



An Introduction to Lean Six Sigma

Welcome! Thank you for joining! Sound for the webinar will come through your computer speakers. Please feel free to submit your questions throughout the webinar using the chat feature. We will start momentarily.

March 11, 2015

Wanda Williams, LSSBB – Tacoma-Pierce County Health Department

Moderated by Laura Arena, MPH

QUALITY IMPROVEMENT TOGETHER.



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Lean Six Sigma

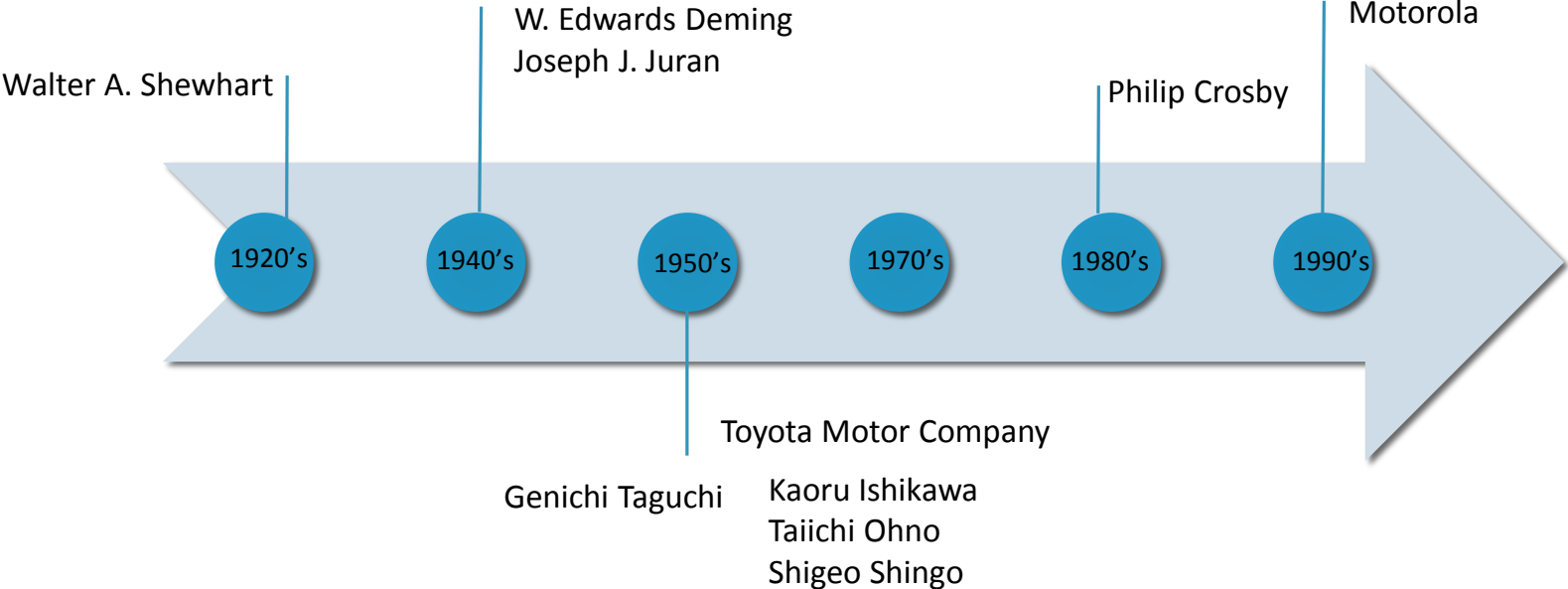
AN INTRODUCTION

Topics in this Session

- Brief history of quality improvement.
- What is Lean, Six Sigma, and Lean Six Sigma?
- Benefits of Lean Six Sigma.
- Introduction to DMAIC method.
- Compare Plan-Do-Study-Act (PDSA) cycle with DMAIC method.
- Examples from the field.
- Test your knowledge quiz.



History of Quality Improvement



Approaches to Quality

Quality Approach	Approximate time frame
Quality Circles	1979 - 1981
Statistical Process Control	Mid-1980s
ISO 9000	1987 - present
Reengineering	1996 - 1997
Benchmarking	1988 - 1996
Balanced Scorecard	1990s - present
Baldrige Award Criteria	1987 - present
Six Sigma	1995 - present
Lean Manufacturing	2000 - present
Lean Six Sigma	2002 - present



Key Concepts of Quality

- Process focus.
- Customer focus.
- Collaboration.
- Data driven management.
- Strategic planning for quality.





TOOLS
VARIATION NECESSARY REDUCED
CHALLENGE POOR AREAS
PRACTICE FIRST
NEW WELL MAJOR
MUDA PHILOSOPHY
PARTICULAR
TWO FOCUS IMPLEMENTATIONS VALUE
INCREASE
PROBLEMS THEREFORE
STEPS
ACHIEVED
RESULTS
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KEY PLACE
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APPROACH

ONE MANUFACTURING
MANAGEMENT
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IMPROVEMENT
PRINCIPLES
PRODUCTION

INTERNAL TECHNIQUES
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CUSTOMER

PROCESSES
EXAMPLE
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ALWAYS DEMAND PROGRAM
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BEST HISTORY
ORGANIZATION
METHOD VALUES
BUILT
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ACHIEVE
THOUGHT
EVERY INCREASING
PROCESSING

USED TOOL SERVICE WAY CENTURY PARTS REQUIRED METHODS EXAMPLES
WAREHOUSES
TEAMS
POSSIBLE PEOPLE INVENTORY GOALS
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WHAT is Lean?

- Systematic approach.
- Set of principles and practices.
- Way of thinking.



Lean

Focuses on:

- Eliminating **waste** and non-value-added activities.
- Maximizing the **value** delivered to customers.
- Optimizing flow of products and services.



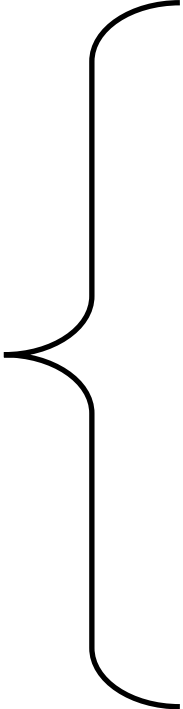
WHAT is value?

- Customer wants you to do it.
- The material or information is being transformed to final product or service.
- It is done right the first time.



WHAT is waste?

Waste

- 
1. Overproduction
 2. Inventory
 3. Transportation
 4. Waiting
 5. Motion
 6. Over Processing
 7. Correction or Rework



WHAT is Lean?

Definition:

A systematic approach to identifying and eliminating waste through continuous improvement by flowing the product or service at the pull of the customer in pursuit of perfection.

Defined by National Institute of Standards and Technology (NIST)



ZERO WASTE



60



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WHAT is Six Sigma?

- Philosophy
- Set of tools
- Methodology
- Metrics



Six Sigma

Focuses on:

- Putting customers first.
- Reducing process variation.
- Enhancing process control.



WHAT is Six Sigma?

Definition:

A fact-based, data-driven philosophy of improvement that values defect prevention over defect detection. It drives customer satisfaction and bottom-line results by reducing variation and waste, thereby promoting a competitive advantage. It applies anywhere variation and waste exist, and every employee should be involved.

