

Quality Improvement Toolkit



West of England
Academic Health
Science Network

Contents

Improvement tools	03
1. Identifying improvement opportunities	04
2. Project Charter	07
3. Driver diagrams	08
4. Improvement methods	10
5. Measuring improvement	15
6. Sustaining improvement	17

Improvement tools

The aim of this toolkit is to support colleagues working in healthcare organisations across the West of England to improve the quality, efficiency and productivity of patient care they provide. The material combines useful guidance and material available about Quality Improvement in one place.

It aims to provide a clear explanation about some of the common approaches used to improve quality and their underlying principles in a simple, understandable way.

We'd like to thank everyone who has contributed to the toolkit. In particular, we'd like to give special thanks to East London Foundation Trust which has provided many of the resources from their website.

For further information about the toolkit and how the West of England Academic Health Science Network can help, contact: qi@weahsn.net

All of the resources and videos in this toolkit are also available at www.weahsn.net/qitoolkit

1. Identifying improvement opportunities

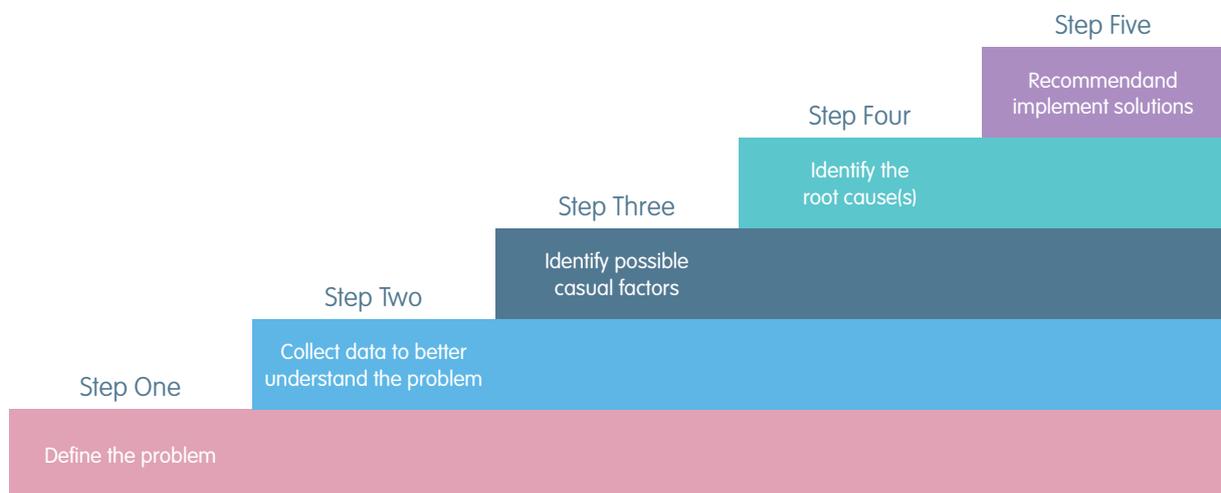
The first step in making an improvement is to identify where a problem exists, maybe from a clinical audit review, or there is an opportunity to enhance patient care. Here are some tools that can help you to fully understand why a problem has occurred and what might need to be done to remedy it.

Root Cause Analysis

When incidents happen, it is important that lessons are learned to prevent the same incident occurring elsewhere. Root Cause Analysis (RCA) investigation is a well-recognised way of doing this. It is used to identify areas for change and to develop recommendations which deliver safer care for your patients. It seeks to:

- Determine what happened
- Understand why it happened
- How to reduce the likelihood that it will happen again

The RCA process has five steps:

