Measurement for Improvement: Supporting Services

Tús Áite do Shábháilteacht Othar
Patient Safety First

Michael Carton[1], Gráinne Cosgrove[1], Gemma Moore[1], Deirdre Carey[1], Elaine Fallon[2], Philip Crowley[2] and Jennifer Martin[1]

[1]Measurement for Improvement Team, Quality Improvement Division, HSE, [2]Quality Improvement Division, HSE

The Measurement for Improvement Team (MIT)

The Measurement for Improvement Team was established in 2014 as part of the Quality Improvement Division, HSE. The team combines expertise in the science of Quality Improvement, statistical analytics and qualitative research with clinical experience, to work in partnership with health and social care services. Our mission is to educate and enable people to collect, interpret and contextualise data, in order to evaluate and drive improvements in quality of care.

Our Vision:

"Quality of care is improved by the routine use of the right information, being measured in the right way to make better decisions"

How we Support Services

1. **Partnership Projects:** We are involved in a number of partnership projects, including projects with the Social Care Division, the Primary Care Division, Hospital Groups and the HSE leadership team. Our partnerhips encompass Quality Profile projects and developing measures that reflect quality of care. [For more information on quality profiles, see www.qualityprofiles.ie]

2. **Measurement Surgery:** We respond to queries on a wide range of issues related to measurement. This includes providing advice on how best to analyse and present data for improvement. If you have a query on an aspect of measurement for improvement, you can request support by contacting us via e-mail: QID-MIT@hse.ie

3. **Developing the Evidence Base:** As we work on projects and respond to requests for support, we develop tools and guidance documents to share with a wider audience. Three such tools are included in this poster:
→ Measurement Prioritisation Checklist
→ Statistical Process Control Chart Templates
→ Designing, Conducting, Analysing and Presenting Survey Data

For more resources and examples of our work, visit:
http://tinyurl.com/QID-MIT

Tool 1: Measurement Prioritisation Checklist

This checklist is a tool designed to assist healthcare professionals at every level when they are developing or choosing measures (single measures or families of measures) to understand the quality of care they provide as professionals and as healthcare organisations. This twelve point checklist is drawn from guidance we have provided to those developing new measures of quality of care.

1 ☐ The measure reflects an important aspect of quality of care
2 ☐ It is measureable
3 ☐ There is evidence that the measure focuses on an area where there is a need for improvement
4 ☐ The measure is aligned to the mission or goals of the organisation
5 ☐ It is possible to act on the measurement findings
6 ☐ The measure is based on data that are good enough to allow us to learn
7 ☐ The measure is collected at a frequency that is suitable for driving and evaluating improvements and is as close to real time as possible
8 ☐ Effort in developing and collecting the measure is minimised
9 ☐ The intended recipient(s) of the information is ready to receive it
10 ☐ There is information available that supports the understanding of the measure, e.g. service user stories, staff feedback
11 ☐ Measures are prioritised that together, give a balanced, comprehensive view of the quality of care
12 ☐ The suite of measures are current and relevant

Initial Screening: In order to proceed with the checklist, the answer to these first two items on the checklist should be 'Yes'. If the answer to either of these first two questions is 'No', consider a different measure.

Why we measure: Checklist items 3 to 5 relate to the motivation behind the measurement, the 'why we measure'.

What we measure: Checklist items 6 to 8 are based on ensuring good data quality.

How we use the measure: Once you have completed checklist items 1-8 on the checklist, you will have identified a number of measures that you are confident give you valuable information on the quality of care. The next step is to bring information together to ensure that they are used to improve the quality of care (checklist items 9-12).

Tool 2: Statistical Process Control (SPC) Chart Template

This MS Excel template is a tool for creating Statistical Process Control or SPC charts. When choosing a measure that reflects the quality of care, you should select a method of analysing and presenting the data. In order to understand the variation in your measure, and to help in improvement efforts, we recommend using Statistical Process Control (SPC) charts.

SPC charts allow you to see the variation in your data over time and to identify special cause variation (this is variation that you would not expect to see by chance alone). SPC charts use statistical calculations to identify control limits so that a set of five rules can be used to interpret the data. The example given here shows real data from healthcare that includes instances where 2 of the five rules have been broken and are therefore examples of special cause variation.

SPC chart: Crude Mortality Rate
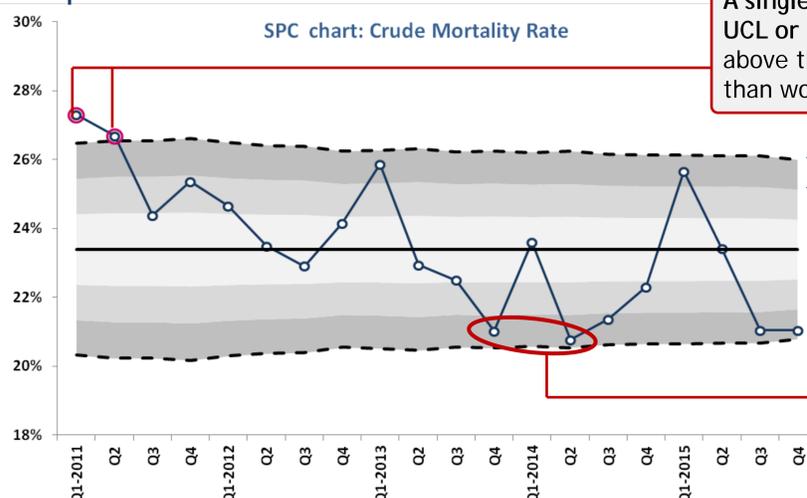
A single data point outside the control limits (above UCL or below LCL): In this chart, 2 data points are above the UCL. Both of these data points are greater than would be expected to occur by chance alone.

UCL: the Upper Control Limit

The outer third

CL: the Centre Line on an SPC chart is the average

LCL: the Lower Control Limit

2 out of 3 points in the outer third: If 2 out of 3 consecutive data points are in the outer third, this is a signal that the variation is more than would be expected to occur by chance alone. This is also referred to as 'special cause variation'.

Tool 3: Designing, Conducting, Analysing and Presenting surveys

This tool is a guidance document that provides advice on designing, conducting, analysing and presenting surveys. We also provide guidance on the appropriate use and value of qualitative measures, and how best to design, conduct, analyse and present qualitative data.

One of the issues addressed in this guidance document is choosing appropriate chart types to display information. In many situations, we have recommended the use of bar charts rather than pie charts. The use of pie charts is common practice, particularly in presenting survey information, but they are typically unsuitable for the purpose of presenting information as the example on the right illustrates.
Examine both the pie charts and bar charts opposite which present the same information. Do you notice:

→ It is difficult to see the differences between the three pie charts
→ The bar charts clearly illustrates three very different patterns between each hospital
→ Notice how much easier and faster it is to understand the patterns in the data using bar charts than it is with pie charts

Note: Some of these difficulties stem from the fact that pie charts do not include a scale and are reliant on colour to identify categories.

Hospital A   Hospital B   Hospital C

Strongly Disagree   Disagree   Neither   Agree   Strongly Agree

For Further Information, Please Contact: michael.carton1@hse.ie