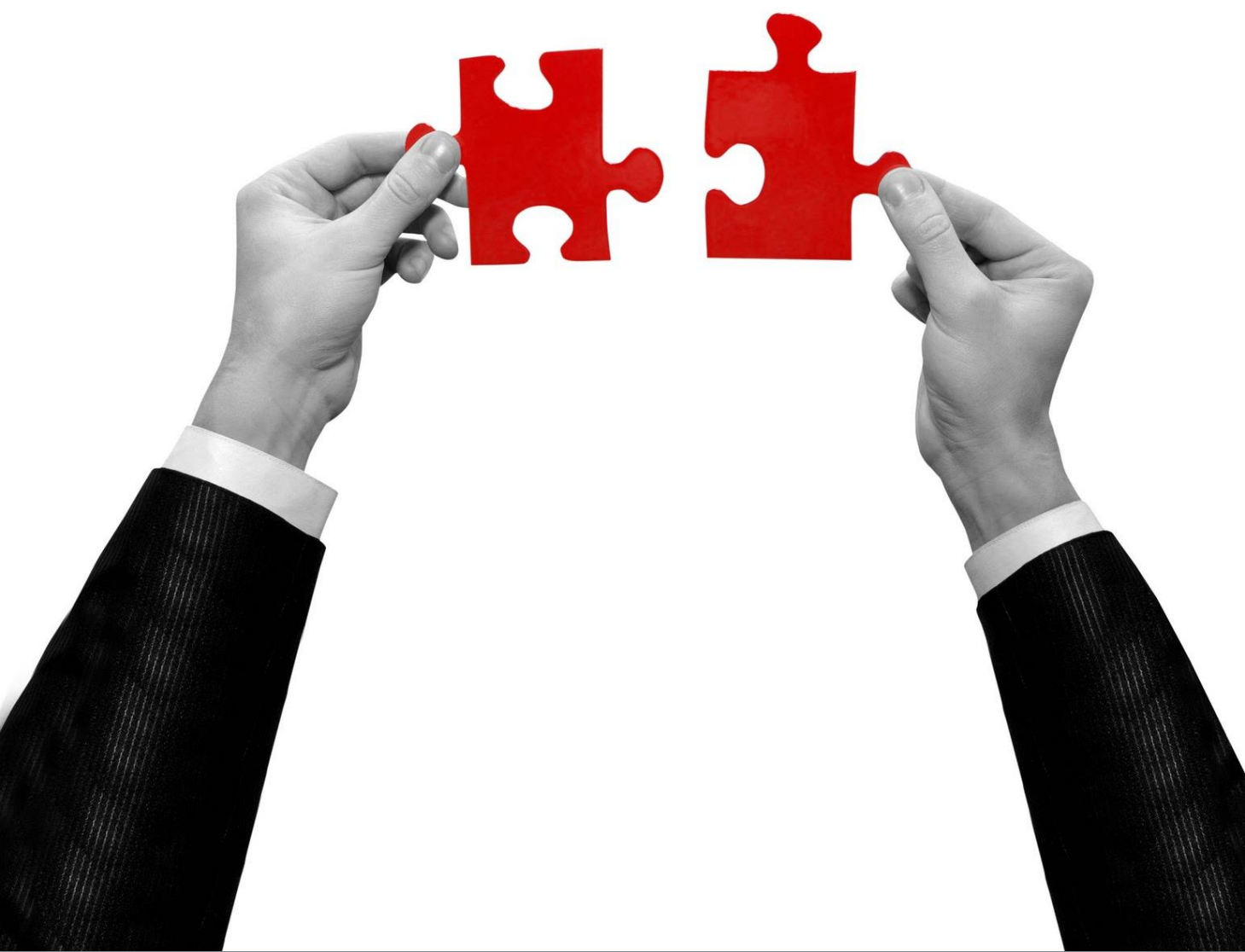
Defined by American Society of Quality (ASQ)

Reducing



variation





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WHAT is Lean Six Sigma?

- Method
- Engine
- Mindset
- Toolkit



Lean Six Sigma

Focuses on:

- Delighting customers with speed and quality.
- Improving processes.
- Working together for the greater good.
- Basing decisions on data and facts.



WHAT is Lean Six Sigma?

Definition:

A fact-based, data-driven philosophy of improvement that values defect prevention over defect detection. It drives customer satisfaction and bottom-line results by reducing variation, waste, and **cycle time**, while promoting the use of **work standardization and flow**. It applies anywhere variation and waste exist, and every employee should be involved.

Defined by American Society of Quality (ASQ)





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BENEFITS

WHY would you use Lean Six Sigma?

- Manage quality into the business process.
- Meet or exceed customer needs or requirements.
- Improve performance and effectiveness.
- Transform your organizational culture.



WHEN would you use Lean Six Sigma?

- Customers still complain about your products or services.
- Employees complain about the roadblocks to serving customers.
- Everyone blames the customers and/or employees.



Improvement Methods





PDSA Cycle

- Also called Plan-Do-Check-Act (PDCA) cycle
- Four-step model for carrying out change



PDSA Cycle

- Recognize an opportunity and plan a change.



PDSA Cycle

- Test the change.
- Carry out a small-scale study.



PDSA Cycle

- Review the test.
- Analyze the results.
- Identify what you learned



PDSA Cycle

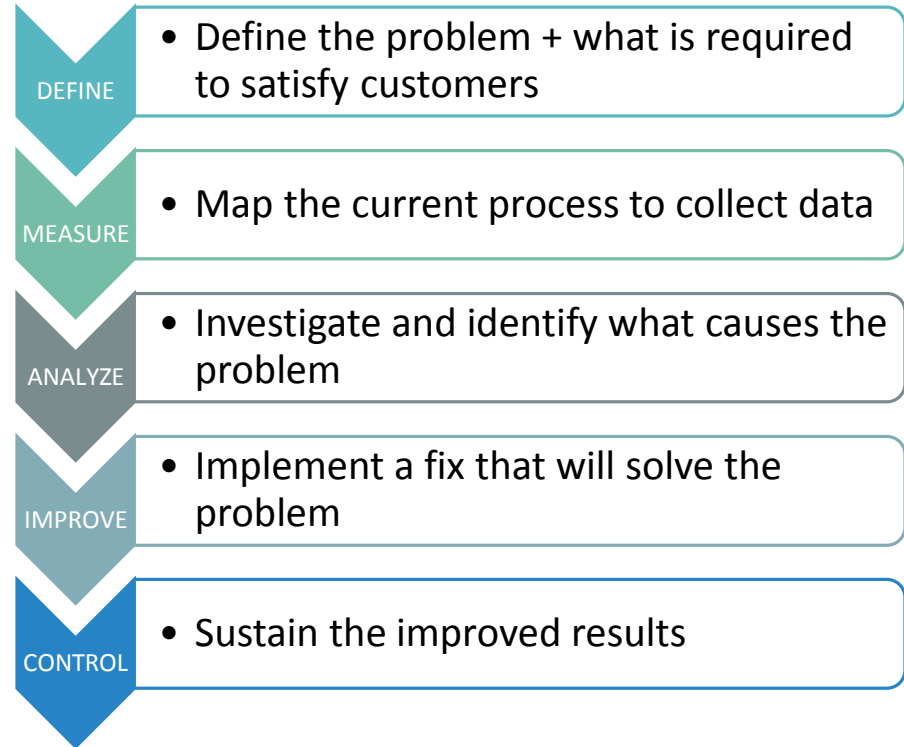
- Take action based on what you learned.
- Use what you learned to plan new improvements.
- Begin cycle again.



