



QI Essentials Toolkit:

Run Chart

A **run chart** is a graph of data over time. It is a simple and effective tool to depict the current performance of a process and to help you determine whether the changes you are making are leading to improvement.

IHI's QI Essentials Toolkit includes the tools and templates you need to launch and manage a successful improvement project. Each of the nine tools in the toolkit includes a short description, instructions, an example, and a blank template. NOTE: Before filling out the template, first save the file on your computer. Then open and use that version of the tool. Otherwise, your changes will not be saved.

- Cause and Effect Diagram
- Driver Diagram
- Failure Modes and Effects Analysis (FMEA)
- Flowchart
- Histogram
- Pareto Chart
- PDSA Worksheet
- Project Planning Form
- **Run Chart**
- Scatter Diagram

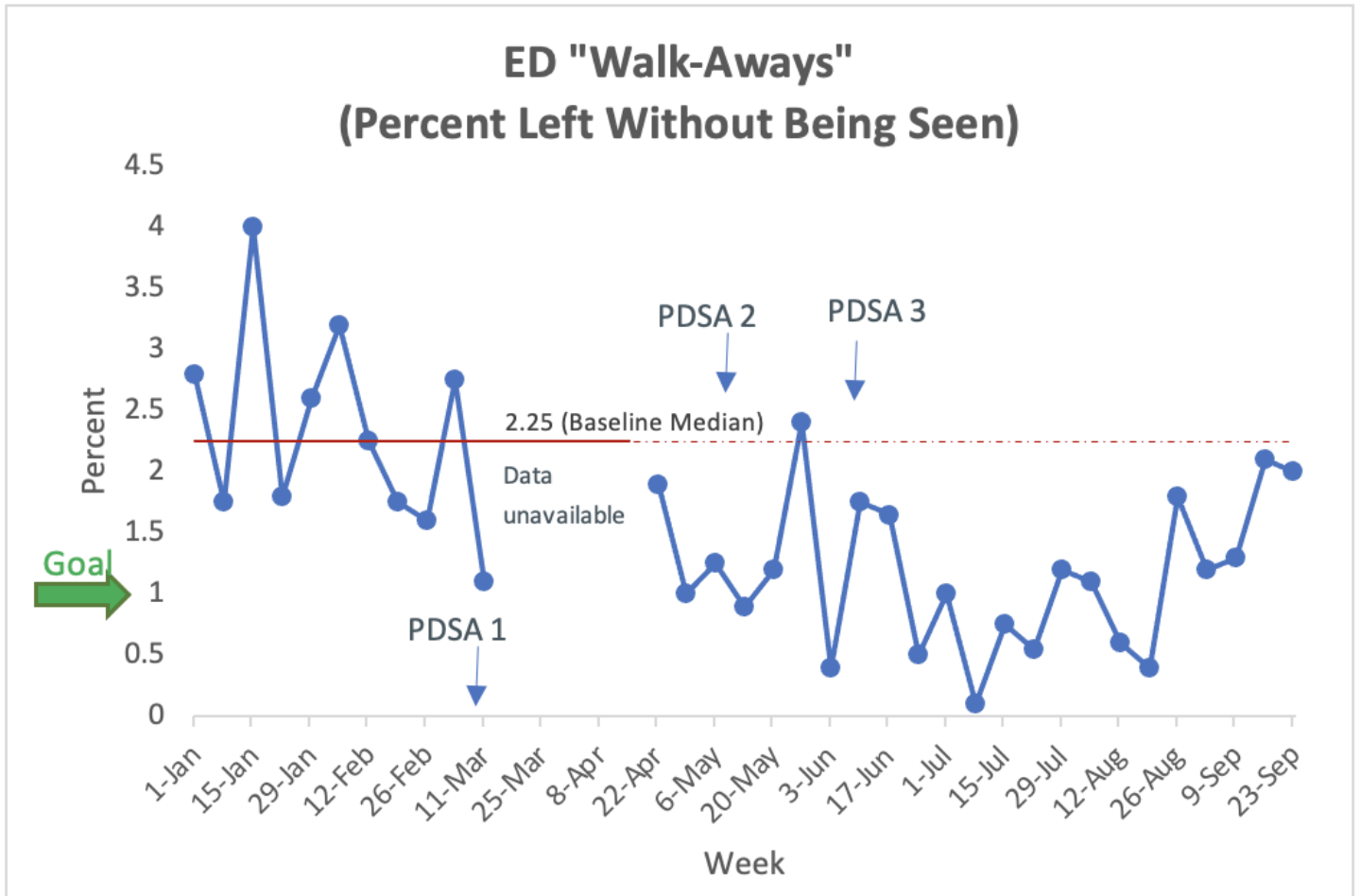
Instructions

- 1) Obtain a set of data points in their natural time sequence.
- 2) Draw the vertical and horizontal axes, leaving room on all sides to title and label the graph.
- 3) Label the vertical (Y) axis with the name of the value being measured (e.g., Percent of Births by C-section, Number of Days to Third Next Available Appointment, etc.).
- 4) Label the horizontal (X) axis with the unit of time or sequence in which the numbers were collected (e.g., April, May, June, etc., or Quarter 1, Quarter 2, etc.).
- 5) Determine the scale of the vertical axis. Generally, the scale should extend from a number about 20 percent larger than the largest value to a number about 20 percent smaller than the smallest value. Label the axis in equal intervals between these two numbers. (Note: do not use the 20% rule if it conflicts with logic; for example, if you have logical limits to your data such as 100% or 0, use those instead.)
- 6) Plot the data values in the sequence in which they occurred.
- 7) Draw lines to connect the data points on the graph.
- 8) If you have 10 or more data points, calculate the median of the plotted numbers, and draw the median line on the graph. (The **median** is the point on the Y axis for which half the data points fall above, and half the data points fall below.)
- 9) Give the chart a useful title
- 10) Annotate the chart, indicating when tests of change were initiated, so that it is easy to see the effect of changes on the measure. Also indicate any external events that may have affected the performance of the process.

For guidance on the analysis of a run chart, see IHI's Robert Lloyd's video:

<http://www.ihl.org/education/IHIOpenSchool/resources/Pages/AudioandVideo/Whiteboard7.aspx>

Example: Run Chart



Template: Run Chart

