Round and Round We Go! (PDSA and A3) Workshop

History of Lean Six Sigma

- James Womack – Principles of Lean production (value the customer, value stream for each product, decrease value flow interruptions, eliminate defects, reduce variation)

W. Edwards Deming:

- An American engineer, statistician, professor, author, lecturer and management consultant
- Inspired and guided spectacular rise of the Japanese industry after World War II and the resurgence of the American automobile industry in the late 1980s
- An unwavering belief in continual improvement that led to transformational theories and teachings

Process: You don’t just go from point A to point B, there are steps in between. Lean uses process mapping to show those steps.

Round and Round we go! Perpetual motion

- Every improvement method has this type of cycle where you see a problem, try something and tweak it if it doesn’t work.
- We do this every day in our own lives (much of the time not thinking about it) – say, you eat something that makes you sick. You might wait a while and eat it again OR eat less of it OR not ever eat it again.
- Socially – we might try using a joke in a social situation. We watch for a reaction and adjust based on that reaction.

PDSA cycle of continuous improvement:

- Deming: change should be purposeful and systematic
- This is the methodology Deming liked to use
- The four quadrants are not equal in terms of time or effort. (Plan will take significantly more time than the other three sections)
- Test and evaluation a solution before implementing it system wide.

PDSA procedure:

- Might also want to look at NIATx training: https://niatx.net/PI101/PDSA/Index.htm

P1: Identify & select a problem

- Starting at the beginning – you need to identify and select a problem to work on. What do we want to accomplish
- Needs to have a scope – a beginning point and end point of the process. Some projects can grow while you work on them. Try to set boundaries/scope. Maybe try creating a project charter.
- Why are we doing this? Why is it important? What is the business case? What is the chief complaint? Pain point? Customer issue? What is the impact of the issue? What is the scope – start and end points?

P2: Define Current State

- You must understand the process before you can improve it.
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- Pictured in slide: SIPOC diagram - useful place to start when looking at a process
- VOC = voice of the customer (obtained through interviews, complaints, surveys, focus groups, etc.)
- Benchmarking – find out what others do – if they ran into the same problem, find out what they did to solve it. What is the standard for the goal?

Box Plots can be vertical or horizontal:

![Example box plot](image)

Process control and capability:

![Process Control and Capability Diagram](image)
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Impact Matrix:

![Action Priority Matrix]

TAKT Time:

![SigmaXL Lean Templates: Takt Time Calculator]

Control Charts:
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P3: Future State

- What specific outcome is required? What is the goal? The aim? State specific targets in measurable or definable terms.

AIMS:
  - NIATx – decrease waiting time, decrease no-shows, increase admissions, increase continuation (retention)
  - LeanOhio – simpler, faster, better, less costly

P4: Analysis

- Pictured in slide: Pareto chart
- Pareto principle – (aka. 80:20 rule) – 80% of the output is the result of 20% of the input (80% of the effects are due to 20% of the causes) Focus on the 20%!
- In Prevention, it’s the same thing – focus on the vital few issues in the pareto chart to take care of the 80%.
- [https://www.youtube.com/watch?v=NJN-Isk_DLU](https://www.youtube.com/watch?v=NJN-Isk_DLU) – TIM U WOOG
- [https://www.youtube.com/watch?v=NNEqyMdKVC0](https://www.youtube.com/watch?v=NNEqyMdKVC0) – voice of the customer and voice of the process to explain control charts.

P5: Select and Plan Solution

- Develop an action plan – create action items, assign to someone and develop reasonable due dates – can use a table, timeline, etc.
- Implement it - Run your test with rigor and consistency for a long enough period to gather enough data to prove or disprove your hypothesis.
- Collect data

D1: Action Plan (here are some examples)
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S1: Expected vs. Actual results:
- This needs to be completed prior to implementing your action plan
- Picture on slide: an expected results table
  - enter the base line metrics in ‘current’, the future expected metrics in ‘future’ – then, benchmark the expected goals along the way – write down expected metrics at 30 days, 60 days and 90 days.
- What are the actual results? What other results do you have? Include charts, graphs and/or pictures
- e.g.: if you’re doing an organizational project, maybe put before and after pictures on this section.
- Charts and graphs – plot expected and actual results on same graph/chart

A1: Follow-up Action: Evaluate the results of your improvement. What went well? What didn’t go so well? Did you achieve your goal? If yes, how will you standardize it? What issues or remaining problems can you anticipate?

A2: Monitoring:

What’s your plan for ensuring solution benefits are maintained? How will you monitor (sustain) the results?
- Standardize and implement system-wide
- Start the cycle again if it is not successful
- Measure continuously for continuous improvement
- Plan for future

Picture on slide: example of a dashboard – updated information regarding work being done. These are important tools for monitoring progress and managing staff

A3: tell your story! Examples:
- Example 2: You can change things up a little – this one has a preliminary plan and some pictures of the work group in the corner
- Example 3: Here’s one recently completed on a brainstorming session that I facilitated to come up with OhioMHAS recommendations for a workgroup that was beginning. The director was able to take this summary and the pictures of the handwritten notes to the group and hand them a one-page document. It was really easy to do. The A3 template gave me a way of summarizing the material even though it was different than the typical one. I grouped things differently and the colored boxes really do not have the significance they do in the regular template.

Review:
- Define the problem, look at existing data, brainstorm solutions, determine root cause, implement a change, define your expected results, study the results by comparing baseline and expected data to actual results. Adjust, adopt or abandon – if you adopt the changes, figure out how to standardize them system-wide and how to ensure changes continue to work well.
- PDSA provides many tools to get you from a problem to a solution
- All that work is summarized in an A3 report – a tool that can be used for any project or report-out.

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