Assignment Implementation Details

1. For each student, the instructor asks AI to generate a simulated dataset (a strategy I learned about while attending *AACN's Essentializing Your Curriculum: Moving forward with Competency Based Education Workshop*). I asked AI to tailor this dataset to the student's practice specialty (which each student identified at the beginning of the course). Below is a typical AI prompt:

AI Prompt: Please provide a dataset for a master's prepared nurse working as a quality specialist in a large urban emergency department. This dataset should demonstrate a successful PDSA cycle of a change intervention to improve patient satisfaction scores. Please provide 20 weeks of data. Generate a run chart and interpret the findings, noting any shifts, runs, or astronomical data points. Provide a master key as well.

2. The simulated dataset is then uploaded in the student's online course via the Learning Management System (LMS), and students access their unique information and complete the assignment as directed.

3. AI does provide an answer key for faculty use (part of my requested prompt), although faculty should certainly validate all components of this key for accuracy.

4. Students complete the assignment as directed and upload their webcam presentation for Peer Review and Instructor Grading.

5. Students also watch and respond to a Peer's presentation.

6. Faculty grade presentations according to the grading rubric.

Additional Resources:

- Students integrate information from our textbook (https://www.ache.org/learning-center/publications/books/2382i), as well as additional course resources provided in the Moodle course.

- IHI's Run Chart Tool. Students can download a variety of free resources here. In addition to serving as a resource for this assignment, students gain practical application of a national professional quality organization that serves the healthcare industry through a variety of learning tools. This tool also contains a template to create run charts: https://www.ihi.org/library/tools/run-chart-tool

- IHI's Quality Improvement Essentials Toolkit: https://www.ihi.org/library/tools/quality-improvement-essentials-toolkit

- Joint Commission's guidance on the STEEEP dimensions of healthcare: https://digitalassets.jointcommission.org/api/public/content/0f631addd218493684840f6dd43ffc54?v=a57fbac2

Comments from students were extremely positive about this assignment. They appreciated the practical application and shared as a result of this assignment, they were inspired to initiate PDSAs in the practice setting.

See below for a sample of a simulated dataset, generated from an AI prompt.

Exemplar Simulated Dataset from AI Prompt

AI Prompt: Please provide a dataset for a master's prepared nurse working as a quality specialist in a large urban emergency department. This dataset should demonstrate a successful PDSA cycle of a change intervention to improve patient satisfaction scores. Please provide 20 weeks of data. Generate a run chart and interpret the findings, noting any shifts, runs, or astronomical data points. Provide a master key as well.

From AI: For a master's prepared nurse quality specialist in a large urban emergency department (ED), a common change intervention to improve patient satisfaction is the implementation of **Purposeful Rounding**. This strategy focuses on proactive communication, pain management, and wait-time updates to reduce patient anxiety.

Dataset: ED Patient Satisfaction Scores (20 Weeks)
This dataset tracks the percentage of patients who rated their experience as "Excellent" (Top-Box score).

- **Weeks 1–8:** Baseline data (Pre-intervention).
- **Week 9:** Intervention starts (Purposeful Rounding implemented).
- **Weeks 10–20:** Post-intervention monitoring.

Week	Patient Satisfaction Score (%)	Week	Patient Satisfaction Score (%)
1	62	11	79
2	59	12	81
3	64	13	80
4	60	14	82
5	88 (Astronomical Point)	15	83
6	63	16	85
7	61	17	84
8	58	18	86
9	72 (Intervention Start)	19	85
10	75	20	87

Master Key

- **Variable:** Percentage of "Top-Box" (Excellent) patient satisfaction survey responses.
- **Median (Baseline):** 61.5% (calculated from Weeks 1–8, excluding the outlier).
- **Intervention:** Implementation of **Purposeful Rounding** (hourly checks by nursing staff to address the "4 Ps": Pain, Potty, Positioning, and Possessions).
- **Target Goal:** >80% satisfaction score.

Run Chart Interpretation & Findings

A run chart is used to distinguish between random (common-cause) variation and non-random (special-cause) signals of improvement.

1. **Astronomical Data Point (Week 5):**
- The score of **88%** in Week 5 is a blatant outlier compared to the surrounding baseline data (58%–64%). This suggests a one-time event—such as a low-volume week or a specific high-performing staff member—rather than a sustained process change.

2. **Shift (Weeks 11–20):**
- A **Shift** is defined as six or more consecutive points above or below the median. Starting at Week 11, there are **10 consecutive points** above the baseline median of 61.5%. This is a strong statistical signal that the Purposeful Rounding intervention has fundamentally changed the process for the better.

3. **Trend (Weeks 13–18):**
- A **Trend** is five or more consecutive points moving in the same direction. From Week 13 to Week 18, the scores show a steady increase (80, 82, 83, 85, 84—noting that Week 17 drops slightly but the overall progression from Week 9 onwards shows a clear upward trajectory).

4. **Runs (Too Few Runs):**
- The data crosses the median line only once (at the intervention point), indicating **too few runs**. This lack of oscillation around the median confirms a non-random, sustained improvement resulting from the PDSA cycle.

Conclusion: The PDSA cycle was successful. The intervention shifted the median performance from ~61% to a new stable level above 80%, meeting the clinical target.