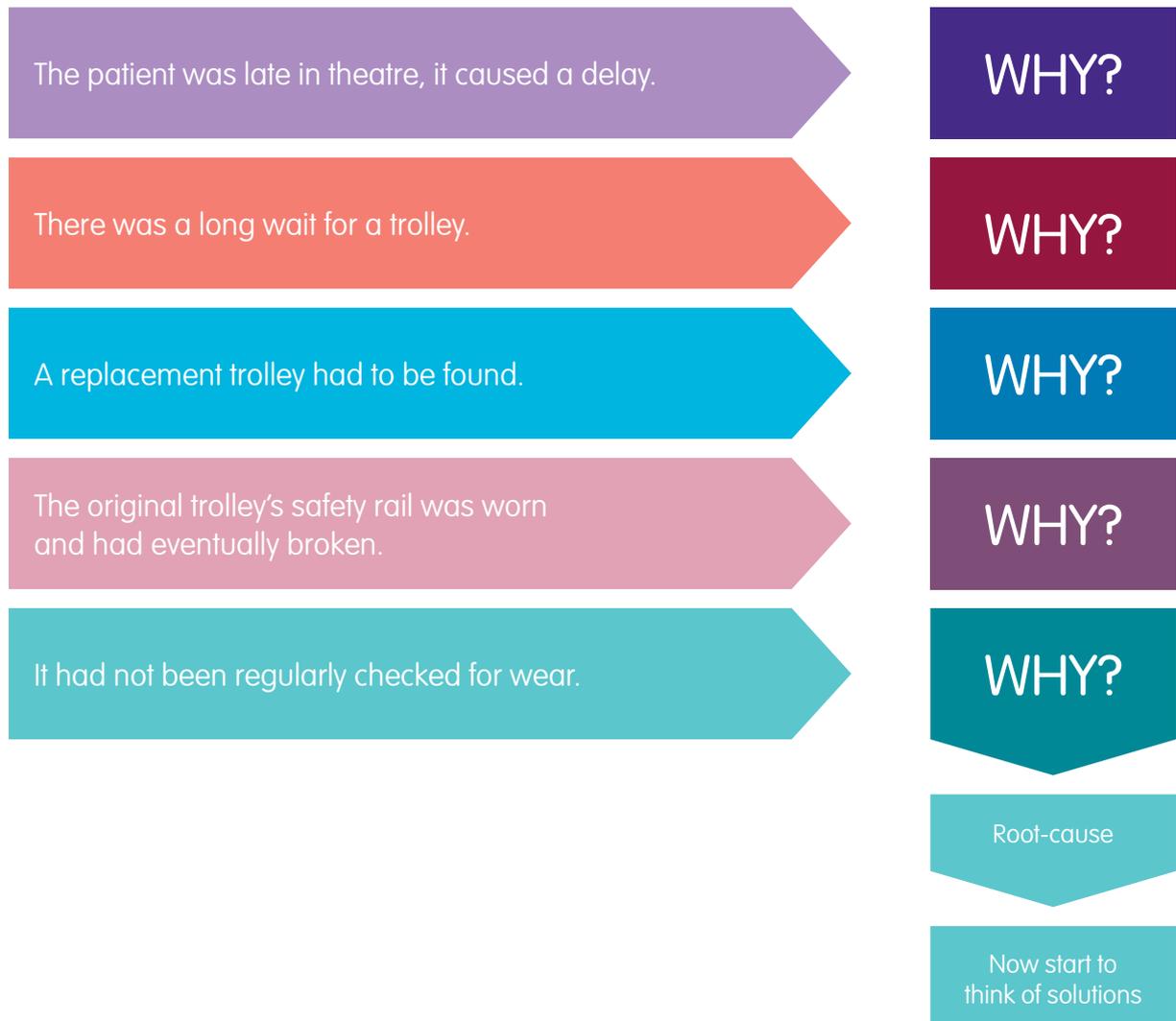


RCA using Five Whys

By asking the question 'why?' you can peel away the layers of an issue to get to its root cause. It can uncover the root cause of a problem that has occurred during a project or programme. It not only uncovers glitches in the delivery, but also issues with organisational or team processes.

Reasons for a problem can often lead into another question. You may need to ask why more than five times to get to the origin of a problem. Remember to:

- Avoid assumptions and encourage your team to keep drilling down to the real root cause of a problem
- Focus your resources in the correct areas and make sure the right action is taken
- Ground your answers in fact, avoiding listing events that might have happened



