Process Improvement Plans

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Conflicts of Interest

- I am an ACR site Surveyor

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What is Process Improvement

process improvement

noun [U] · UK 🔊 US 🔊 (ALSO business process improvement) WORKPLACE, MANAGEMENT

⭐ **the job of examining the processes used in a company, department, project, etc. to see how they can be made more effective:**

The company is now building continuous process improvement into day-to-day operations.

process improvement consulting/methodology/plan

(Definition of "process improvement" from the **Cambridge Business English Dictionary** © Cambridge University Press)

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Process Improvement Philosophy

HealthCatalyst
ignite change

Five Deming Principles That Help Healthcare Process Improvement

By John Haughom, MD

https://www.healthcatalyst.com/5-Deming-Principles-For-Healthcare-Process-Improvement

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Top Five

1

DEMING PRINCIPLES

Quality improvement is the science of process management

Deming's quality control methods based on one simple concept – Quality improvement is really about process management.

Pareto's principle says improving 20% of ongoing processes will impact the overall system by 80%.

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Top Five

3

DEMING PRINCIPLES

Managed care means managing the processes of care, not managing physicians and nurses

Engage clinicians in the process because they understand the care delivery process and are best equipped to figure out how to improve the process of care over time.   .

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Top Five

4

DEMING PRINCIPLES

The right data in the right format at the right time in the right hands

If clinicians are going to manage care, they need the right data delivered in the right format at the right time and in the right place.

And delivered into the right hands, they can operate and improve any given process of care.

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Top Five

5

DEMING PRINCIPLES

Engaging the "smart cogs" of healthcare

To use Deming's term, clinicians are healthcare's "smart cogs." They are the frontline workers who understand and own the processes of care.

Our healthcare clinicians are extraordinarily committed, very intelligent, and highly educated.

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Why do we need process improvement?

- Patient Safety
- Patient Satisfaction
- Reduce Variation
- Improve Efficiency (reduce waste)
- Improve Quality
- Regulatory/Accreditation
  - The Joint Commission, The Commission on Cancer, The American College of Radiology (ACR), The American Society for Radiation Oncology (ASTRO), and The American College of Radiation Oncology (ACRO) all require process improvement

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Process Improvement Philosophies – Change Management

- Change Management is a set of principles designed to increase the success and accelerate the implementation of organizational change efforts. It addresses how to **create a shared need for the change**; understand and **deal with resistance from key stakeholders**; and build an **effective influence strategy** and **communication plan for the change**.

- http://www.centerfortransforminghealthcare.org/about/rpi.aspx

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Change Management

1. Identify What Will Be Improved
2. Present a Solid Business Case to Stakeholders
3. Plan for the Change
4. Provide Resources and Use Data for Evaluation
5. Communication
6. Monitor and Manage Resistance, Dependencies, and Budgeting Risks
7. Celebrate Success
8. Review, Revise and Continuously Improve

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Process Improvement Philosophies - Lean

- Lean is a well-defined set of tools that increase customer value by **eliminating waste** (muda) and creating flow throughout the value stream. The following bullets describe lean improvements:
- Inexpensive to implement
- **Focus on improving the process**, not the people
- Address the batch and queue mentality of silos by following process flow
- **Promote simple, error proof systems**

- Therefore, a Lean process is better (no defects, it is what the customer wants), cheaper (non-value added work is removed, there is no re-work or scrap), and faster (eliminates batch and queue, introduces flow, gets it right the first time).

- http://www.centerfortransforminghealthcare.org/about/rpi.aspx

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Lean

- **The Lean Steps:**
  - Specify Value – from the customer's perspective
  - Map the Process – Process Map or Value Stream Map
  - Identify Value Added and Non-Value Added Steps
  - Examine Flow – continuous, minimally interrupted flow; single piece vs. batching
  - Create Pull – do not produce until the next step downstream is ready for you
  - Pursue Perfection – **sustain improvement**; change culture

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Process Improvement Philosophies – Six Sigma

- Six Sigma is a statistical model that measures a process in terms of defects. Six Sigma enables an organization to achieve quality by using a set of **strategies, tools, and methods designed to improve processes** so that less than 3.4 defects (errors) exist per million opportunities and **processes are as near to perfect as possible**. Sigma, or the Greek letter d, is the symbol for standard deviation in statistics. Standard deviation levels help us understand how much the process deviates from perfection.

    - http://www.centerfortransforminghealthcare.org/about/rpi.aspx

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Six Sigma

- Six Sigma is also a philosophy of management that emphasizes:
    - The importance of understanding factors critical to quality and customer expectations
    - The measurement and analysis of data
    - The implementation of solutions designed to improve processes to affect the most statistically significant sources of variation
    - **<u>Sustaining these solutions</u>**

Is One Philosophy Enough?

- Each has strengths and weaknesses.
- For example, Lean has the most complete set of approaches but some times you may need the hard financial results of Six Sigma.

