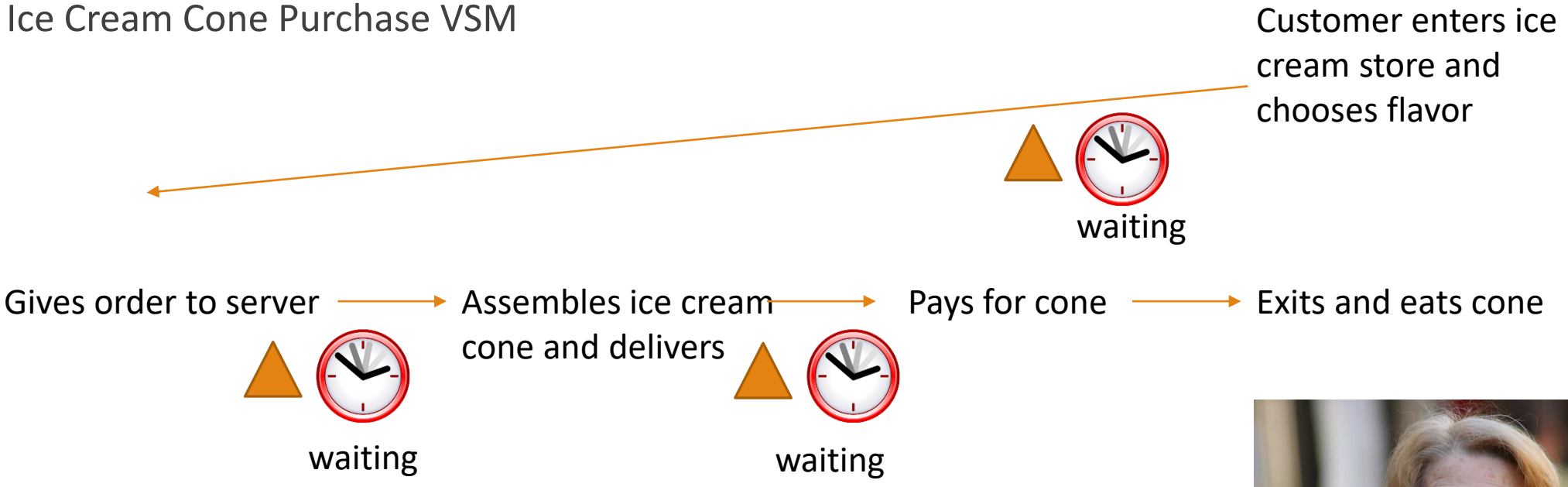
The Ice Cream Cone Assembly Process

Get Customer order → Find Flavor → Find and rinse scoop → Get empty cone → Scoop Ice Cream into Cone → Hand Customer Ice Cream Cone

Viewed from how the work is done

Value Stream Map

Ice Cream Cone Purchase VSM



Viewed from what the customer expects, and different from a conventional flow chart because the VSM indicates waste.

= delay

What flows through a Value Stream

In Manufacturing: Materials

In Services: External needs of the customer and information

In Healthcare: Patients and family members, also materials (objects) and information (handoffs)

Questions that Create a VSM

Is what we think happens really happening?

How long does each step take

Do we have all the details of the process?

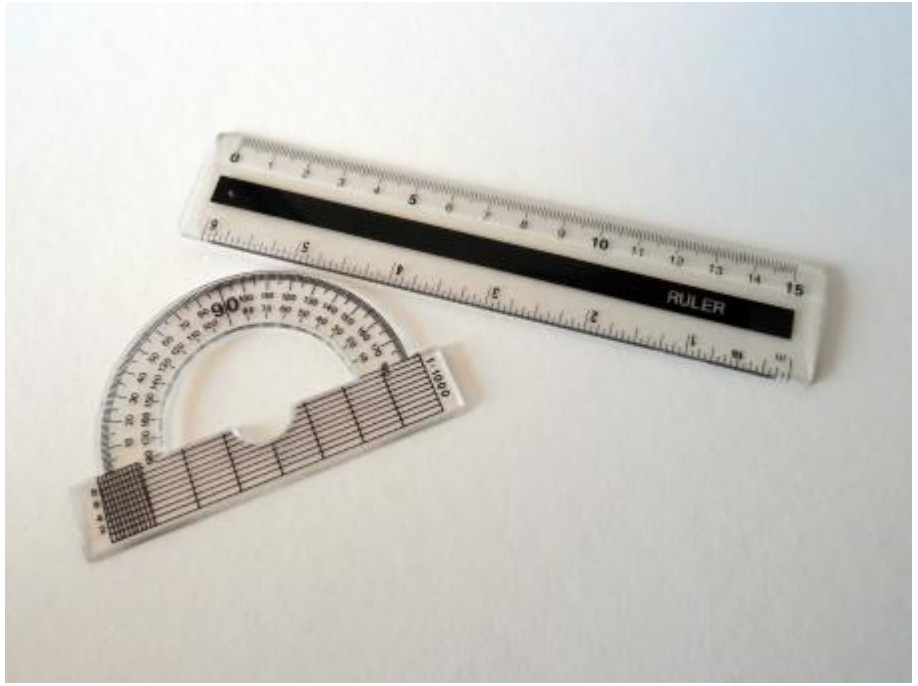
Do we know what triggers the start and when the process finishes (cycle time)?

What resources are necessary in each step?

What opportunities for improvement exist?

