

Improvement Cymru Academy Toolkit Guide



Testing Changes

Introduction

Testing changes are an essential aspect of any improvement project. Before a solution is implemented, it needs to be thoroughly tested.

Before implementing your change, you would have already established a problem and aim statement that support the changes you are about to make. Please see our 'Understanding your Problem' and 'SMART aim' toolkit guide for more information.

Rationale

The rationale behind testing change means a team or organisation can make small measurable improvements, learning from each cycle of change, which informs the next cycle. By implementing one change at a time, you can develop a true understanding of what is happening based on your problem statement and implement changes required to improve your aim.

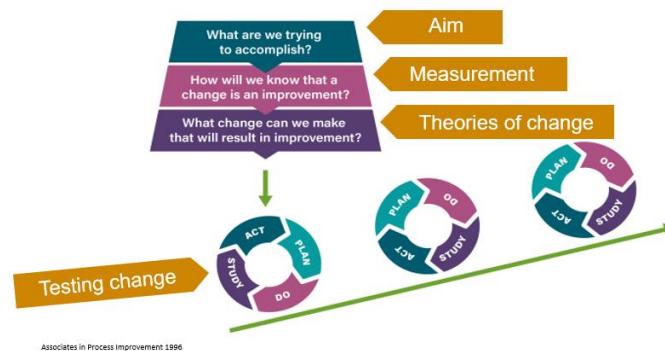
What are tests of change?

In quality improvement work, testing changes supports you to build on what you already know and implement tested ways of working within a process or organisation. Testing changes is part of the Model for Improvement. We use the Plan, Do, Study, Act (PDSA) model for tests of change. Each test includes multiple cycles of change or PDSA cycles.

This is a useful tool based on the principles of improvement science used for action-oriented learning, whereby planning and acting out what you predicted, means you can study it, complete the task and come to a decision, whether to act, adapt or abandon that change.



The Model for Improvement



Steps in the PDSA cycle and how to carry out your tests of change

Plan

First, you need to plan your test; this requires you to:

- Write the objective of your test of change
- Make predictions based on what you think will happen and the reasons why.
- Devise a plan to carry out your test of change.
- Think about who? what? where? when? And what data you need to collect.

Do

Next, it's time to carry out your test of change.

- Carry out your test.
- Record any problems, issues, or anything unexpected that you and your project team observe.
- Start looking at your data.

Study

Then, it's time to analyse your data and study your results.

- Finish analysing your data.
- Compare your data based on your predictions.

- Reflect with your team what has been learnt.

Act

Finally, think about and implement changes based on the observations from your test.

- Decide what changes need to be made based on the following criteria
 - Adapt** – make another change that supports your aim.
 - Abandon** – do not continue to make any further changes as the change was not effective.
 - Adopt** - decide to go ahead and implement that change as it had the biggest impact on your data and project.
- Begin to plan for the next cycle of change i.e. PDSA.

It is important to note that each test of change requires multiple cycles of change i.e. PDSAs

Why carry out tests of change?

There are several reasons why an individual or organisation would carry out tests of change. These could be and not subject to:

- You've noticed a process problem within your organisation or team that you feel could be improved and are interested in carrying out your test.
- You've been given several changes to make, and you wish to make the most effective and efficient improvement towards a desired outcome.
- To improve costs of a service and seek to implement ways to achieve this.
- To improve quality control and reduce waste.

It's important to note that every improvement requires change, but not all changes lead to an improvement.

Example of a test of change (PDSA cycle)

Problem: Patient are spending 25 minutes in the waiting area, causing overcrowding and poor conduct towards staff.

Aim: To reduce the time patients spend in the waiting area from 25 minutes to 10 minutes by 31st December.

GP Surgery: Reduce waiting times for appointments

- **Plan:** Write letter to patients encouraging them to arrive no earlier than 5 minutes before their appointment to reduce the waiting time of their appointment.
- **Do:** Count the number of patients who arrive 5 minutes before their appointment when they check in at GP reception.
- **Study:** Within one month of sending out the letter, only 40% of patients were arriving more than 5 minutes earlier than their appointment time, resulting in fewer people in the waiting area and more people being seen by the GP closer to their appointment time.
- **Act:** Adapt this process and review in one month's time with monitoring of the data to see if the percentage has increased or remained the same.



Helpful tips

- Relationships play a huge role when making changes and it's important to work with people who are willing to work with you. These people own the improvement project and are accountable and committed to your project.
- Choose changes that are straight forward to implement resulting in the greatest impact, that you have a level of control over.
- Take time to think about the results of the changes made, key questions include- what did we originally think would happen compared to what has happened? Was there anything that occurred that was a surprise? What was the greatest outcome about this change?

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/>. We also have a range of other toolkit guides that compliment this resource, or email us improvementcymruacademy@wales.nhs.uk

Further resources

Quality Improvement Zone [online] Available at: [Testing change ideas | Turas | Learn \(nhs.scot\)](#) [Accessed 27 February 2023]

Science of Improvement: Testing Changes [online] Available at: [Science of Improvement: Testing Changes | IHI - Institute for Healthcare Improvement](#) [Accessed 27 February 2023]

