

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.