Summary - Measure

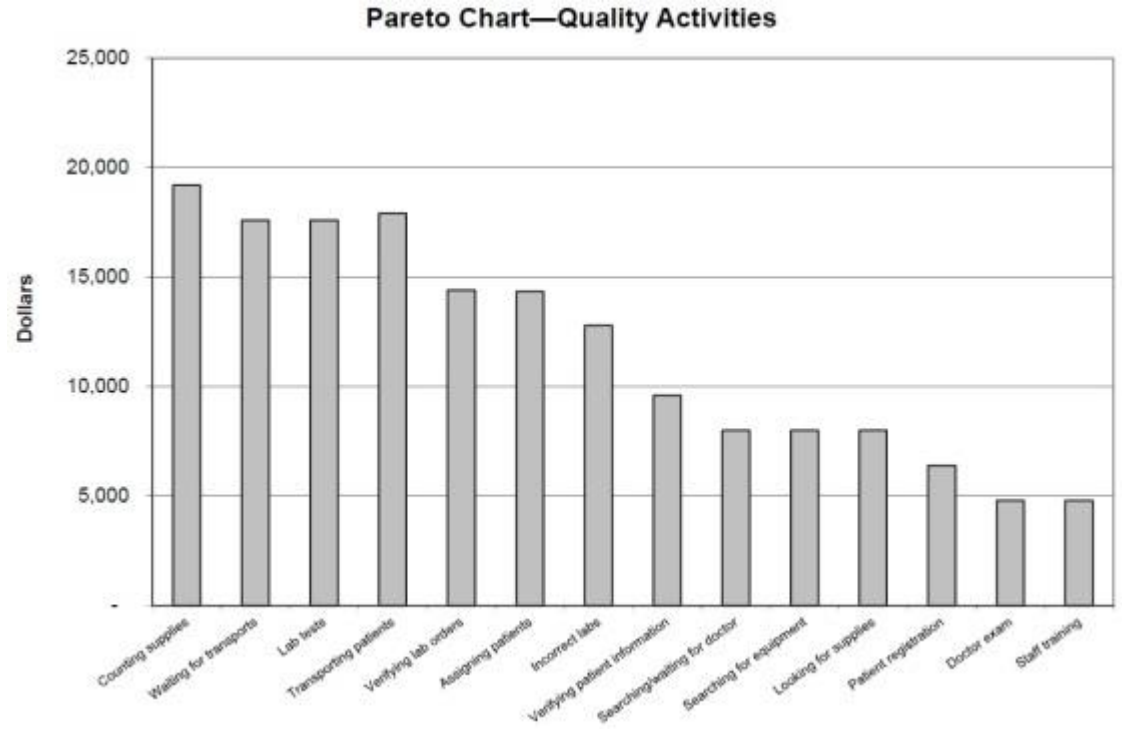
- Know your process – observe
- Flow the process to identify value added and nonvalue added steps (from the customer's perspective
- Identify the areas of waste, delay and measure.
- Identify and prioritize the steps in the process that require improvement



Analyze – Validate the root cause, waste and defects

What does your data show (statistical or practical significance)?

How are you going to communicate your results to stakeholders



Tools

Pareto charts

Histograms

Dashboard

Communication Plan

Analyze

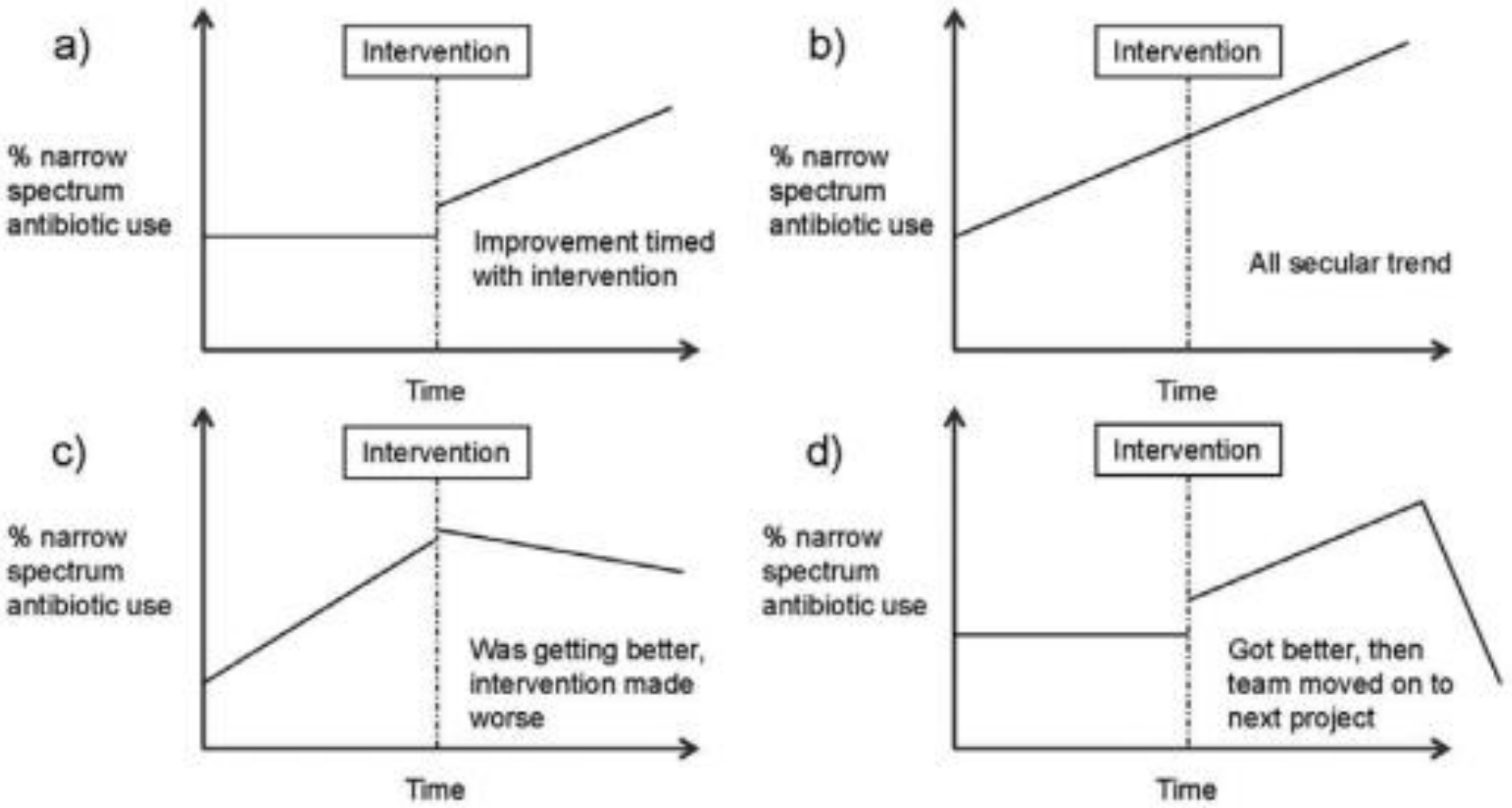
- Goal is to get as much information and measurements on the current process as possible
- Identify and spot problem areas
- Identify defects
- Use statistical tools, correlations, comparisons, etc. to report the data