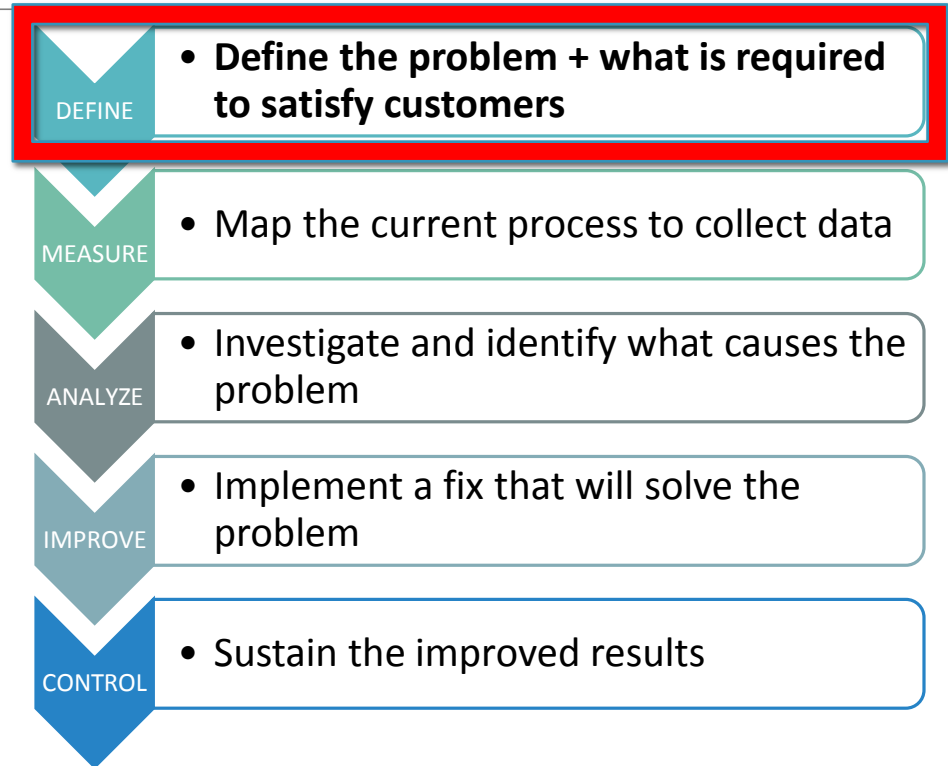
DMAIC Method



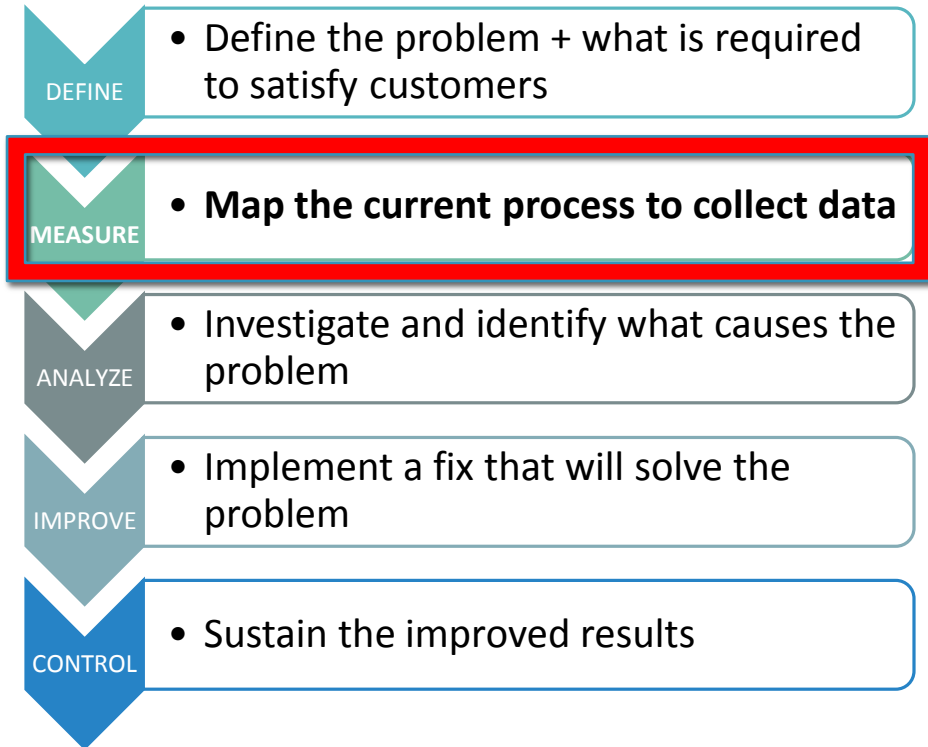
- Pronounced “Duh-MAY-ick”
- Structured problem-solving methodology
- Uses project management and statistical tools for each phase



