Run Chart / Visual Data Display Checklist & Coaching Tips

Purpose

Effective communication of data is critical to help teams develop data-driven improvement stories, presentations and publications. Run charts and SPCC, or other data displays ***if well labeled*** can focus teams, can effectively be posted in clinical units and anchor team huddles. Individuals, teams, or peer reviewers can use this rubric as a checklist to systematically evaluate a run chart to assure that the key elements are present. Once a run chart, SPCC, or data display is developed, it should remain standard and require minimal effort to maintain.

7 Essential Run Chart Elements			
Element	**Key Criteria and Rationale**	**Criteria Met (Y/N)**	**Comments**
(1) Title	The title is the headline of your run chart. It should be complete and include the following 5 key elements: • What = Key Outcome Measure • In Whom = Population • Where = Setting (unit / setting) • When = From Baseline date to Current date • Sample Size (n=X) includes how many patients **TIP:** Avoid abbreviations or acronyms that will not be familiar to all.		
(2) Desired Direction	The desired direction is typically a large arrow and placed in the upper right-hand corner. The desired direction is particularly important when sharing data with mixed audiences (clinicians, patients, payers, etc.). It tells the reader, at a glance, whether up or down is the desired direction. It is particularly critical when multiple run charts are presented and when some desired outcomes go up and others go down.		
(3) Y Axis	The **Y axis** is the outcome of interest measured in the chart. Y axis is clearly labeled. There are no abbreviations or acronyms (avoid whenever possible as they will not be familiar to all). The scale of the axis is appropriate and reflects increments that detect changes.		
(4) X Axis	The **x axis** is data over time. The x axis typically includes a series of dates alternatively, it may include a time interval (i.e. week 1, 2, 3, 4). The x axis is clearly labeled, and the reader can see "at a glance" precisely what was measured and when. It is important that data be collected at an interval that will generate enough dots on the run chart to evaluate. For example, yearly and quarterly data are rarely useful in a run chart.		

	Consider breaking these data into monthly, bi-weekly or weekly intervals, dependent on the frequency of the event measured.		
(5) Median	The **median** is the measure of central tendency used in run charts. The run chart has a median and it appears to be appropriately calculated. **TIPS**: *All of the run chart analysis rules require the reader to look at the data points in relation to the median to identify shifts and trends. A chart without a median is simply a line graph and cannot be adequately interpreted.*		
(6) Goal	The **goal line** in a run chart is placed by the team. It serves to motivate and inspire the team and keep them focused on the prize! This run chart communicates a clear goal. **TIPS:** The goal line should be consistent with the goal in their SMART Aim. As teams meet their goals, and demonstrate system improvement, they should be encouraged to increase their goal and indicate this change on the run chart.		
(7) Annotations	**Annotations** provide a snapshot of PDSA indicating key change ideas that were tested. The run chart is annotated with PDSAs using PDSA label and short descriptive titles. Annotating the run chart communicates the temporal relationships between system interventions and how it impacts the data. These should not be misconstrued as "cause and effect" in interpreting the chart. PDSA annotation should be short and crisp (3-4 words).		
Further Recommendations			
Baseline Data	**Baseline data** includes data that are collected early in the project; ideally 6 data points *prior to* interventions.		
Dots & Connectors	**Dots** are a convention in a run chart that conveys data from a group of patients/events/outcomes at each time period represented. The run chart has dots & connectors. Typical run charts will use a black circle or triangle. They also have a **line connecting** the dots to help illustrate the variability in the system.		
Aesthetics			
Clean & Clear	The run chart is clean, clear and pleasing to the eye.		
Font	The font type is simple; the size is readable (not less than size 18 font) and could translate to a slide or poster form.		
Color	Color is used purposefully, consistently, but sparingly so as not to detract from the message.		

Logos	If institutional logos are used, they are typically placed in the upper left hand of the run chart. Logos should be used sparingly and serve the purpose of communicating "where" the work was done.		
Screen Shots	If screen shots are used for the run chart they should be crisp, clear and complete with all axis labels and titles readable.		
Trailing Zeros & Rounding	Remove trailing zeros after a decimal point, as they are a source of error and confusion. Decimal points should be reserved for essential situations; in most cases data can safely be rounded.		
Utility			
Tells the Story	The run chart can stand alone. It is clear, intuitive, and tells the story of this improvement journey. Even a reasonable lay person or non-clinical administrator can understand what was measured, in whom, the PDSA cycle testing conducted and the evolving impact.		
Summative Comments and Words of Encouragement:			
Reviewer Name: Alice Kennedy			

References

Data Visualization – Beyond Run Charts
Edward R. Tufte. The Visual Display of Quantitative Information. Second edition. January 2001.