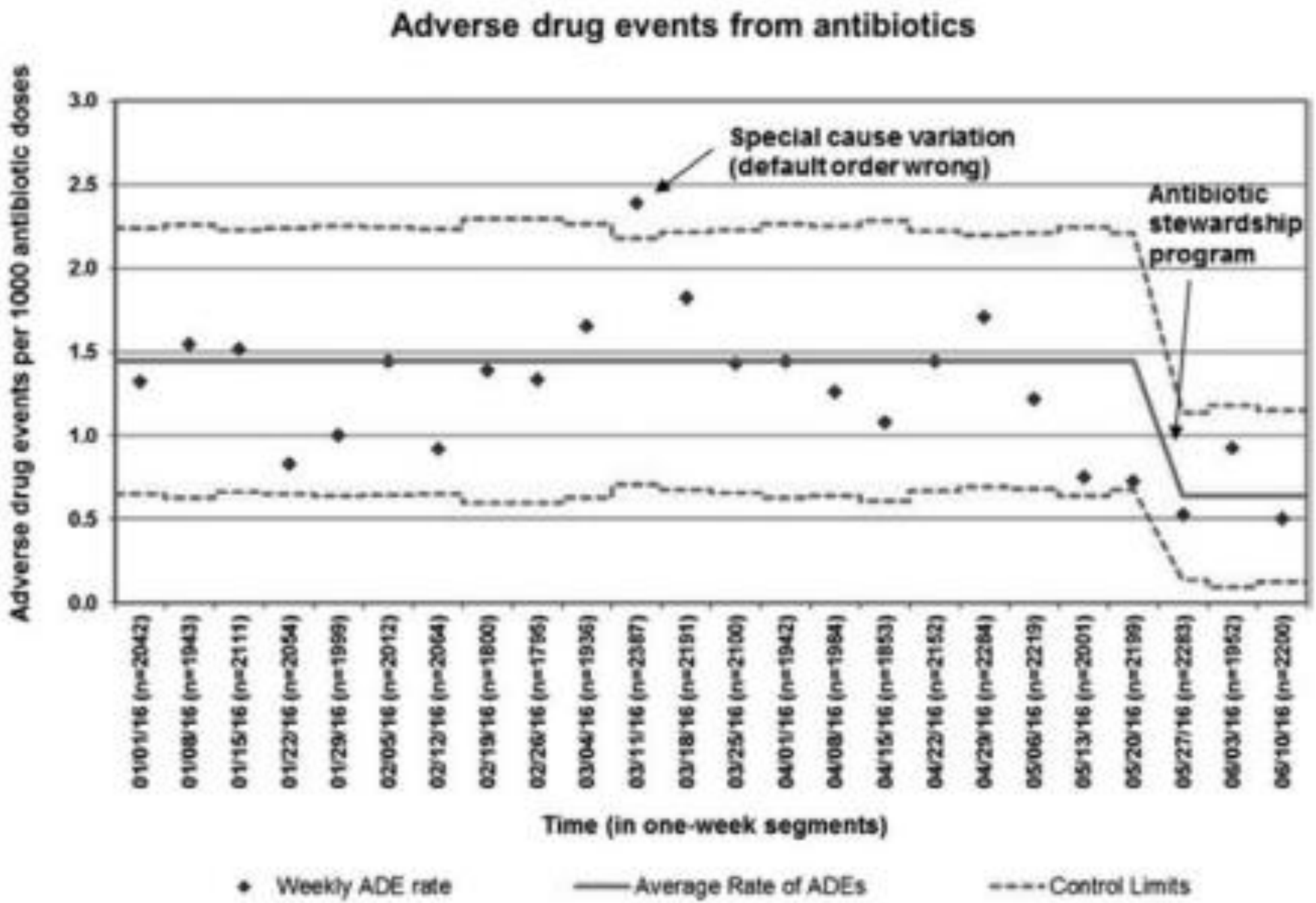
Run Charts and Control Charts

Run charts and other statistical process control (SPC) charts present data over time and enable the improvement team to identify quickly when variation that is unlikely due to chance (special-cause variation) has occurred. Run charts are simple displays of data over time with a median line that indicates the central tendency.

