

The Handbook of Quality and Service Improvement Tools







Foreword

If you are involved in treating patients, managing and/or improving health services or managing or training those that do, you will understand the importance of providing the **best care possible** for all our patients.

Great progress has been made in **improving service standards** and access and in reducing waiting times, but there is still some way to go to ensure consistently high standards of patient care across the NHS.

It is clear that we need to ensure we are **getting it right first time**, which means better care and better value through the reduction of waste and errors and the prioritisation of effective treatments. Quality, innovation, productivity and prevention (QIPP) is the mechanism through which we can achieve this.

QIPP is about creating an environment in which change and **improvement can flourish**; it is about **leading differently** and in a way that fosters a **culture of innovation**; and it is about providing staff with the **tools, techniques and support** that will enable them to **take ownership of improving quality** of care.

The Handbook of Quality and Service Improvement Tools from the NHS Institute brings together a collection of proven tools, theories and techniques to help NHS staff design and implement quality improvement projects that do not compromise on the quality and safety of patient care but rather **enhance the patient experience**.

It is not an exhaustive list and you will find plenty more information on the help and support available from the NHS Institute on our website at www.institute.nhs.uk. But I do hope you will find this handbook useful as you start your journey towards improving the quality, productivity and efficiency of services you provide.

Julia RA Taylor

NHS Institute for Innovation and Improvement



Introduction

The Handbook of Quality and Service Improvement Tools brings together into a single resource 75 proven tools, theories and techniques for quality and service improvement.

It is part of the *Fundamentals for Quality Improvement* from the NHS Institute for Innovation and Improvement – a suite of publications that will assist you in finding innovative ways to improve the quality, productivity and efficiency of patient care you provide. You can find out more about all of these publications at www.institute.nhs.uk/fundamentals.

All of the tools, theories and techniques featured in the handbook and more are available online in our searchable library, available free of charge to the NHS in England at www.institute.nhs.uk/qualitytools.

You may find it useful to use the handbook in conjunction with the *Step-by-Step Guide to Tackling your Challenges*, which maps some of the key challenges you have told us the health service is facing against a range of quality and improvement tools and products developed by the NHS Institute to support the NHS in improving the quality, productivity and efficiency of services. This guide is available in hard copy and as an interactive PDF via the website at www.institute.nhs.uk/challenges.

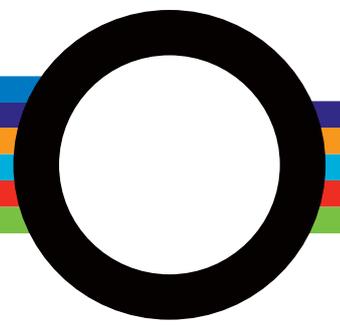
How to use The Handbook of Quality and Service Improvement Tools

The handbook is divided into the following two sections:

Section one: Project management guide

This step-by-step guide provides a suggested framework that will enable you to systematically progress through a quality and service improvement project.

Each organisation is different and you may find that the stages described here are slightly different to the project management guide you are familiar with. However, there should be enough similarities between the two for you to match the stages outlined in this guide against those in your preferred framework for project management.



Section two: Quality and service improvement tools

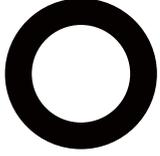
In this section you will find a comprehensive set of tools, theories and techniques that will enable you to expand your knowledge of tried-and-tested tools and techniques for improving quality and productivity.

The tools have been grouped under the following headings, which relate to the type of task you may be addressing:

1. Project management
2. Identifying problems
3. Stakeholder and user involvement
4. Mapping the process
5. Measurement for improvement
6. Demand and capacity management
7. Thinking creatively
8. Human dimensions of change.

Text highlighted in **blue** throughout the handbook indicates additional tools that will help you with your service improvement efforts. An A-Z index can be found at the back of the handbook to help you quickly find any additional tools you may need for the task in hand.