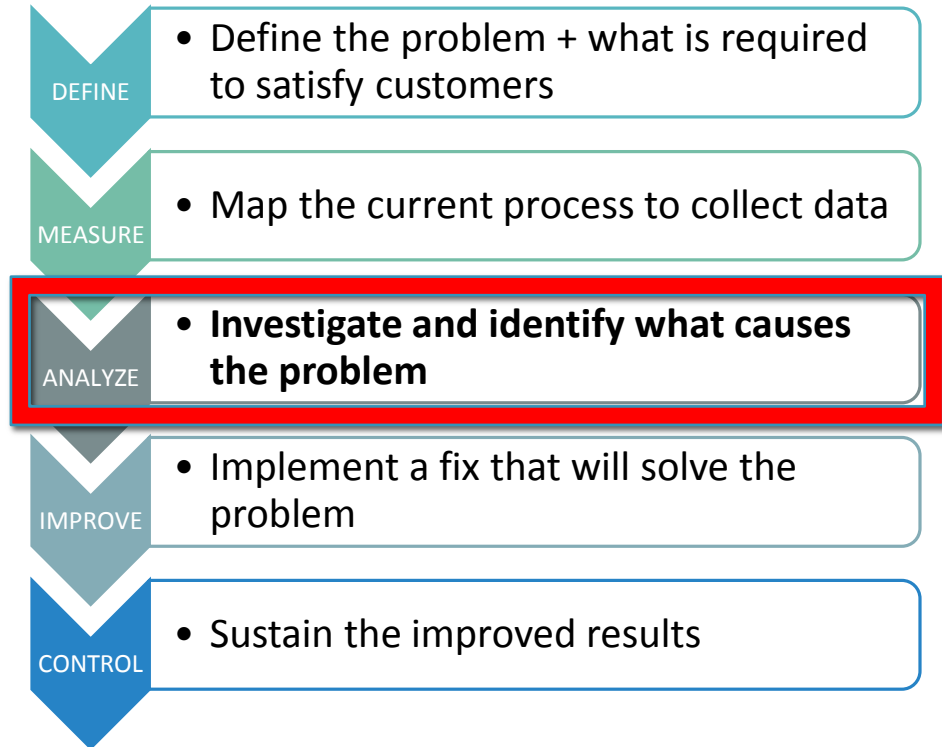
DMAIC Method



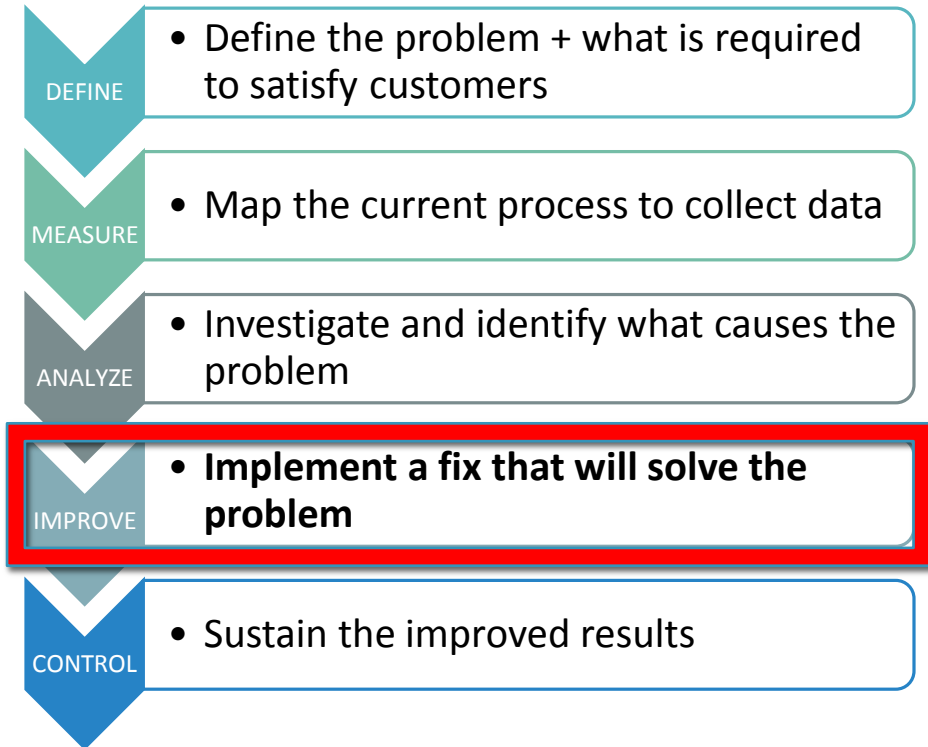
DMAIC Method



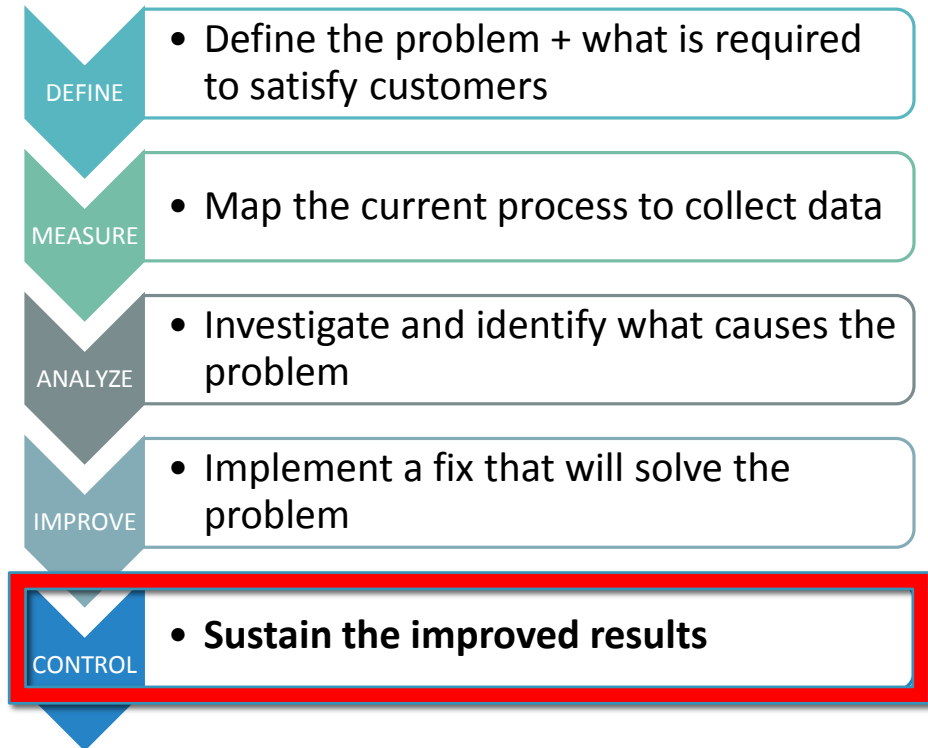
DMAIC Method



DMAIC Method



DMAIC Method





Where the rubber meets the road!



STEPS to DMAIC Method


PHASE 1: DEFINE

Team and sponsors reach agreement:

- what the project is
- what it should accomplish

Project team focus:

- Complete analysis of what the project should accomplish
- Confirm understanding with sponsor(s)



Health Department
Tacoma-Pierce County

QI/QP Project Definition Document

<p>Project Name: Clean Air for Kids Coordinated Care <i>3-3 word identifier</i></p> <p>Problem/Opportunity: Clean Air for Kids signed a contract with Coordinated Care (Medicaid Payer) to provide asthma home visits and Coordinated Care pediatric clients with asthma. This is a pilot project and is in need of Quality Improvement and running for 8 months.</p> <p><i>1-3 sentence description of the problem/opportunity (without assumption of cause or solution) and why it is important (impact on Dept./D)</i></p> <p>Measure(s): Increase in positive response rate to home visit offer Reduction in the number of steps in the process Reduction in the amount of TPCHD staff time given prior to an actual home visit.</p> <p><i>The quantitative indicator(s) which would demonstrate performance improved. More than 2-3 measures may indicate lack of focus.</i></p> <p>Mission: The team is to identify each step in the process and and Coordinated Care in order to gain their input an</p>	<p>Sponsor(s): EH- Clean Air for Kids (?) <i>Who is governing and resourcing this project?</i></p> <p>Targets:</p>
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Stakeholder Analysis						
Influence of Stakeholder	Importance of Stakeholder				Key Stakeholders	Interest
	Unknown	Little / No importance	Somewhat importance	Significant importance		
Significant influence			PHAB		PHAB Funders: CDC/RWIF	Quality Public Health System; on National level improve health outcomes; Money well spent; having impact; bigger bang for buck; Accredited health departments in better position to continually meet customer/PH needs; have capacity to improve & enhance services
Somewhat influential			BOH Community Partners		Board of Health Tacoma-Pierce County Health Department	Governs the Health Department; concerned with strengthening the health of communities of Pierce County; Accountable to constituents; Supports improving quality of services and fiscal responsibility.
Little / No influence		Funders			Residents / visitors to Pierce County	Quality Public Health Services that improve health outcomes; Supports mission - Safeguard and enhance health of Pierce County and vision - Healthy People Healthy Communities; Working toward Strategic Directions Health outcomes and Organization Excellence
Unknown			Team TPCHD		Community Partners	Can rely and trust in the services, information and support from the Health Department; knows they strive to provide high quality services; fiscally responsible; responsive to customer needs; listens to and values customer input and feedback. Partnering with Health Department that focuses on providing quality customer focused services; decrease inefficiencies to maximize positive outcomes for customers and community; maintains competent workforce and fiscally responsible