VS

- https://hbr.org/2011/03/uniting-the-religions-of-proce

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Process Improvement Tools - PDSA

- The Plan-Do-Study-Act (PDSA) Worksheet is a useful tool for documenting a test of change. The [PDSA cycle](#) is shorthand for testing a change by developing a plan to test the change (Plan), carrying out the test (Do), observing and learning from the consequences (Study), and determining what modifications should be made to the test (**Act**).

- http://www.ihi.org/resources/Pages/Tools/PlanDoStudyActWorksheet.aspx

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Plan

- What change are you testing with the PDSA cycle(s)?

- What do you predict will happen and why?

- Who will be involved in this PDSA? (e.g., one staff member or resident, one shift?). Whenever feasible, it will be helpful to **involve direct care staff**.

- Plan a **small test** of change.

- How long will the change take to implement?

- What resources will they need?

- What data need to be collected?

- https://www.cms.gov/Medicare/Provider-Enrollment-and-Certification/QAPI/downloads/PDSACycledebedits.pdf

Do

- Carry out the test on a small scale.

- Document observations, including any problems and unexpected findings.

- Collect data you identified as needed during the "plan" stage.

- https://www.cms.gov/Medicare/Provider-Enrollment-and-Certification/QAPI/downloads/PDSACycledebedits.pdf

Study

- Study and analyze the data.
- Determine if the change resulted in the expected outcome.
- Were there implementation lessons?
- Summarize what was learned.
- Look for: unintended consequences, surprises, successes, failures.

- https://www.cms.gov/Medicare/Provider-Enrollment-and-Certification/QAPI/downloads/PDSACycledebedits.pdf

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Act

- Adapt – modify the changes and repeat PDSA cycle.
- Adopt – consider expanding the changes in your organization to additional residents, staff, and units.
- Abandon – change your approach and repeat PDSA cycle.

- https://www.cms.gov/Medicare/Provider-Enrollment-and-Certification/QAPI/downloads/PDSACycledebedits.pdf

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Process Improvement Tools - DMAIC

- The Six Sigma DMAIC (Define, Measure, Analyze, Improve, Control) methodology can be thought of as a roadmap for problem solving and product/process improvement.

- https://www.isixsigma.com/new-to-six-sigma/dmaic/six-sigma-dmaic-roadmap/

- Quality and Safety in Radiotherapy, Chapter 6, Pawlicki et al, CRC Press, 2011.

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Define

- Define the project goals and customer (internal and external) deliverables.
  - Define Customers and Requirements (CTQs)
  - Develop Problem Statement, Goals and Benefits
  - Identify Champion, Process Owner and Team
  - Define Resources
  - Evaluate Key Organizational Support
  - Develop Project Plan and Milestones
  - Develop High Level Process Map

  - https://www.isixsigma.com/new-to-six-sigma/dmaic/six-sigma-dmaic-roadmap/

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Measure

- Measure the process to determine current performance; quantify the problem.
  - Define Defect, Opportunity, Unit and Metrics
  - Detailed Process Map of Appropriate Areas
  - Develop Data Collection Plan
  - Validate the Measurement System
  - Collect the Data
  - Begin Developing Y=f(x) Relationship
  - Determine Process Capability and Sigma **<u>Baseline</u>**

  - https://www.isixsigma.com/new-to-six-sigma/dmaic/six-sigma-dmaic-roadmap/

Analyze

- Analyze and determine the root cause(s) of the defects.
    - Define Performance Objectives
    - Identify Value/Non-Value Added Process Steps
    - Identify Sources of Variation
    - Determine Root Cause(s)
    - Determine Vital Few x's, Y=f(x) Relationship

- https://www.isixsigma.com/new-to-six-sigma/dmaic/six-sigma-dmaic-roadmap/

Improve

- Improve the process by eliminating defects
  - Perform Design of Experiments
  - Develop Potential Solutions
  - Define Operating Tolerances of Potential System
  - Assess Failure Modes of Potential Solutions
  - Validate Potential Improvement by Pilot Studies
  - Correct/Re-Evaluate Potential Solution

- https://www.isixsigma.com/new-to-six-sigma/dmaic/six-sigma-dmaic-roadmap/

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Control

- Control future process performance.
  - Define and Validate Monitoring and Control System
  - **Develop Standards and Procedures**
  - Implement Statistical Process Control
  - Determine Process Capability
  - Develop Transfer Plan, Handoff to Process Owner
  - Verify Benefits, Cost Savings/Avoidance, Profit Growth
  - Close Project, Finalize Documentation
  - Communicate to Business, **Celebrate**

- https://www.isixsigma.com/new-to-six-sigma/dmaic/six-sigma-dmaic-roadmap/

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How can you implement process improvement?

- Establish baseline/benchmarks
- Team buy in
- Be relentless
- Accountability
- Sustainability

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Sustainability

Steps to sustaining improvement

1. Do a pilot study
2. Start with staff at the immediate point of care
3. Use early wins to build momentum
4. Motivate frontline staff by addressing what irks them

- https://hbr.org/2016/11/4-steps-to-sustaining-improvement-in-health-care

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Conclusions

1. Be systematic
2. Use more than one philosophy
3. Sustain the improvements

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One final thought

CONTINUOUS IMPROVEMENT IS BETTER THAN DELAYED PERFECTION.

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