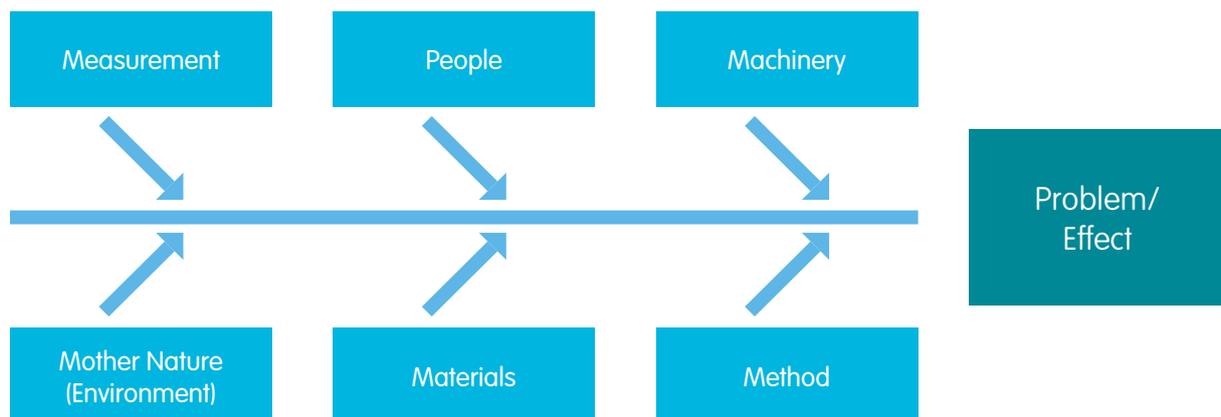
Five Whys in action - a practical example

Root cause - there is no equipment maintenance schedule. Setting up a proper maintenance schedule helps ensure that patients should never again be late due to faulty equipment. This reduces delays and improves flow. If you simply repair the trolley or do a one-off safety rail check, the problem may happen again sometime in the future.

The five whys technique uses counter-measures, rather than solutions. This makes sure that action(s) prevent the problem arising again, rather than a solution which just deals with the situation.

RCA using the cause and effect diagram

This tool will help you to spot, sort and display possible causes of a specific problem. The Fishbone diagram illustrates the relationship between the outcome and the factors that influence it.



The problem is placed at the head of the fish, then major categories or process steps are placed at the end of the bones. Be flexible with the categories chosen. To identify causes under each category, review existing data and consider, 'Why is this happening?'

Repeat this approach for each category until you drill down to the root cause.

Hints and tips

- If you're not sure the root cause of the problem is correctly identified, use our more in-depth Root Cause Analysis, download at www.weahsn.net/qitoolkit
- Involve team members to capture collective knowledge about the problem, ensuring the focus is on root causes, not symptoms;
- Read more information about the Cause and Effect Diagram, download at www.weahsn.net/qitoolkit
- Watch the short video clip about the Cause and Effect Diagram at <https://www.youtube.com/watch?v=387chd8p54c&list=PLD0CB3B29BC1E2502>
We have tools to help you gather information on our website www.weahsn.net/qitoolkit, such as:
 - How to use flow diagrams for quality improvement
 - Generating ideas using tried and tested creative thinking techniques
 - Using Force Field analysis to identify and consider forces that support and hinder change
 - The Force Field analysis template
- Also, there are videos available about:
 - How to use flow charts effectively
 - <https://www.youtube.com/watch?v=tq7dQVaTbcc>
 - <https://www.youtube.com/watch?v=Ys537do7rds>
 - More information about Force Field analysis:
 - <https://www.youtube.com/watch?v=oEclloCF0Uo&list=PLD0CB3B29BC1E2502>

2. Project Charter

Before starting a Quality Improvement project, it may help to complete a Project Charter to scope and plan your work. This contains some simple questions to support you get the project underway and maintain focus, such as 'Why is this an important issue to tackle? What's the business case?'