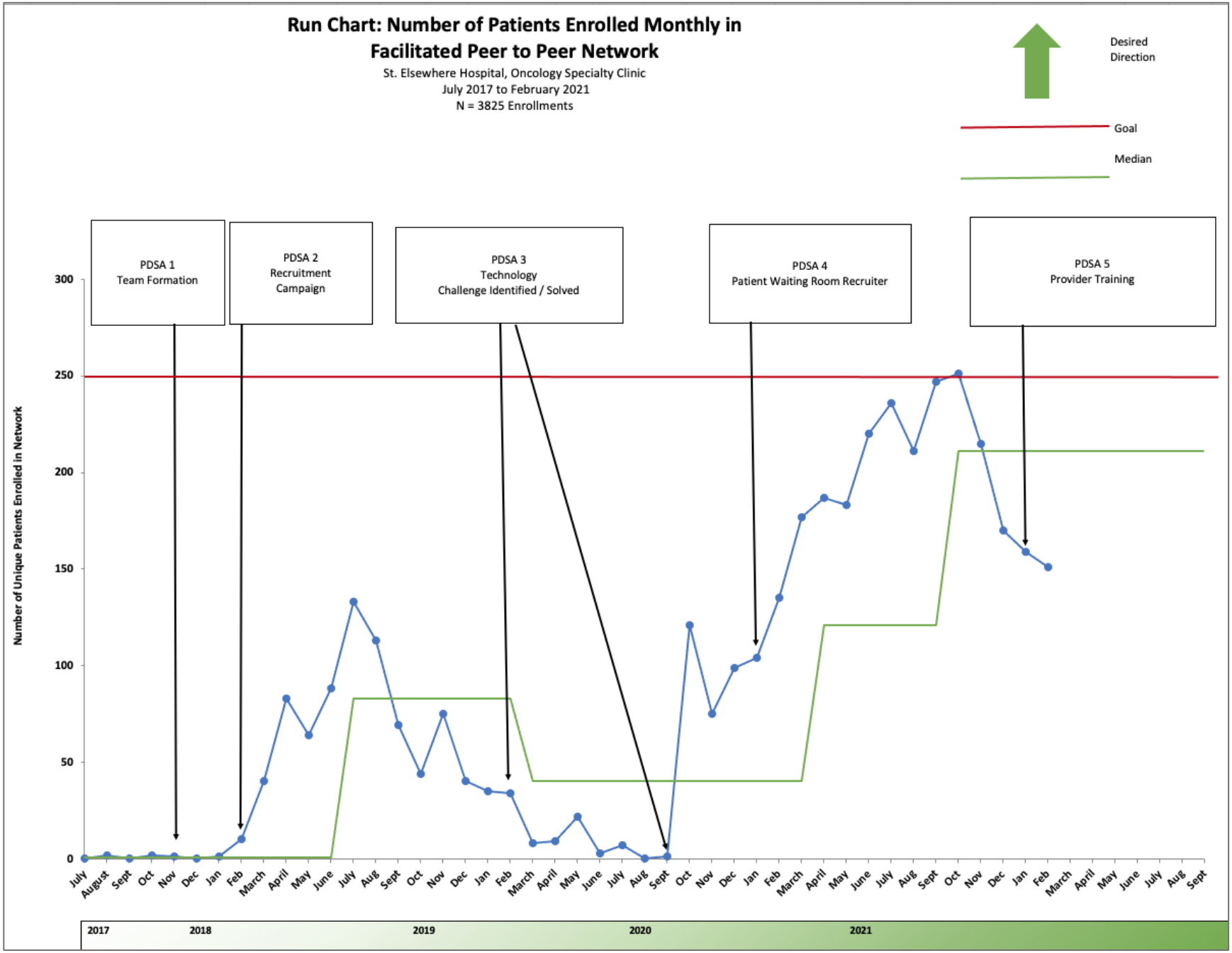
Dashboards and Unique Data Visualization Software
https://www.tableau.com

Ogrinc G, Davies L, Goodman D, Batalden P, Davidoff F, Stevens D. SQUIRE 2.0 (Standards for QUality Improvement Reporting Excellence): revised publication guidelines from a detailed consensus process BMJ Qual Saf. 2016 Dec;25(12):986-992.

Provost LP, Murray SK. The Health Care Data Guide: Learning From Data For Improvement. Jossey-Bass, 2011. Hoboken NJ.

Perla RJ, Provost LP, Murray SK. The run chart: a simple analytical tool for learning from variation in healthcare processes. BMJ Quality & Safety. 2011 Jan;20(1):46-51. DOI: 10.1136/bmjqs.2009.037895.

Example


Run Chart: Number of Patients Enrolled Monthly in Facilitated Peer to Peer Network
St. Elsewhere Hospital, Oncology Specialty Clinic
July 2017 to February 2021
N = 3825 Enrollments
Desired Direction
Goal
Median
PDSA 1 Team Formation
PDSA 2 Recruitment Campaign
PDSA 3 Technology Challenge Identified / Solved
PDSA 4 Patient Waiting Room Recruiter
PDSA 5 Provider Training
Number of Unique Patients Enrolled in Network
300
250
200
150
100
50
0
2017
2018
2019
2020
2021