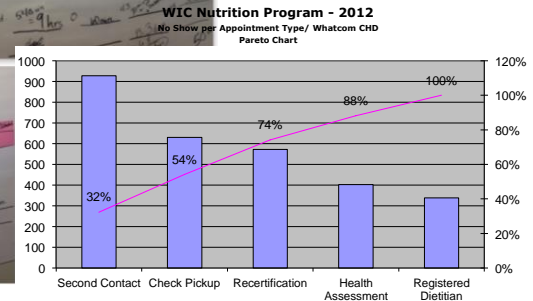
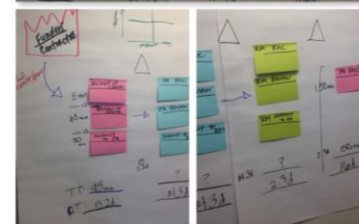
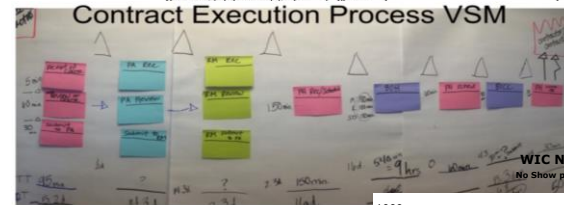
STEPS to DMAIC Method

PHASE 2: MEASURE

Project team focus:

- What is causing the problem to happen
- Collect data to answer question(s)
- Narrow down the problem

Voice Of the Customer Translation Matrix			
Customer Comment	Type	Gathering More Understanding	Customer Requirement
Meetings increased in frequency closer to deadline	Process	Frequency of communication based on deliverables and timelines	
Much of work waited until the end of project deadline	Process	Project planning and management of deliverables, clear expectations	
Need strong leadership support	Process	Demonstrated leadership support	Leadership support - strong
No clear understanding for agency as whole	Process	Purpose, connect to agency mission, vision and priorities	
Drive you left the meeting table people forgot to follow-up on assistance requests	Process	Accountability and expectations	Accountability
People are already feeling overloaded	Process	Priority, workload and project management	Resource allocation
People are busy and have competing priorities	Process	Priority, workload and project management	Resource allocation
Share big picture and purpose	Process		Vision

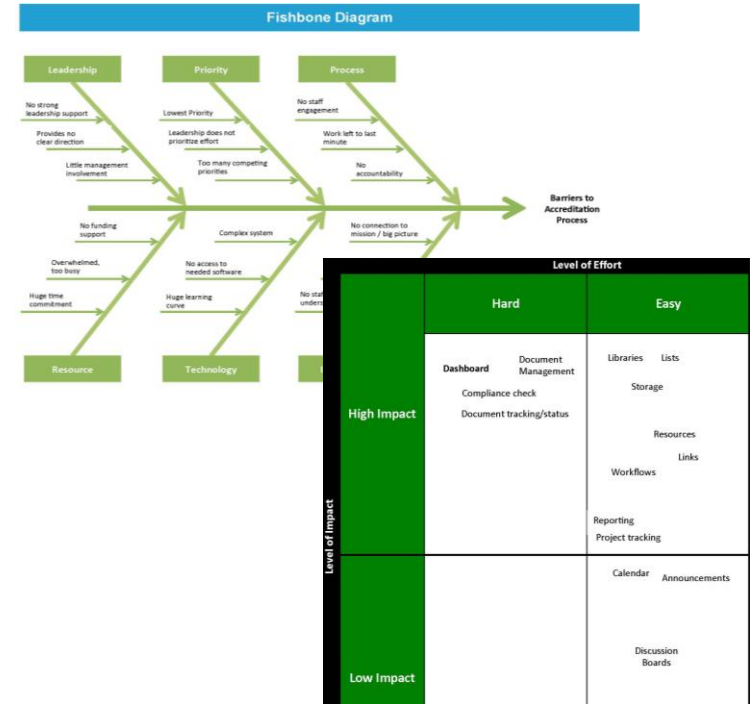


STEPS to DMAIC Method

PHASE 3: ANALYZE

Project team focus:

- Identify the root causes for problem(s)
 - Agency
 - Customer
 - Employee
- } Experience

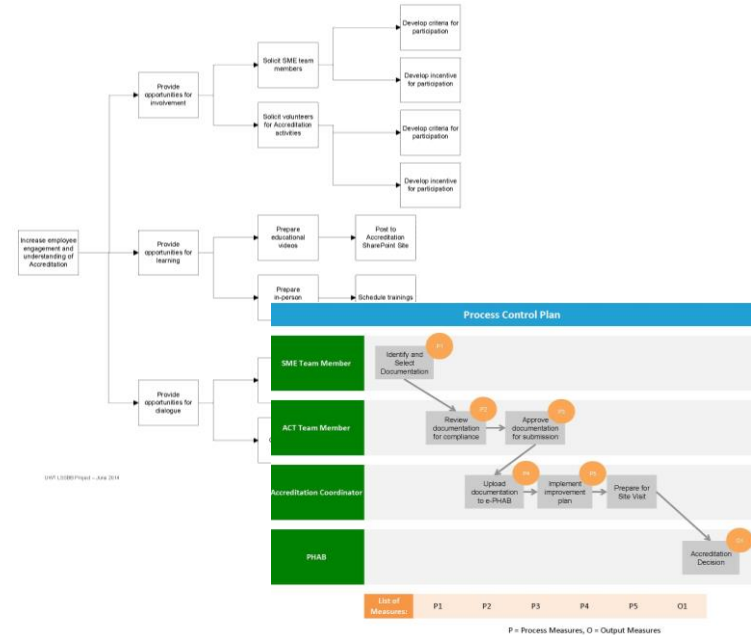


STEPS to DMAIC Method

PHASE 4: IMPROVE

Project team focus:

- Verify root causes
- Identify solutions & practical method
- Test and evaluate effectiveness and feasibility of proposed solution
- Implement permanently



STEPS to DMAIC Method

PHASE 5: CONTROL

Project team focus:

- Verify how much improvement was made, if any at all
- Confirm root causes have been reduced
- Implement fully
- Review indicators/measures from DEFINE phase
- Incorporate solutions into daily work
- Monitor process