A copy of the QI Project Charter is available online at www.weahsn.net/qitoolkit

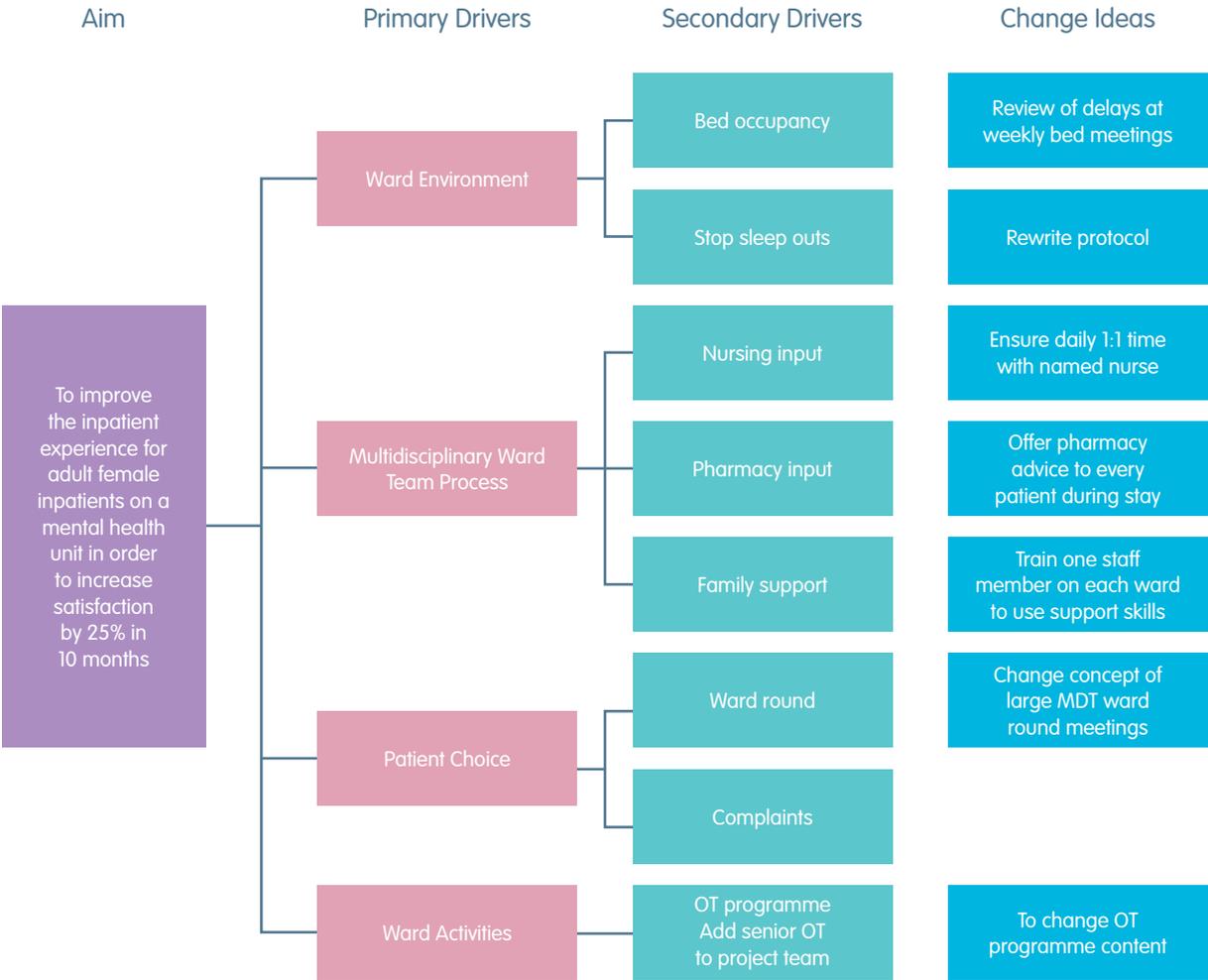
Hints and tips

- Consider involving a patient representative to understand the patient voice in the planning and delivery of your project – find out more at www.weahsn.net/patients
- Watch the short video clips giving guidance about developing a framework of thought and action for any leader wanting to transform and create a thriving organisation.
 - <https://www.youtube.com/watch?v=xKv--YA8XJE>
 - <https://www.youtube.com/watch?v=STTwZGNvLmM>

3. Driver diagrams

The Kings Fund describe a driver diagram as a “Visual model that highlights all the factors that influence the patient’s experience, to enable you to structure your thinking about how to affect the experience. It helps you to identify existing improvement initiatives that could influence the experience, and to select current and future priorities for action.”

An example produced by East London Foundation Trust is below. The team developed an improvement strategy to achieve the aim of improving the inpatient experience for adult female inpatients on a mental health unit in order to increase satisfaction by 25% in 10 months.



Four steps for a successful Driver Diagram

1. Set out what you want to achieve in your Aim. Make it specific and measurable. It should not simply be ‘to reduce’ or ‘to improve’. It should be meaningful to staff, patients, and families. A key benefit of a well-written Aim is that it can help you to identify your outcome Measure (see Section 3 – Model for Improvement).
2. Identify the big topics and important areas that need to be addressed to achieve your aim in the Primary Drivers, such as Patient Choice. Well-written Primary Drivers help you identify your process measures which review the reliability of processes that might have an impact on the aim of the project.

