

Improvement Cymru Academy Toolkit Guide



**Family of measures &
operational definitions**

What are the Family of Measures?

In quality improvement work, 3 types of measures are used to measure and understand improvement:

1. **Outcome Measures** 2. **Balancing Measures** 3. **Process Measures**

Collectively, these measures are known as the 'Family of Measures'.

Measurement is an essential element of testing and implementing changes.

At the outset of any improvement project baseline data is required, which helps you to understand the system and clarifies the problem that the improvement is focussed on.

Rationale

The Family of Measures is a collective term used to describe 3 measures, providing a well-rounded view of your improvement work and informs you if the changes you are making lead to an improvement.

- The Family of Measures indicates whether the changes are having an impact. Is the project aim (**outcome**) being achieved?
- Learning from tests of change (**process**).
- Assess if the impact on the wider system (**balancing**).

What are the types of measures?

There are three types of measures.

Outcome Measures

Start with your outcome measure. This is directly linked to your aim statement and helps to determine how the system is performing i.e., the end result. This is often the voice of the patient or customer.

Process Measures

Then identify your process measures. These measures reflect the parts of the system that you are changing that will influence your overall improvement project aim. This helps you to understand if the changes are having a positive or negative impact on your project. You are assessing if the parts the system are performing as planned.

Balancing Measures

Finally, your balancing measure will support you to determine how the changes are impacting on the wider system. They are defined at the beginning of your project and are measured and reviewed throughout. When looking at Balancing Measures it's important to consider if they are impacting your project or if they are being impacted throughout your project.

An example of a Family of Measures

Aim – I'm going to lose 2 stones in weight by 31.12.20

Outcome – weight (in stones and pounds) measured every week

Process – carbohydrate intake; record physical activity

Balancing – bad breath due to ketosis (from reduced carbohydrate intake)

Try to include at least one balancing measure.

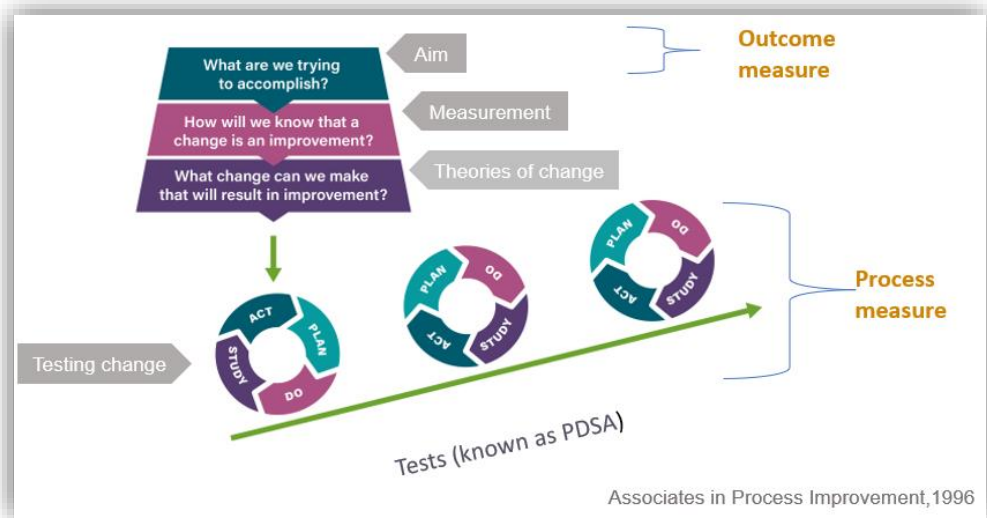
Institute for Healthcare Improvement, 2019

How to use Family of Measures

The following questions should be asked when looking at the measures.

- Outcome measure- How are you getting on?
- Process measure – What are you doing differently?
- Balancing measure- Have you caused a problem elsewhere?

The Model for Improvement



By looking at the Model for Improvement, the outcome measure comes from the first question within the Model for Improvement – what are you trying to achieve? i.e., your aim.

The process measures come from the changes that you test and align to the third question – what changes can we make that will result in improvement? What are you going to measure within your PDSA cycles?

Operational Definitions

An operational definition is a description, in quantifiable terms, of what to measure and the steps to follow to measure it consistently. In simplistic terms, your project must be repeatable using the exact steps you used, if someone else were to replicate it. Think of this as a recipe, where you lay out your ingredients and measures for people to replicate your exact outcome.

It looks at the: What, how, when, and where, something is measured.