SPC charts (also called Shewhart charts) were developed by Walter Shewhart, a young engineer, physicist, and statistician working at Western Electric Company in the early 20th century

Control charts have advantages over run charts in that they define expected variation in a process. The first goal of many QI interventions is to reduce this variation. The centerline in SPC charts is most commonly the mean of the data points (versus a median used in run charts). The upper and lower control limits (usually shown visually as dotted lines) are defined based on the distribution of the data with each approximately 3 standard deviations, or σ, above and below the centerline.


a)
Intervention
% narrow spectrum antibiotic use
Improvement timed with intervention
Time
b)
Intervention
% narrow spectrum antibiotic use
All secular trend
Time
c)
Intervention
% narrow spectrum antibiotic use
Was getting better, intervention made worse
Time
d)
Intervention
% narrow spectrum antibiotic use
Got better, then team moved on to next project
Time


Adverse drug events from antibiotics
Adverse drug events per 1000 antibiotic doses
3.0
2.5
2.0
1.5
1.0
0.5
0.0
Special cause variation
(default order wrong)
Antibiotic
stewardship
program
01/01/16 (n=2042)
01/08/16 (n=1943)
01/15/16 (n=2111)
01/22/16 (n=2054)
01/29/16 (n=1999)
02/05/16 (n=2012)
02/12/16 (n=2064)
02/19/16 (n=1800)
02/26/16 (n=1795)
03/04/16 (n=1936)
03/11/16 (n=2387)
03/18/16 (n=2191)
03/25/16 (n=2100)
04/01/16 (n=1942)
04/08/16 (n=1984)
04/15/16 (n=1853)
04/22/16 (n=2152)
04/29/16 (n=2284)
05/06/16 (n=2219)
05/13/16 (n=2001)
05/20/16 (n=2199)
05/27/16 (n=2283)
06/03/16 (n=1952)
06/10/16 (n=2200)
Time (in one-week segments)
Weekly ADE rate
Average Rate of ADEs
Control Limits

Summary - Analyze

- Use these data to make a business case for change, set realistic and achievable goals and drive improvements.
- Identify interventions and changes in the process and display with the data
- Specify measurements and timeframes
- Keep data simple
- Avoid red and green
- Make sure YOU understand the data

Patrick W. Brady, Michael J. Tchou, Lilliam Ambroggio, Amanda C. Schondelmeyer, and Erin E. Shaughnessy; Displaying and Analyzing Quality Improvement Data; Division of Hospital Medicine, Department of Pediatrics, James M. Anderson Center for Health Systems Excellence, Department of Pediatrics, and Division of Biostatistics and Epidemiology, Department of Pediatrics, Cincinnati Children's Hospital Medical Center, Ohio. Journal of the Pediatric Infectious Diseases Society, 2017.

Improve – stabilize the process, reduce or eliminate waste, variation and defects

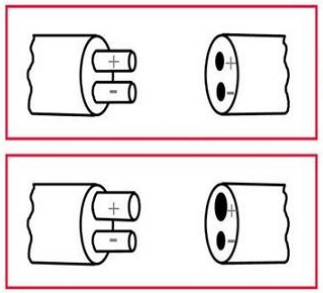
- What are possible solutions targeted to improve the validated root causes?
- What is the best solution?
- How are you going to test the solution?
- Where should you focus change management efforts?

Tools

Brainstorming
Facilitated meetings
Mistake proofing
Plan Do Study Act (PDSA) cycles

Visual Controls for Mistake Proofing

Example of Mistake proofing



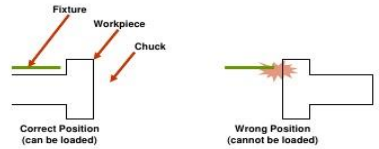
Without mistake proofing, we can have a mistake with irreversible damages

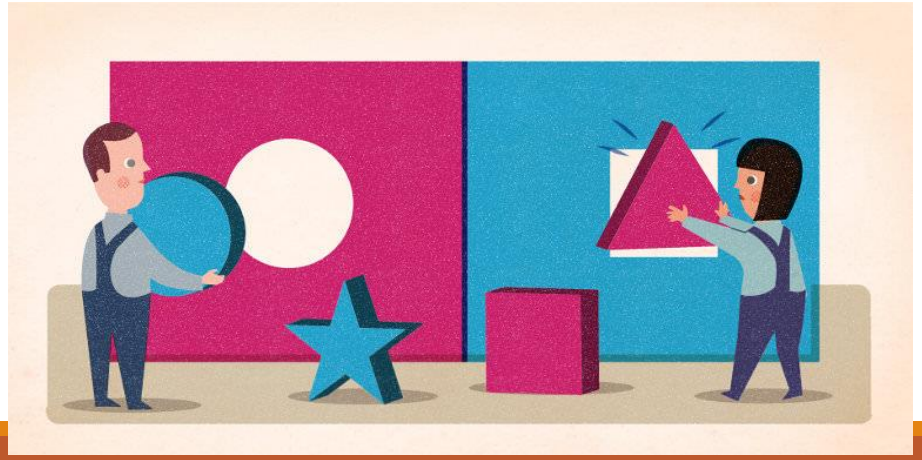
With mistake proofing, error is not possible

Mistake-Proofing Examples

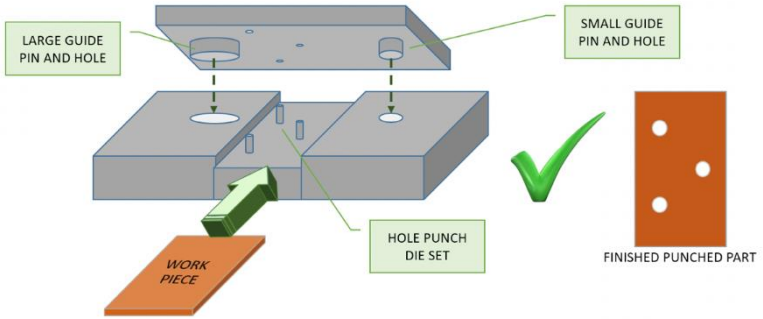
- Redesign the process to eliminate or reduce the possibility of a particular failure mode
- A way to avoid mistakes
- Make the error impossible
- If you cannot prevent the error, modify the process to make the error obvious (detection)

Mistake-Proofing Illustrated





MODIFICATION TO DIE SET, INTRODUCING POKA-YOKE (ERROR PROOFING)



With this small modification to the die set it is impossible to fit the top die onto the bottom die incorrectly. The large diameter guide pin can not fit into the small guide hole, therefore the part will always be punched correctly and the die set will not get damaged as a result of the top die being placed the wrong way round.