3. Consider which activities can positively influence the Primary Drivers. In the case of Patient Choice it might be complaints or a ward round. These are Secondary Drivers, which can influence more than one Primary Driver and help you identify relevant Change Ideas.
4. Think very carefully about your Change Ideas. They should have an effect on at least one Secondary Driver and help achieve your aim. These are the important changes that will go into your project plan.

Hints and tips

- Prioritise your change ideas. Consider issues such as which of the ideas would have the biggest impact on the aim and which of them is the easiest to do. Then rank the ideas by impact and effort.
- A copy of the Driver Diagram template is available online at www.weahsn.net/qitoolkit
- Watch the short video clip at <https://www.youtube.com/watch?v=A2491BJcyXA>

4. Improvement methods

Depending on the nature of the improvement you are seeking to implement, there are a number of different improvement methodologies you can use either individually or together:

Model for Improvement

After using driver diagrams to discover what you want to change, the model for improvement is the approach which will help you identify, carry out and evaluate the changes you make.

There are three initial questions every project should ask when developing their model.

1. What are we trying to accomplish?

- Identify an area for improvement and use this to establish a specific aim – remember to be as SMART as possible (specific, measurable, achievable, realistic, and time-bound). For example, for a patient falls reduction project, 'The aim is to reduce patient falls on Ward A by 50% within 6 months.'
- Determine what or who will be affected by this change
- Give your project a deadline

2. How will we know that a change is an improvement?

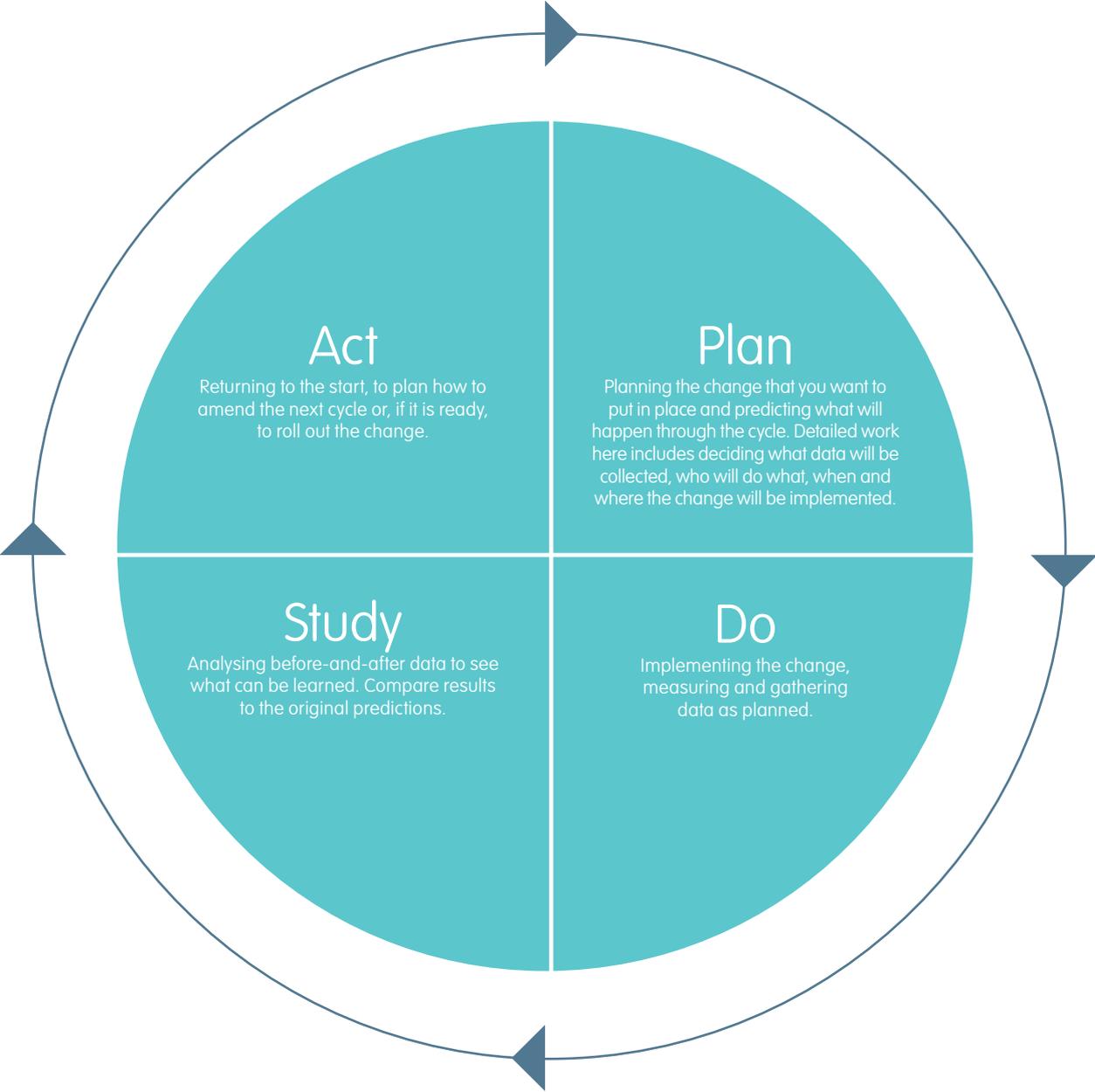
- There are three types of measurement:
 - Outcome measures, e.g. number of patient falls occurring
 - Process measures, e.g. reviewing the reliability of processes that may have an impact on the aim
 - Balance measures to check unintended consequences, e.g. for a falls reduction project staffing levels may be a useful balance measure.

