NHS Improvement

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Seven steps to measurement for improvement

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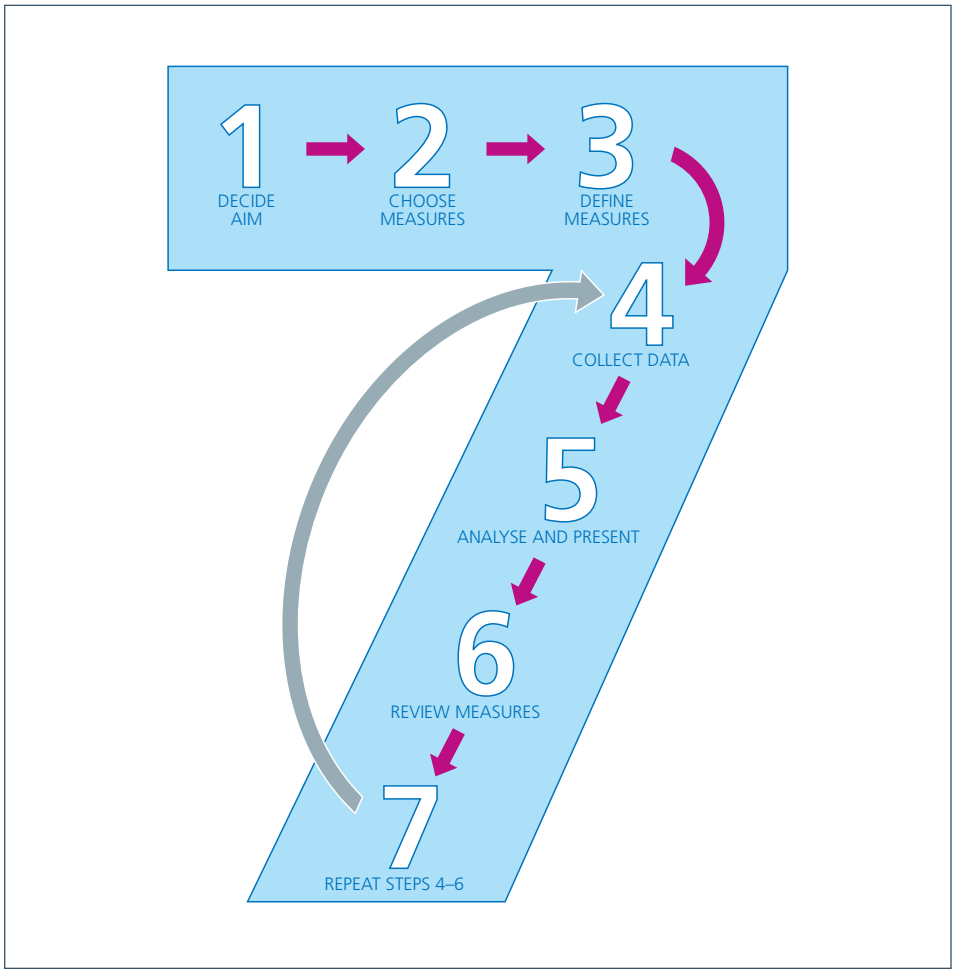
Seven steps to measurement for improvement

What is it?

The seven steps to measurement for improvement model provides a structure and method to develop effective measures in practice. It was designed to complement the Model for Improvement and **PDSA cycle**.

Figure 1: Seven Steps To Measurement For Improvement



Try to make measurement part of the daily routine and where possible use data collection systems and presentations that already exist. This minimises the burden on staff and also maximises the chance of it being done reliably and sustainably.

Measurement for improvement and the application of the seven steps will depend on the stage your quality improvement project is currently at.

When to use it

Before improvement: it is important to work through the seven steps to support defining the aims and the specific objectives. If you can get an understanding of the existing **variation**, select the appropriate measures and establish a clear baseline to assess the impact of the change(s) then these will all be a good start to your quality improvement project.

During improvement: this is where the majority of the team would benefit from using the seven steps as it helps you to answer the question of whether the change is actually an improvement. The approach to measurement complements the **plan, do, study, act (PDSA)** rapid cycle testing of changes and the use of statistically based rules using **statistical process control** to judge whether change is an improvement or not.