Other Types of Mistake Proofing Strategies

Barcoding

Arm Bands

Sensors

Checklists

Templates

Electronic order entry systems

Medication scanners

Plan–Do–Study–Act (PDSA) “Tests of Change”

A systematic approach to learning about a process that leads to continuous quality improvement.

Dr. Edwards Deming popularized the PDSA approach in 1950”s

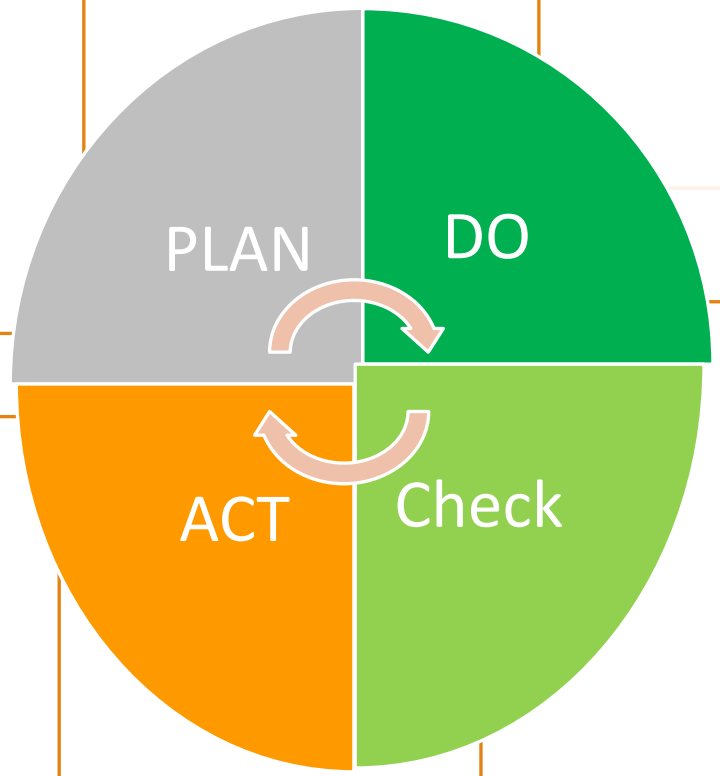
Plan – Define the project and risk factors and what will happen (intervention)

Do - collect data and carry out the planned strategy

Study – analyze outcomes; what part of the strategy worked or failed to meet the desire goal

Act – Identify and adopt new strategies, tweak the current strategies, repeat the

PDCA – Follow up after surgery



- Decrease the number of postoperative calls to the office
- Decrease the number of postoperative visits to the emergency department
- Improve family satisfaction regarding the perioperative/postoperative experience

- Improve understanding and retention of information related to the child's surgery and expected postoperative course
- How? By providing a new method for the distribution of educational information to families, via text message
- Texts will contain small amounts of information in each message and will be distributed over several days, at times when symptoms are most likely to be occurring

- The system has not yet been implemented; it is anticipated that an internal pilot/test phase will start over the next month.

baseline and post-intervention data will be collected regarding the number of phone calls to office and the number of visits to the ED that could have been avoided if a family had a better understanding of the expected/normal postoperative symptoms

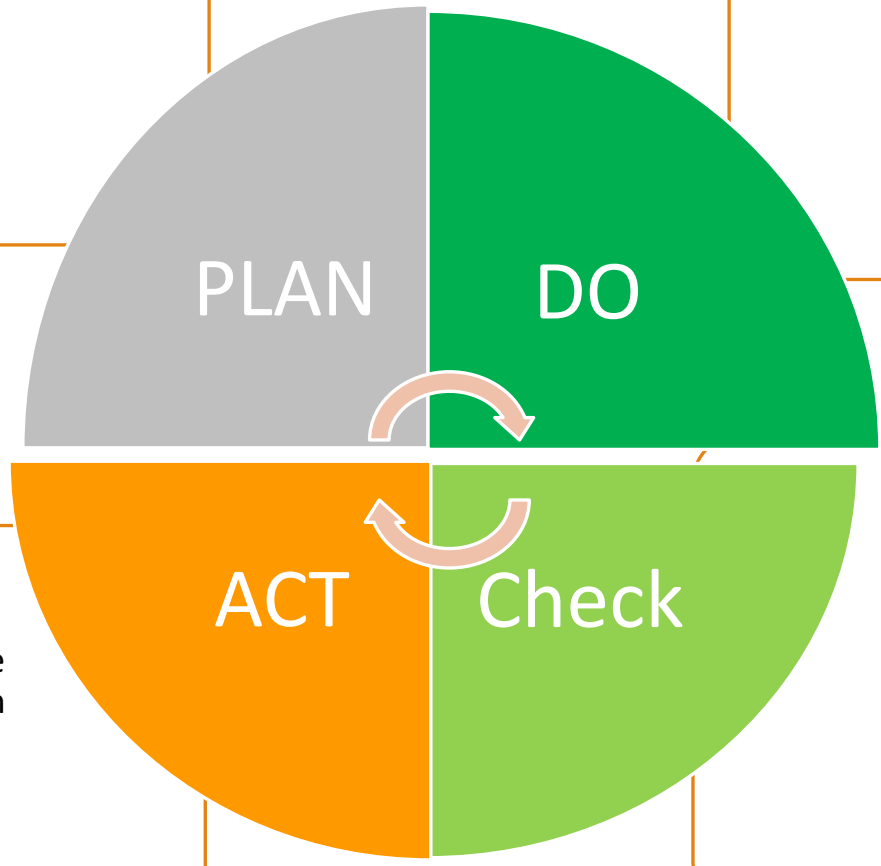
A run chart will then be constructed for each of these measures

The last text message will also have a link to a patient survey, regarding the utility of the text messages, thus measuring satisfaction with the new system of delivery

If an improvement is not seen in the two primary outcome measures, then the types of calls and/or visits to the ED will be examined, to see if there is a better way or better time to convey the related information to families

PDCA –Alarm Fatigue

- Goal for this project: Decrease the number of pulse oximeter alarms that sound daily in a medical ICU by 35% by October 1, 2019



- Decrease the default parameter for pulse oximeter from 90% to 88%
- Educate nurses on the importance of individualizing parameters for each patient.