3. What changes can we make that will result in improvement?

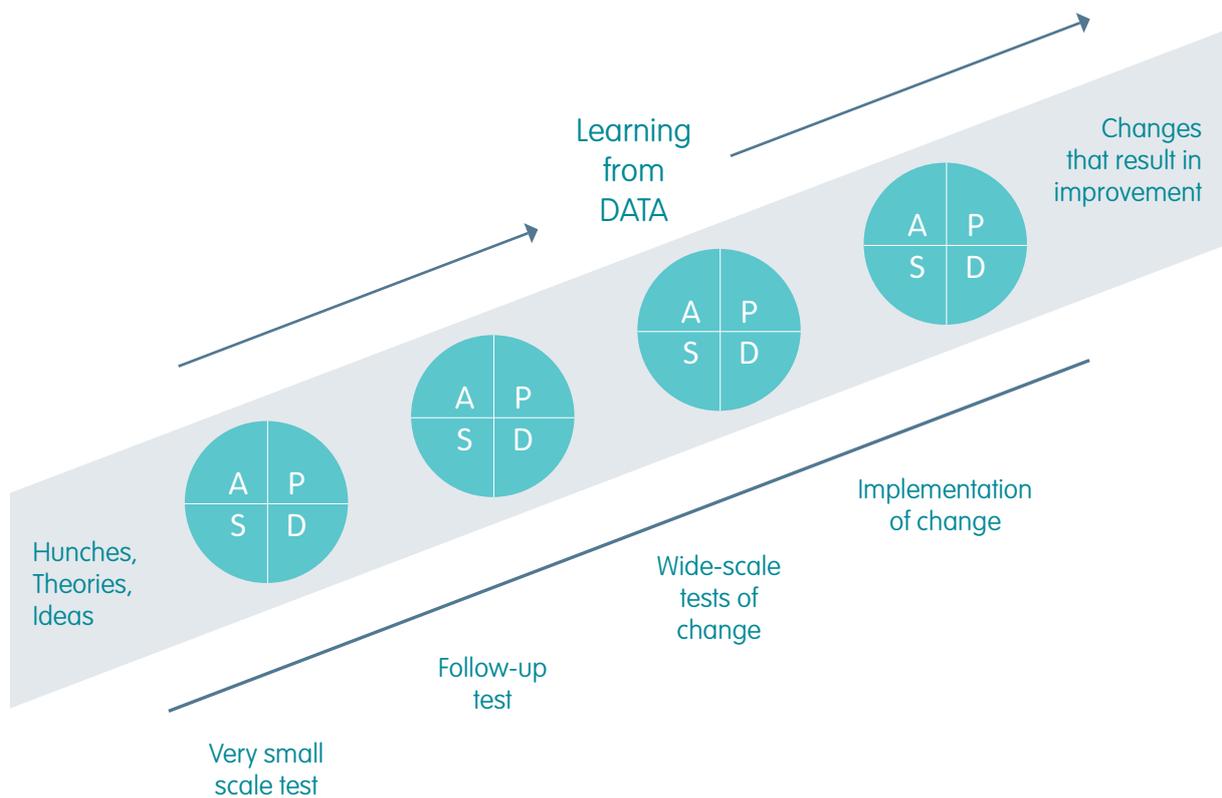
- Get creative to develop ideas about how the improvement will be driven. Potential changes can be discovered using the Driver Diagram explained in Section 2.
- Remember, not all changes will result in an improvement. One change on its own may not achieve your aims.