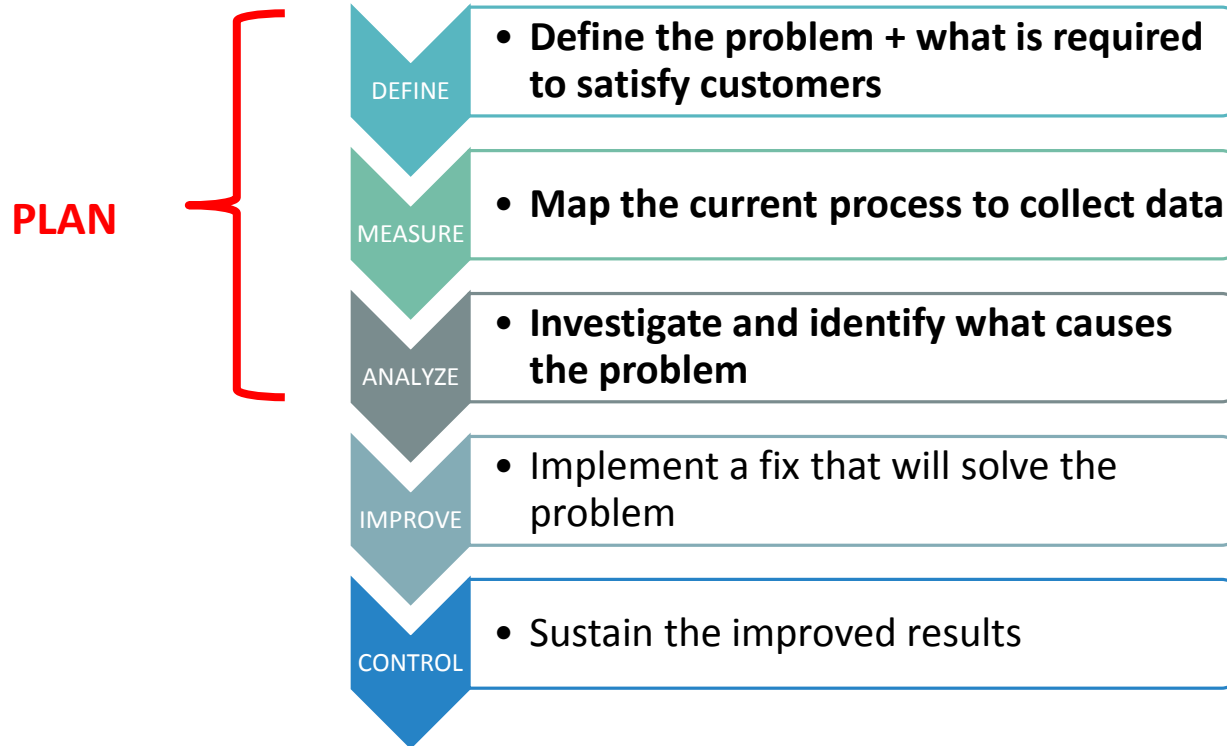
RACI Matrix											
	Director	Accreditation Coordinator	ACT	SME Team	STAFF						
Pre-Application	R/I	A			I						
Application	R/I	A			I						
Document Submission	R/I	A	C	C	I						
PHAB Accreditation Training	I	R/A									
Public Health Domains Training	I	R/I									
Site Visit	R/I	A									
Accreditation Decision	I	I									
Annual Reports	R/I	A									
Quality Improvement Efforts	R/I	I									
RACI represents: R-Responsibility, A-Accountable, C-Consulted, and I-Informed											
RACI Definitions:											
Responsibility - person or role responsible for ensuring that the item is completed											
Accountable - person or role responsible for actually doing or completing the item											
Consulted - person or role whose subject matter expertise is required in order to complete the item											
Informed - person or role that needs to be kept informed of the status of item completion											
Implementation Plan											
Goal Objectives	Activity	Owner	June	July	August	# of measures per measure	# of selected documents that meet requirements	# of documents approved	# of documents complete	% of standards meeting improvement	% of measures fully met
Identify information to track	Review PHAB Standards and Measures	WW									
Collect information for Lists	Collect PHAB Standards and Measures	WW									
Create Lists	Create lists for Domains, Standards, Measures, Tracking information and dates	WW									
Create Library	Add custom field, create views and look-ups	WW									
Solicit staff involvement and create team	Create SME application survey	SC									
Provide resources and education	Create discussion board and links to	SC									
Create visually appealing page	Add summary lo-ink webpage for videos	SC									
Engage teams	Set notifications	SC									
Ensure Accountability and Accuracy	Create workflows for review process	WW/SC									
Ensure Accountability and Accuracy	Create workflows for approval process	WW/SC									
Ensure Accountability and Accuracy	Develop dashboard features	WW/SC/SC									
Establish sustainability	Create template library and lists	SC/SC									



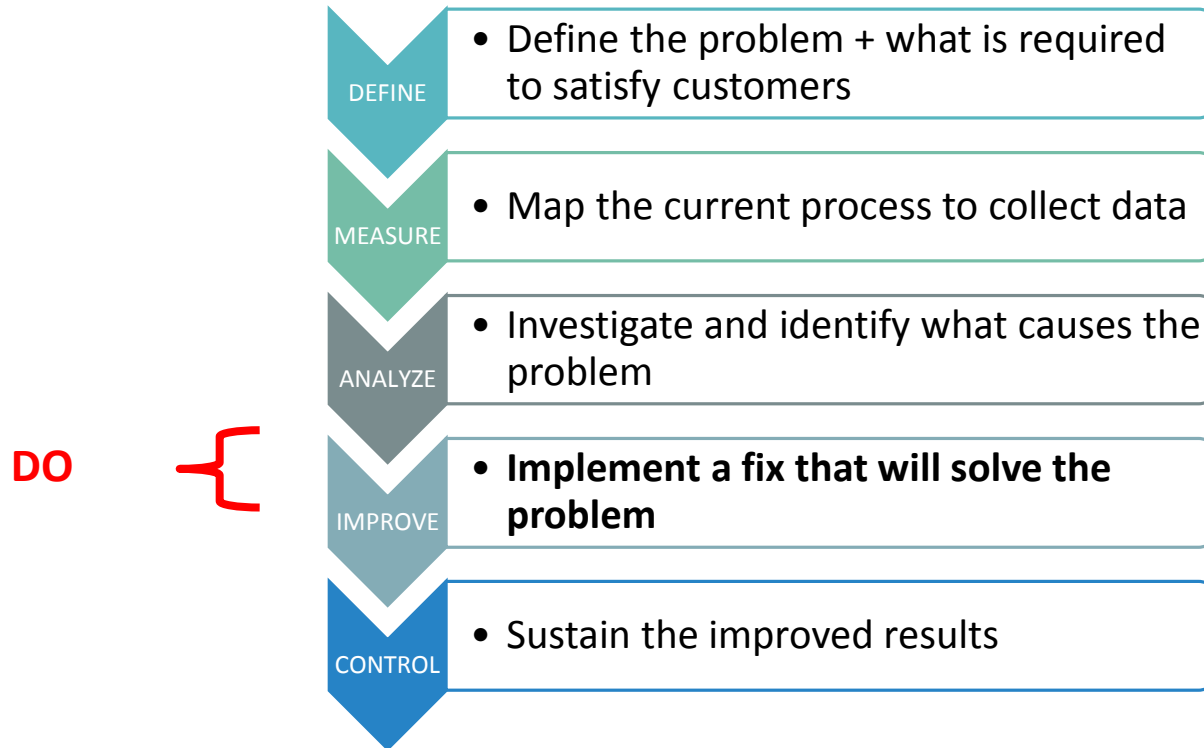
How do they compare?