- Currently only baseline data is available. When new data is collected, I will be to fill out this section.

- Success will be measured by collecting data on number of alarms that sound
- Pulse check burnout survey for staff

When completing a PDSA consider ……..

1) What are you trying to accomplish?
2) How will you know when the change is an improvement?
3) What changes will result in the improvement?
4) How many are needed to assure the right process outcome
4) What did you /your team learn – key takeaways

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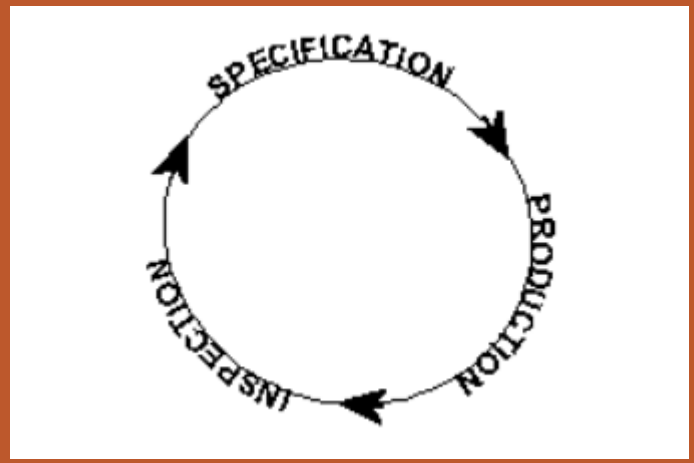
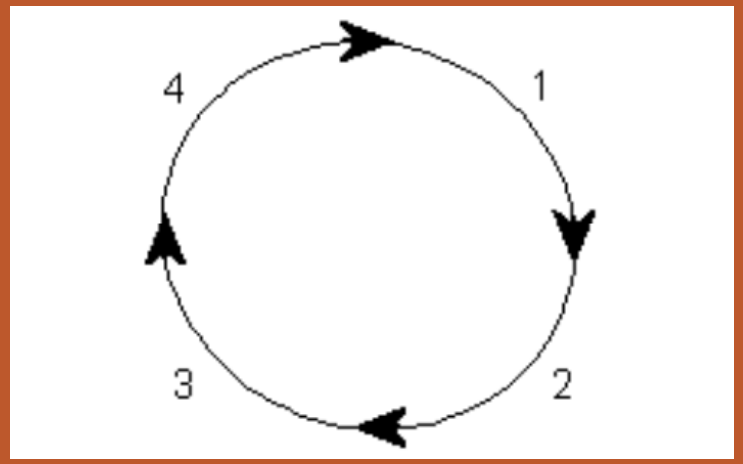


Dr. Walter Shewhart Wheel



Dr. W. Edwards Deming Wheel

Summary - Improve

- Select strategies based on best practice, safety, simple, not burdensome to the department, staff, organization.
- Test the strategy, tweak, measure and reimplement
- Use multiple PDSA cycles in PI activities
- Make sure improvement strategies are controllable, sustainable and spreadable

Control – Standardize and Sustain Improvement

- How will you know your improvements are sustained?
- What if anything could go wrong with the improvements
- How are you going to make these improvements routine?
- How will you celebrate success
- Can the improvements be applied to other areas (spread)
- How will you hand off the project and communicate to stakeholders?