Now time to PDSA

Plan, Do, Study, and Act is an effective method that helps teams plan the actions for their model, test it on a small scale, and review before deciding how to continue. It comprises four steps:



Using PDSA cycles are a fantastic way of taking ideas, trying them in practice, learning what works and what doesn't to help you achieve success. You can broaden the scale of the test or adjust your ideas through more than one PDSA cycle – it may take a few before the idea starts to work reliably.



Hints and tips

- Work through your project charter to help you answer the three initial questions
- A copy of the PDSA form is available online at www.weahsn.net/qitoolkit
- Watch the short video clips that demonstrate the Model for Improvement theory and a practical example of how to use it:
 - <https://www.youtube.com/watch?v=SCYghxtiolY>
 - <https://www.youtube.com/watch?v=6MIUqdulNwQ>
- Watch the short video clips that demonstrate the PDSA process in action:
 - <https://www.youtube.com/watch?v=-ceS9Ta820>
 - https://www.youtube.com/watch?v=eYoJxjmv_QI

Experience based co-design

This is an approach that enables staff and patients (or other service users) to work in partnership to co-design services and/or care pathways.

In depth interviewing, observations and group discussions identify key touch points – aspects of the service that are emotionally significant.

A short film is created from the patient interviews, which is shown to staff so they can see how patients experience the service. Staff and patients are then brought together to review the findings and to work in small groups to identify and implement activities that will improve the service or the care pathway.

Throughout the process the focus is on experience and emotions rather than attitudes and opinions – using storytelling to identify opportunities for improvement.

Hints and tips

- The Kings Fund has developed a toolkit to support effective use of this approach. This is at <http://www.kingsfund.org.uk/projects/ebcd>

Lean/Six Sigma

Lean and Six Sigma are two methods that can be used together to provide a co-ordinated improvement approach and are effective tools to solve problems.

- Lean focuses on the breadth of a process, aiming to improve end-to-end ‘flow’ and reduce waste within a process.
- Six Sigma focuses on achieving an in-depth understanding of parts of a process in order to reduce variance and defects.

There are similarities:

- They have exactly the same objective: continuous business process improvement.
- Follow a structured approach to identify the root causes of a business problem and find the optimal solution to avoid recurrence of the problem.

And differences:

- Six Sigma improves the capability of steps that do add value whereas Lean focuses on eliminating waste.
- Six Sigma is a data driven methodology, whereas Lean relies more on value stream maps and subsequent analysis.