Following improvement: reapplying the seven steps will help you to select a few measures that will support the sustainability of the improvement project and for these to be relayed to the team, stakeholders and the board as appropriate. Discussions based on these measures will inform mitigating actions required if the changes are not sustained.

How to use it

1. Decide your aim and objectives

- Relate the quality improvement project to your organisation's/health economy's strategic goals.
- Make the aim patient focused and describe how the change will improve the quality of care received by the patient either through the improvement of services or clinical outcomes.
- Use the SMART (Specific – Measureable – Achievable – Relevant – Time-bound) framework to help you articulate and clarify your aims. (See **developing your aims statement**)
- Review existing measures and the use of both quantitative and qualitative data.
- Conduct analysis prior to starting the improvement by understanding the baseline **variation** and acting on this if required.
- Use **Pareto** analysis to identify priority areas to maximise the impact of changes.

2. Choose your measures

- Make sure you have measures to help you identify whether you are making progress towards/have achieved your aim and objectives.
- Consider gathering and using both quantitative and qualitative data.
- A few good measures are better than lots of 'just in case' measures.

Tools that assist in selecting and identifying important measures are **flow – reducing unnecessary waits**, **process mapping** and/or **driver diagrams**.

Remember to include outcome, process and balancing measures (See **a model for measuring quality care**).

3. Define measures

You will need to identify the data required and the source – is it already collected and if so how? If not you will need to obtain new data. The key is to keep it simple. If it is too complex to define and source the data then it will be difficult to collect reliably and consistently. Measures require an operational definition – a description of what to measure and the procedures to follow in order to collect the data consistently. It needs to be practical and meaningful so that those collecting the data are clear on how to collect it and the reasons behind this. The two key questions are:

a) **Repeatability** – can the individual who created the definition understand it and repeat it?
b) **Reproducibility** – can another individual who is not the creator reproduce the definition that you have created?

The measurement checklist on the next page can help you to work through this step.

Measurement checklist

Figure 2: Part 1 – Measure setup

Measure name:	
Why is it important? (Provides justification and any links to organisation strategy)	
Who owns this measure? (Person responsible for making it happen)	
Measure definition	**What is the definition?** (Spell it out very clearly in words)
	What data items do you need?
	What is the calculation?
	Which patient groups are to be covered? Do you need to stratify? (For example, are there differences by shift, time of day, day of week, severity, etc)
Goal setting	**What is the numeric goal you are setting yourselves?**
	Who is responsible for setting this?
	When will it be achieved by?

Figure 3: Part 2 – Measurement process

Collect	**Is the data available?** (Currently available/available with minor changes/prospective collection needed)
	Who is responsible for data collection?
	What is the process of collection?
Analyse **Calculate measure and present results**	**What is the process for presenting results?** Eg create run chart or bar chart in Excel
	Who is responsible for the analysis?
	How often is the analysis completed?
Review	**Where will decisions be made based on results?**
	Who is responsible for taking action?

4. Collect your data

Prior to collecting data, understand what data already exists. Part two of the measurement checklist helps with this but also consider:

- What data? All patients or a sample?
- Who is collecting and what is their role?
- When is the data collected? Real time or retrospective?
- Where is the data currently located?

- How will the data be collected? What is the process?

