# Statistical Process Control
A Technique for Measuring Variation in a Process

In the mid-1990s health care providers began to use a performance analysis tool that prior to that time was most commonly used in other industries – statistical process control. This statistical analysis tool helps people better understand and manage process variation. One way to improve performance is by reducing or narrowing the amount of variation that occurs. The less the process varies, the more confident you can be about the results. Furthermore, variation is associated with an unstable process, which is more likely to produce undesirable or "surprise" results. A process is said to be "in control" when it operates within acceptable specification limits as displayed on the control chart as the area between the upper and lower control limits.
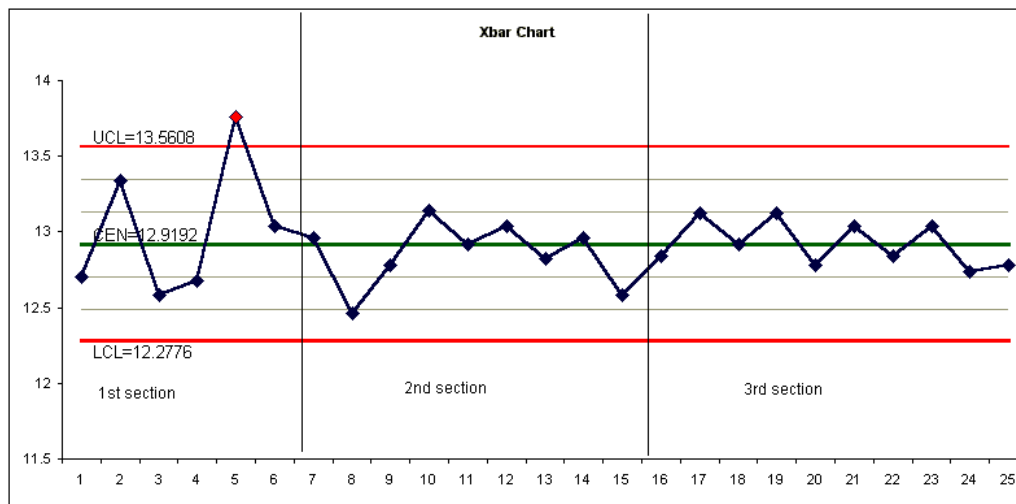
For instance, if the time it takes you to drive to work only varies by a few minutes each day, the process of driving to is considered to be "in control", which means you are unlikely to have too many surprises! Stable health care processes are a good thing also. They help to ensure that we achieve consistent results.

Control charts can be used to assess performance. By plotting performance results on the control chart you can determine if the results fall within an acceptable range of performance as shown in the chart. Data falls within the upper and lower control limits, which have been statistically calculated based on past experience. When the performance results "fall outside" of these control limits, then you know something unusual is happening.

The control limits are estimates of the standard deviation computed from the data and placed at equal distances on both sides of the centerline. The control limits are used to judge the extent of variation in the process. If the process remains consistent, the performance measures are expected to remain within the control limits. The upper control limit (UCL) and the lower control limit (LCL) for different types of control charts are calculated using special formulas. Control chart software will automatically calculate the mean and sigma limits for your data set.

Source: http://thequalityweb.com/control.html