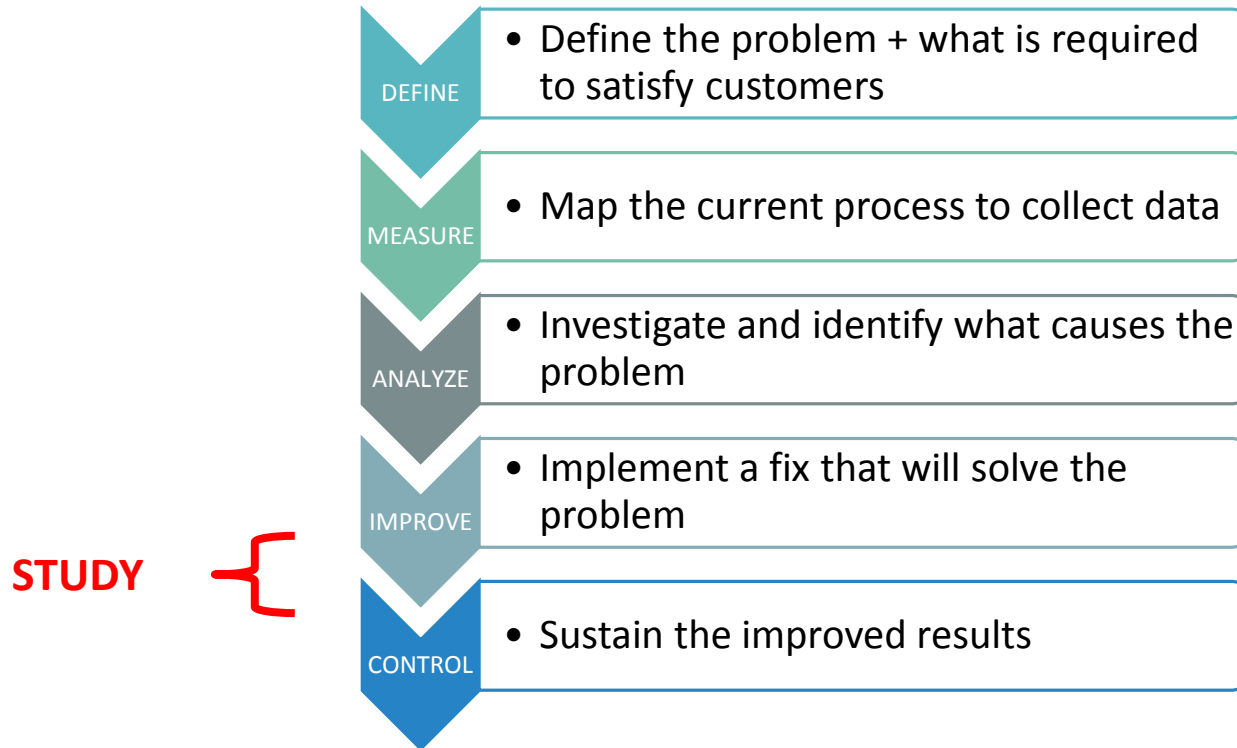
Comparison of methods



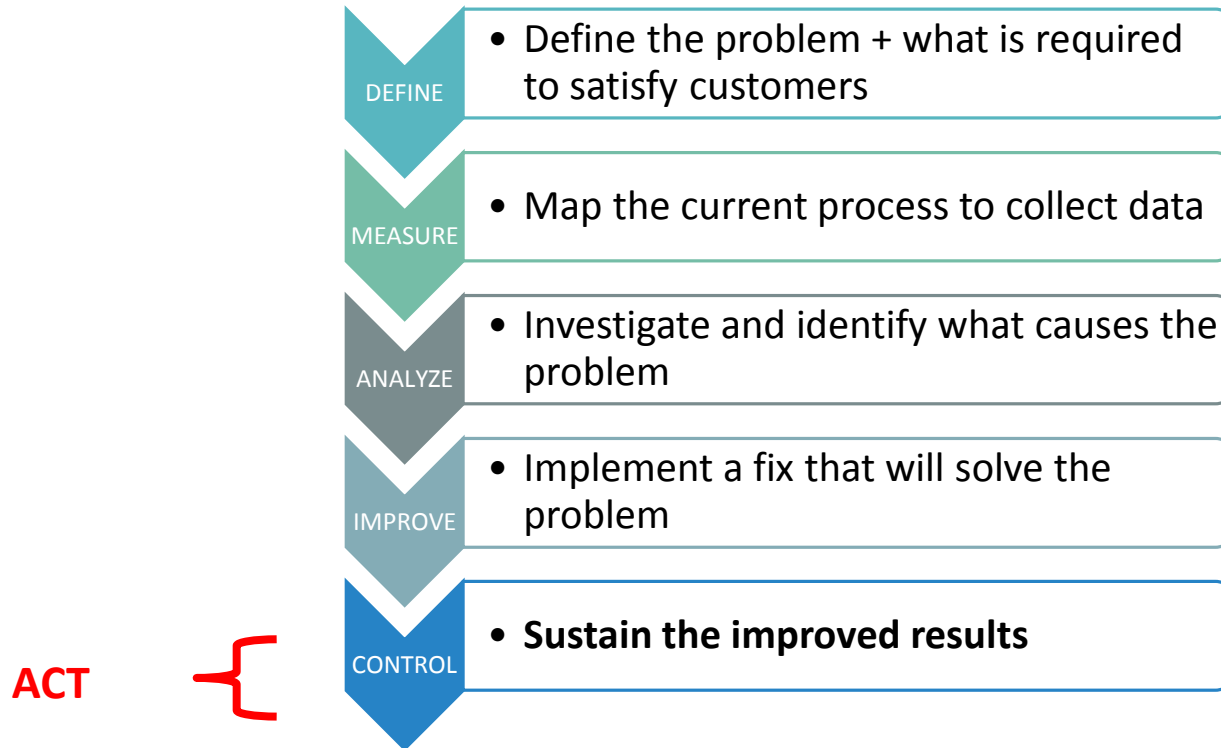
Comparison of methods



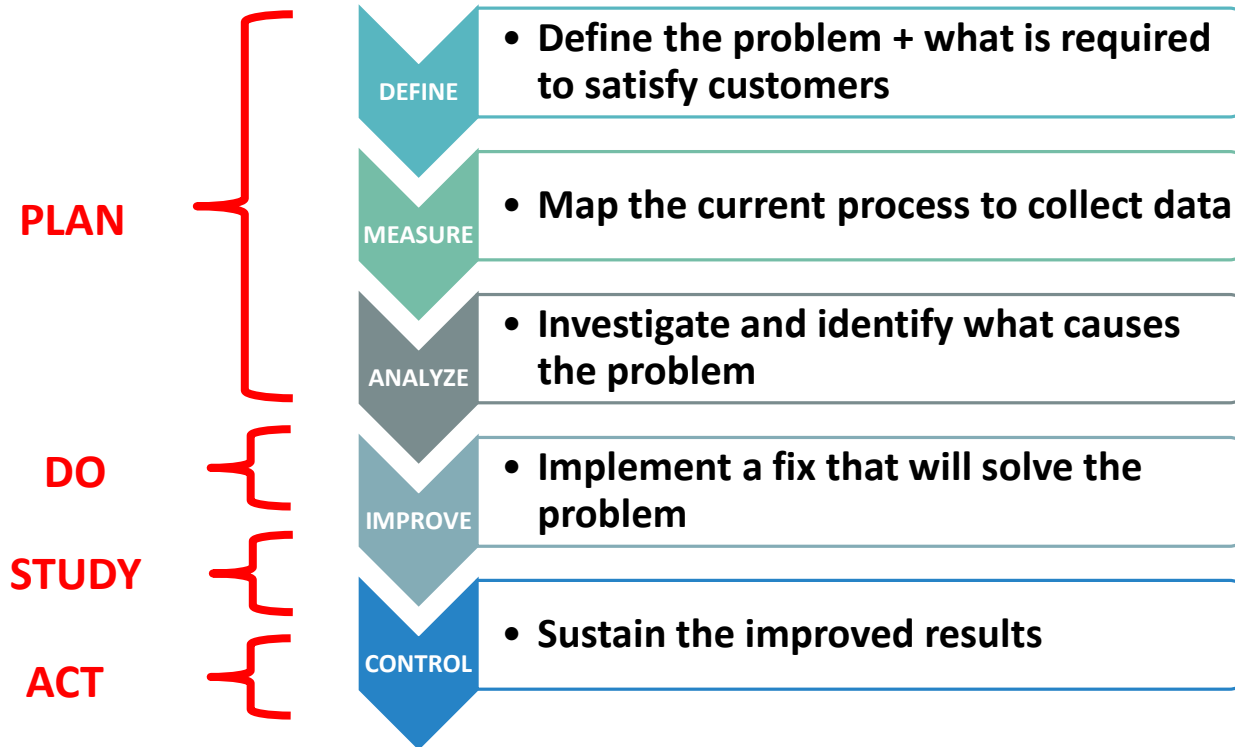
Comparison of methods



Comparison of methods



Comparison of methods



PRINCIPLES to Lean Six Sigma



- Focus on the customer.
- Identify and understand how work gets done.
- Manage, improve and smooth the process flow.
- Remove non-value-adding steps and waste.
- Manage by fact and reduce variation.
- Involve and equip the people in the process.
- Undertake improvement activity in a systematic way.





EXAMPLES

From the field



Two Black Belts



Nine Green Belts



Ten White Belts

Tacoma-Pierce County Health Department

Roles & Responsibilities



Quality Steering Team

- Purpose:** Steering committee; sets long-term direction for agency's quality culture and work
- Membership:** Green Belts - Supervisor/Manager (1), Green Belt - Staff (1), Black Belt (1), Management Team (1), Division Directors (4), Director (1)
- Leadership:** One person decided by Committee (TBD)
- Meeting Frequency:** Bi-monthly

Quality Coordinating Team

- Purpose:** Leads the work; address and resolve current issues and questions; focus on how we perform quality work
- Membership:** Green Belts, Black Belts, OAPI Program Manager, Quality Projects Leads (variable)
- Leadership:** Black Belts (pilot)
- Meeting Frequency:** Monthly with minimum of 8 times/year

Quality Action Team(s)

- Purpose:** Time-limited teams that work to improve a specific process
- Membership:** Quality project leads, sponsors, and facilitators; staff closest to the work; membership is variable and project specific
- Leadership:** Project leads
- Meeting Frequency:** As needed per project timeline

All Staff

- Purpose:** Embody and live quality in all of our work
- Membership:** All TPCHD staff
- Leadership:** Everyone

Tacoma-Pierce County Health Department

Quality Structure



COMMUNICATIONS PRODUCTION PROCESS QUALITY ASSURANCE (ADMIN)

This initiative supports the Department's Strategic Direction #5: The Department achieves organizational excellence by means of highly skilled people, improved processes and effective systems.

Project Team: Edie Jefers (sponsor/owner); Anne Dillon; Danette Gundy; Dawn Jacobs; Jamie-Diane Zorich; Ji Hae Yi; JoDee Mosley; Rebecca Casey; Selina Chambliss; Modinat Ogun (QI)

Process Improvement Method utilized: Lean Six Sigma - Define, Measure, Analyze, Improve, Control, Share (DMAICS)

Project Timeline: March - August 12, 2014 (QA aspect); August - December 2014 (QI aspect)

PROJECT PHASE	DATES	ACTIVITIES (work plans will be developed for each phase)	Tools Utilized (Lean Six Sigma, etc.)	STATUS	OWNER