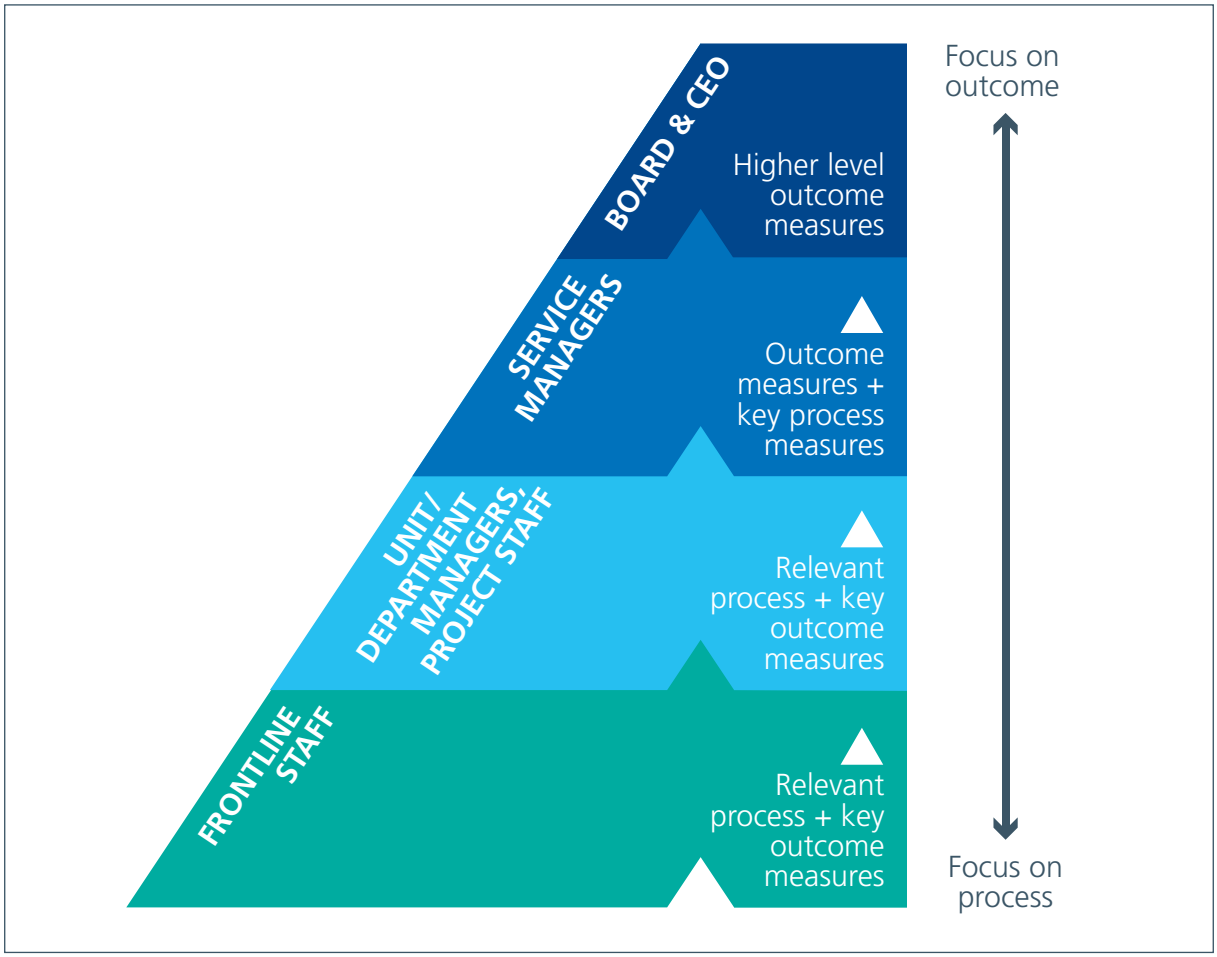
5. Analyse and present your data over time

In order to be able to demonstrate whether a specific change has made an impact, it is essential to plot the measure over time and annotate when changes were introduced against a baseline. Before you start to implement change, understanding the amount and type of variation in the system or process (see **managing variation**) will provide important knowledge about your system and support decision-making about improvement. Interpreting variation over time can be achieved by **run charts** and **statistical process control** charts.

6. Review your data to understand what it is telling you

It is essential that you set aside time to look at what your measures are telling you about your process and the impact your changes have made. Annotating your run charts or statistical process control charts will help to assess whether changes have made an impact. Consider how to communicate your data to your audience to get the outcome required with effective and easy decision-making for busy people. The key aim is to ensure that each layer of staff only receives the information they need to ensure that the changes made are having the desired impact.

Figure 4: The hierarchy of measurement reporting



7. Keep going!

Measurement for improvement is not a one-off exercise: steps four to six need to be repeated frequently. Measures are likely to evolve or change over time as the project develops and so understanding the improvement required, supporting improvement in practice, sustaining the positive impacts and identifying the next area for improvement are all key to measurement for improvement.

Additional resources

Davidge, M *Measurement for Improvement* (a 10-minute video available on YouTube)
www.youtube.com/watch?v=Za1o77jAnbw

Background

The seven steps to measurement for improvement were created by Mike Davidge and his team of measurement experts and analysts at the NHS Institute for Innovation and Improvement. It has since been adopted and refreshed by NHS Elect and is used by many NHS organisations to provide a structure and method for developing effective measures in practice.