

Analysing data

Overview

This section addresses how data should be analysed as part of measurement to demonstrate improvement.

Why is this relevant to Quality Improvement?

Once measures have been set and data collected, analysis is required to begin to answer the question of whether the changes made are resulting in the expected improvements.

The data collection plan section of the [measurement plan framework](#) and the accompanying [data collection plan form](#) set out relevant questions to consider including:

- What analytical tools will be used?
- Who will do the analyses and prepare the charts?
- Who will receive and review the results? How often?
- Has the data collection form been tested?

Descriptive (enumerative) statistics such as, [histograms](#), [bar charts](#) and [box plots](#) can be used to study historical results. However analytical (predictive) statistical methods such as [statistical process control \(SPC\)](#) ([run](#) and [Shewhart control charts](#)) are recommended since they allow us to make predictions about how the process will perform in the future too.

Since some of the analytical techniques (for example **statistical process control**) require specialist expertise it is important early in a project to determine whether such expertise is required, who might have it (or need to acquire it) and to secure their time.

[Display of the data](#) to allow those working on the improvements to interact with it is key. However beautifully analysed data is, it will not support improvement if it is not reviewed. Consideration should be given to who will review and act on the analysed data, and how often this review will take place (as frequently as possible!)