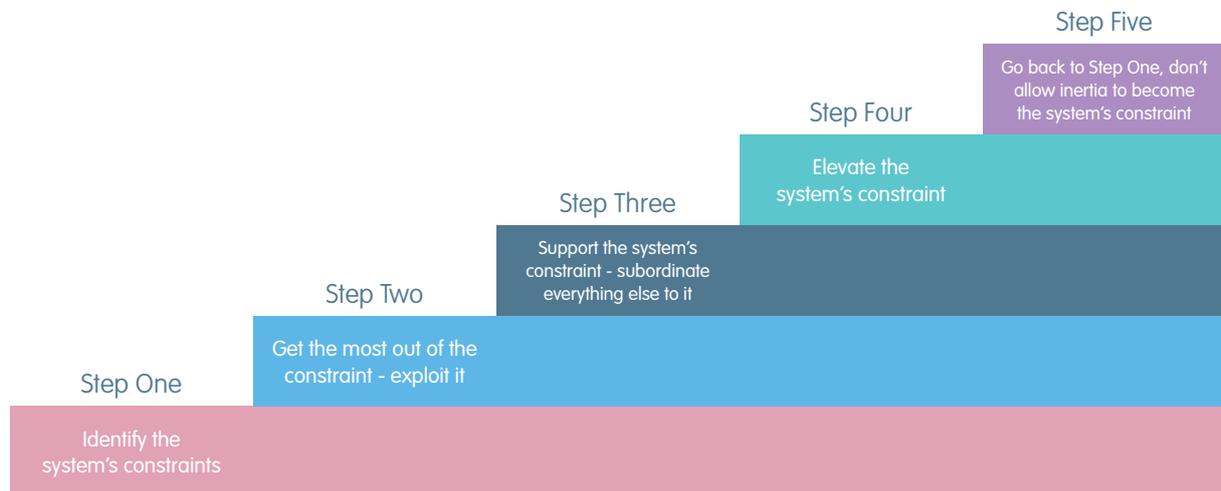
Hints and tips

- You can find out more about these methods, download at www.weahsn.net/qitoolkit

Theory of constraints

Theory of Constraints is an approach that shows how you can manage bottlenecks and their associated constraints. A bottleneck determines the pace at which the whole process can work, whilst the constraint is the bit of kit or resource that causes the bottleneck.

By identifying where the constraints are, it is possible to focus improvement effort and day to day operational management in order to maintain and increase throughput. The Theory of constraints identifies a five step process to achieve continuous flow and improve throughput:



Hints and tips

- Read the section on Theory of Constraints in the NHS Improving Quality document, 'Quality improvement theory and practice in healthcare' which can be found at www.weahsn.net/qitoolkit

Whichever method(s) you use, it is vital you have a:

- Clear aim of what you are seeking to achieve and a realistic timeframe to achieve it
- A process to measure the outputs of your improvement project so you know whether the change has been an improvement.

5. Measuring Improvement

Collecting data will be an important element of your project, and here are some tools that will help you analyse the data.

Using data for improvement

To demonstrate the effectiveness of your project, data should be collected to show whether the changes being tested are resulting in improvements.

Small amounts of data can be collected regularly and compiled into 'run charts', or 'control charts' to look at review the impact of a change over a period of time. For example:

Run Chart – Infection rate vs Target



Run charts or control charts focus on variation. There is an important distinction between the two.

- A run chart acts a bit like a camcorder, showing you every up and down.
- Snapshot audits are more like a camera, taking a picture of what things look like at just one point in time.

To show that things have improved you need to show the things that have changed, and that the change is not a one off. You must consider whether the change has been sustained. Run or control charts allow you to see if this has happened.

Statistical Process Control (SPC)

This approach helps you to understand the scale of a problem, gathering information and identifying possible causes. It examines the difference between:

- Natural variation – also known as common cause variation
- Controlled variation – also known as special cause variation

Control charts are used that display boundaries for acceptable variation in a process. The data collected over time shows whether a process is within control limits in order to detect poor or deteriorating performance and target where improvements are needed.

Hints and tips

- For more complex data collection, greater planning is needed. A copy of the PDSA form is available online at www.weahsn.net/qitoolkit
- Watch the short video clip offering a comparison between static and dynamic displays of data https://www.youtube.com/watch?v=UJqvC_uo63M
- Watch the short video clips that give more information about run charts:
 - <https://www.youtube.com/watch?v=YQd1QoMHYwU>
 - <https://www.youtube.com/watch?v=8e38RCU8-uA>
- Watch the short video clips that provide you with a more detailed explanation about control charts:
 - <https://www.youtube.com/watch?v=9kmbIj5zRtA>
 - <https://www.youtube.com/watch?v=lQ3woMr822U>
- Read more about SPC from the former NHS Institute for Innovation and Improvement: http://www.institute.nhs.uk/quality_and_service_improvement_tools/quality_and_service_%20improvement_tools/statistical_process_control.html
- We have tools to help you gather information on our website www.weahsn.net/qitoolkit, such as:
 - Pareto charts
 - Frequency plots
 - Scatter plots
- Also there is a video available about how to use Pareto charts effectively:
 - <https://www.youtube.com/watch?v=zbDRH2ASyqQ&list=PLD0CB3B29BC1E2502>

6. Sustaining improvement

The NHS Improving Quality Sustainability model provides a comprehensive guide to how to sustain the improvements you've made.

http://www.institute.nhs.uk/sustainability_model/general/welcome_to_sustainability.html