Tools

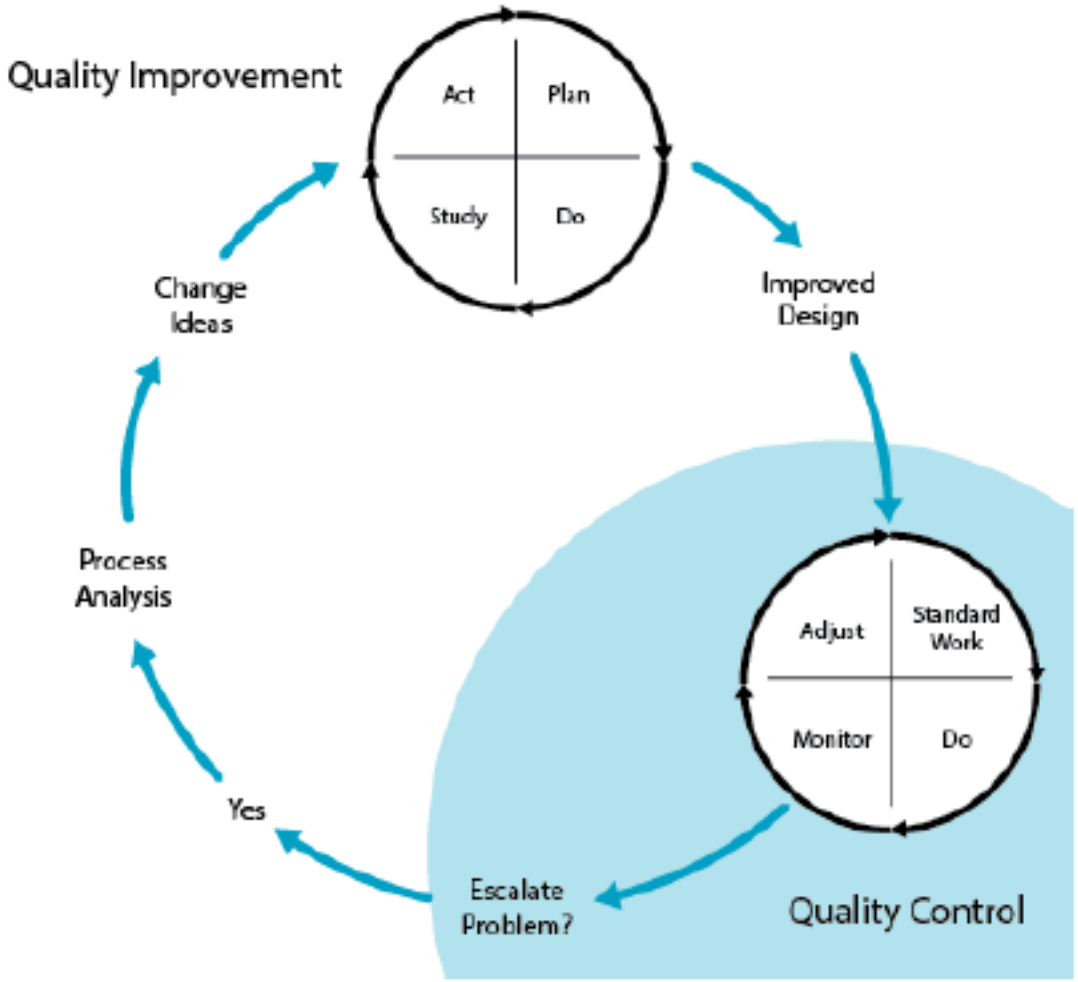
Data charts

Visual Management System

Rewards and Recognition

Control Plan

WWW



Quality Control Model

Scoville R, Little K, Rakover J, Luther K, Mate K. *Sustaining Improvement*. IHI White Paper. Cambridge, Massachusetts: Institute for Healthcare Improvement; 2016. (Available at ihi.org)

Project Improvement Plan Results Summary

	GOAL	RESULT	IMPROVE or SUSTAIN?	ACTION PLAN
AIM				
AIM Statement: By December 31, 2019, the Division of Pediatric Otolaryngology at Nemours will provide text message-based messages postoperatively to families whose children have undergone two commonly performed surgeries, adenotonsillectomy and tympanostomy tube insertion. Families will understand and retain a greater amount of information regarding their child's post-operative course as evidenced by fewer ED visits and fewer calls to the office with post op questions.	Postoperative calls and visits to the emergency department regarding information provided in the text messages will decrease by 20%.	TBD	Improve	1) Implement the text messaging system 2) Educate providers, office staff and families as to the purpose, content and timing of the messages 3) Data metrics will focus on reduced calls to the office and decreased ED results for normal post op sequelae.

Project Improvement Plan Results Summary

	GOAL	RESULT	IMPROVE or SUSTAIN?	ACTION PLAN
METRICS				
Number of calls per month/number of bilateral myringotomy with tube insertions per month	20% decrease	Initial data collection began____(date)	Preliminary data suggests continued improvements through PDSA cycles	Continue with education to staff and providers Develop a tool to collect family satisfaction comments about the text messages. • Do families like receiving the messages? • Do families read the text messages? • Do they find the information helpful to understand the post op plan? • What information could be added to the messages? • What information could be eliminated from the messages?
Number of calls per month/number of adenotonsillectomies per month	20% decrease	Initial data collection began____(date)		
Number of ED visits per month/number of bilateral myringotomy with tube insertions per month	20% decrease	Initial data collection began____(date)		
Number of ED visits per month/number of adenotonsillectomies per month	20% decrease	Initial data collection began____(date)		

Project Improvement Plan Results Summary

	GOAL	RESULT	IMPROVE or SUSTAIN?	ACTION PLAN
AIM				
AIM to decrease alarm fatigue in a medical intensive care unit through actions that decrease the total number of pulse oximeter alarms that sound daily.	Decrease number of pulse oximeter alarms by 35% from baseline by October 1, 2019	Still collecting data but so far there are less pulse oximeter alarms. but I don't have all the data yet.	Sustain	• Continue to monitor number of alarms that sound daily.
METRICS				
Number of alarms sounding that are low pulse oximeter alarms before intervention	Baseline Data	50-60% of all alarms are low pulse oximeter alarms	Improve	• Decrease the default parameter to 88% for low pulse oximeter • Educate nurses on individualizing parameters for each patient each day.
Number of nurses educated on the new parameter and individualization of alarm parameters.	95%	100% were educated as part of mandatory competencies.	Sustain	no further action required Continue to perform bedside competencies as needed
Number of alarms sounding that are low pulse oximeter alarms post intervention	Decrease	Still collecting data	sustain/improve depending on results	• Audit nursing documentation of parameters • Random real-time discussion with nurses about their patient and parameters • Continue to monitor noise levels to assure sustainable results