Define phase	March 24 - April 14 2014	Complete project definition form: problem statement, project name, process to be addressed, identify customers, mission statement, measures, targets, team members, constraints, project owner, project timeline	Project Definition Form	100%	Comms team

Measure phase	April 14 - Aug 12, 2014	Gather the information/data needed pertaining to the issue: Map process - current state (identify gaps, pain points; match to VOC data); Obtain Voice of Customer via surveys (Admin Services, Employee Satisfaction survey, Communications Liaisons Customer Satisfaction; Customer Satisfaction (Staff of process), Request Log/Tracker; Identify performance measures (tied to process mapping)	Process Map Current State; VOC (Voice of Customer surveys) - Supervisors, Managers, Teams, Stakeholders; Comm Production Form & Instructions; Comms Plan - for QA initiative	100%	Comms team
Analyze phase	Aug 13 - Sept 2014	Review, analysis and resolution of the information discovered/uncovered during the Measure phase: <ul style="list-style-type: none"> • Root Cause analysis • VOC + Process Steps • Cycle Time Analysis 	Fishbone Diagram Issues Resolution Tracker (VOC)	100%	QI Project team
Improve phase	Oct - Dec 2014	Implementing changes to the process, documentation, filling the gaps in the process, remapping the process (future state), developing templates, assigning SLAs and timelines, clarifying roles and responsibilities.	Process Map Future State Documentation Test/Pilot	50%%	QI Project team



This initiative supports the Department's Strategic Direction #5: The Department achieves organizational excellence by means of highly skilled people, improved processes and effective systems.

Project Team: Lead: Michele Haymond | Owners: SCT: Marcy Boulet, Jacques Colon, Mike Davis, Gini Gobeske, Linda Graves, Linda Miner, Nigel Turner, Michele Haymond, Cathy Mortell ; Wanda Williams (QI)

PROJECT PHASE	DATES	ACTIVITIES (work plans will be developed for each phase)	TOOLS UTILIZED (Lean, Six Sigma, etc.)	STATUS	OWNER
Define	June - October 2014	Complete high-level SIPOC to define School Collaboration system; complete individual program SIPOCs to identify similar processes. Assess and determine which process will assist all programs in providing more effective and efficient services to schools.	SIPOC; Project Definition Form	100%	SCT

TEST YOUR KNOWLEDGE

Lean Six Sigma is a...

- a) Mindset for solving problems
- b) Method for solving problems
- c) Toolkit for solving problems
- d) All of the above



TEST YOUR KNOWLEDGE

Lean Six Sigma can help you solve problems with...

- a) Delays
- b) Errors
- c) Variation
- d) All of the above



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Public Health Performance Management Centers for Excellence
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Questions?