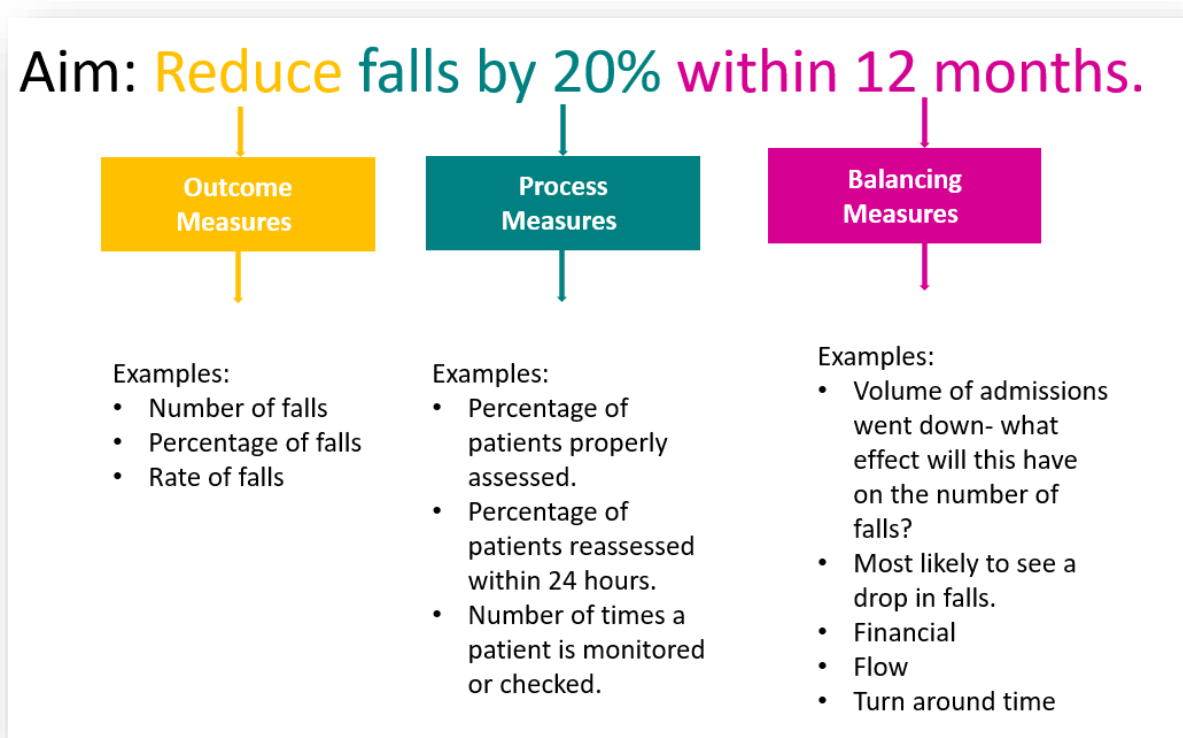
For example: If we wanted to reduce the time patients waited for a pre booked GP appointments, what might we measure? We would then look at choosing what we would measure. In this instance we are choosing to measure waiting times.

For this example, the operational definition could be time in minutes and seconds that a patient with a pre booked appointment spends in waiting room X from walk in through the door, to being called by GP.

An operational definition makes a measure repeatable and reproducible.

- Gives communicable meaning to a concept
- Is clear and unambiguous
- Specifies measurement methods and equipment
- Identifies criteria

Example



Helpful tips

Other Improvement tools that complement the Family of Measures are **Driver Diagrams** and **Run Charts**.

Additional resources

If you are interested learning more about improvement please visit our website <https://phw.nhs.wales/services-and-teams/improvement-cymru/improvement-cymru-academy/> or email us improvementcymruacademy@wales.nhs.uk

Further resources

CLCH-QI- Quality Improvement- Family of Measures by Sid Beech- [online]
Available at: [Bitesize QI - Family of measures - YouTube](#) [Accessed 25th November 2022]

The Science of Improvement: Establishing Measures [online] Available at: [Science of Improvement: Establishing Measures | IHI - Institute for Healthcare Improvement](#)
[Accessed 25th November]

Run Chart Part 4: Family of Measures [online] Available at: [Run Chart Part 4: Family of Measures - YouTube](#) [Accessed 22 November]

Family of Measures

How will we know change is an improvement?



Type of measure	Description
Outcome measure	Measures that relate directly to your aim statement- the result of your change.
Process measure	The measures relating to the actions taken during the tests of change.
Balancing measure	Are there other parts of the system your changes will affect?

Outcome measure	
Process measure	
Balancing measure	