Project Improvement Plan Results Summary

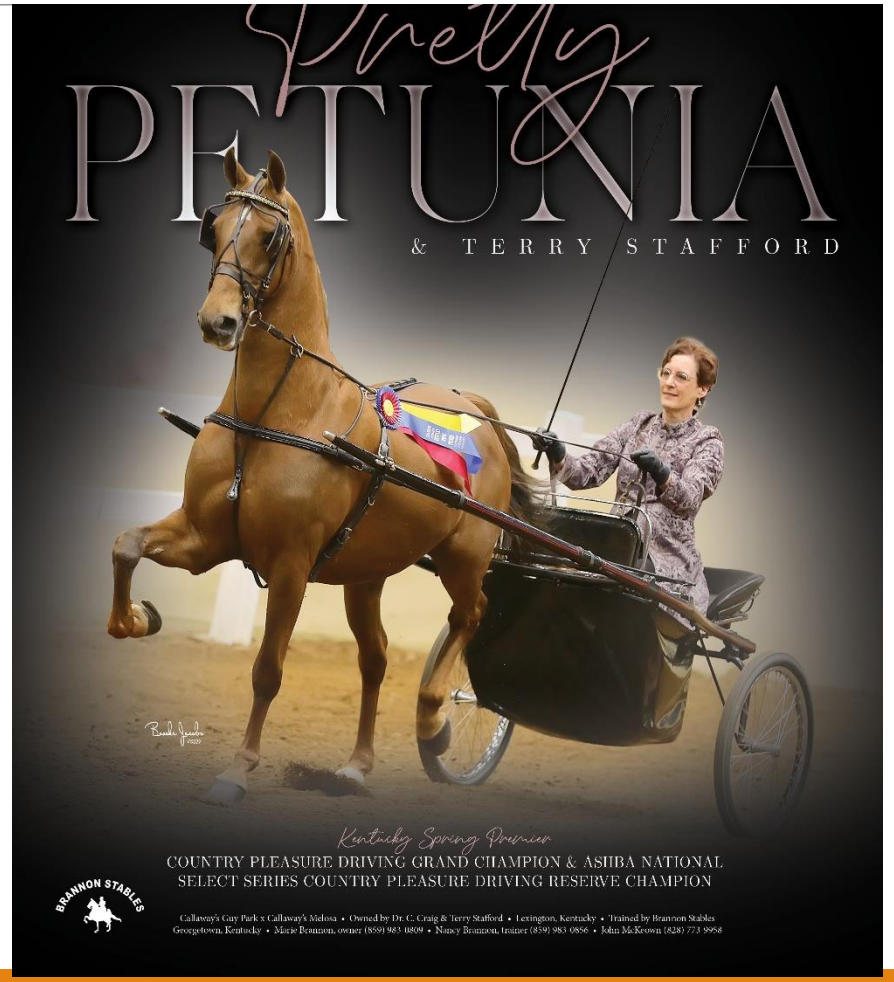
Future spread projects	GOAL	RESULT	IMPROVE or SUSTAIN?	ACTION PLAN
METRICS				
In the medical intensive care unit create a process to decrease CO2 alarms. This study showed this was also a high-rate alarm.	Decrease CO2 alarms that sound daily by 35% by January 1, 2020	TBD	TBD	• Bring sales rep back in to evaluate cause of alarms and determine intervention • Analyze appropriateness of patients being monitored • Analyze need for continuous monitoring vs intermittent monitoring to decrease alarms
Evaluate alarms in surgical trauma, neuro and cardiac ICU units for greatest alarms that sound daily	Decrease these alarms that sound by 35% by January 1, 2020	TBD	TBD	• If it is pulse oximeter decrease default to 88% • Work with leadership and staff to create a unit specific process to decrease most frequent alarms.
Continue analyzing alarms on other units to decrease highest volume alarms on each unit.	Decrease these alarms by 20% by March 1, 2020	TBD	TBD	• Work with leadership and staff on each unit to customize a process to decrease these alarms on each unit.

Summary - Control Phase/Sustainability

Sustainability occurs when processes or improved outcomes last within an organization after implementation has occurred. An improvement that has become part of the organizational culture and has been maintained regardless of workforce turnover is an example of a sustained improvement.

- Sustainability is also related to successful culture change within an organization. Maintaining the ideas, beliefs, principles, or values underlying an initiative and having the new ways of working become the norm show that the change has positively influenced the culture.

- CELEBRATE



Objectives

01

Synthesize and apply quality/safety improvement methods and tools in a clinical setting.

02

Promote sustained improvement of an identified goal through effective application of quality improvement tools and methods.

03

Integrate improvement science, complexity science, quality and safety tools and methodologies to develop systematic designs to sustain improvement in population healthcare delivery and outcomes.

Lean Tool Learned

- Waste walks
- Gemba walks
- Spaghetti Diagrams
- Standard Work
- Mistake Proofing
- Six Sigma
- PDSA
- Value Stream Maps
- Current State Maps
- Future State Maps
- Leadership
- Coaching
- Cultural Transformation
- Change Management
- WWW
- Control Plan
- Communication Plan
- Stakeholder Analysis
- Data charts
- FMEA
- ARMI Analysis
- Rewards and Recognition
- Visual Management Systems
- Cause and Effect Diagrams
- SMART Goals
- Barriers to success
- Voice of the Customer
- Project Charter

“Every great organization in the world does two things everyday: makes a product, and makes the product better”

David Lawrence,
Chairman Emeritus
Kaiser Permanente

Resources

Institute for Healthcare Improvement (IHI) www.ihi.org

Crossing the Quality Chasm: A New Health System for the 21st Century Institute of Medicine (US) Committee on Quality of Health Care in America Washington (DC): National Academies Press (US); 2001.PMID: 25057539 Bookshelf ID: NBK222274 DOI: 10.17226/10027

https://www.nap.edu/resource/9728/To-Err-is-Human-1999--report-brief.pdf

Scoville R, Little K, Rakover J, Luther K, Mate K. *Sustaining Improvement*. IHI White Paper. Cambridge, Massachusetts: Institute for Healthcare Improvement; 2016. (Available at ihi.org)

Agency for Healthcare Research and Quality www.ahrq.gov.

The Joint Commission www.jointcommission.org.

Becker Hospital Review CMS' proposed inpatient payment rule for 2022: 8 things to know
Alia Paavola - Wednesday, April 28th, 2021

Quality improvement and patient safety: Reality and responsibility from Codman to today Martin A. Koyle a,b , Leah C.C. Koyle c , G. Ross Baker Journal of Pediatric Urology 2018 14, 16-19

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Gridller, Steven J., Glezos, Christopher D. MD, Link, Timothy M., Sharan, Alok, MD, The Science of Quality Improvement. Journal of Bone and Joint Surgery; JSBS Reviews Vol 4(8) 2 August 2016.

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