The Handbook for Quality and Service Improvement Tools will be helpful for both clinical and operational staff involved in quality and service improvement/transformation.



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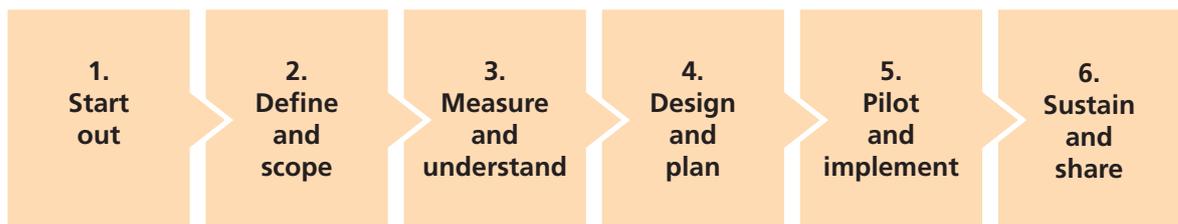
Section One

Project Management Guide

This six-stage project management guide provides a framework for service improvement within the NHS. We suggest you read through the whole project guide before you undertake any actions relating to the stages. This will help you get an overall picture of what all the stages involve. It is important to realise that this guide is a suggested framework. Each project is different and you may find that you do things slightly different for different projects.

Section A provides an outline of the stages and section B covers them in more detail.

Section A. Outline of the six stages

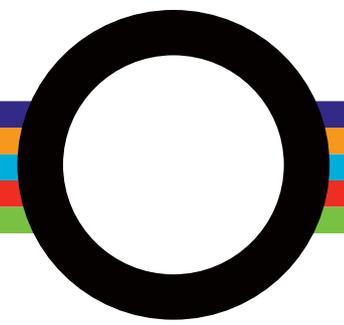


One important fact to consider is that there are certain critical elements for success which should be continually considered throughout the life of the project. These are:

- i – Stakeholder engagement and involvement
- ii – Sustainability
- iii – Measurement
- iv – Risk and issues management
- v – Project documentation and gateway criteria

Section B. Detail of the six stages

The tables that follow show the different elements involved in each of the six project management stages and relevant tools for each of these stages. Tools in **blue** are contained within this handbook. Tools in **red** can be accessed via the project management guide stored in the online library of quality and service improvement tools (www.institute.nhs.uk/qualitytools - under 'P' in the A-Z of tools). Tools and products in **black** can be found using the search engine on the NHS Institute's homepage (www.institute.nhs.uk).



Stage 1: Start out

Aim of this stage: To establish a rationale for any improvement work and obtain support for this work from an appropriate sponsor.

KEY STEPS	RELEVANT TOOLS
<p>1.1 Establish the service that is to be improved or the particular area that is to be addressed. This may be identified by an individual, a team member, manager or from organisational strategy that has been informed by patient requirements.</p>	<ul style="list-style-type: none"> Identifying frustrating problems
<p>1.2 Identify a small number of key individuals, both at a senior and operational level, who it would be worthwhile sounding out regarding this area of focus. If you are unsure who these individuals are, you can use stakeholder analysis to help you identify them.</p> <p>This will help begin to establish the merits of focusing on this area and identify any important considerations there may be. These individuals may form part of your project structure in future stages such as the project team and project board.</p>	<ul style="list-style-type: none"> Listening – importance of this skill Stakeholder and user involvement – an overview Stakeholder analysis
<p>1.3 Gather ideas from staff and patients on how this particular service may be improved. Establish which ideas to take forward.</p>	<ul style="list-style-type: none"> Using an affinity diagram Thinking differently
<p>1.4 It may be worth testing whether the current idea could be improved or stretched further, to make an even bigger difference.</p>	<ul style="list-style-type: none"> Making a bigger difference Commissioning to make a bigger difference
<p>1.5 To help get support for your improvement project, it is beneficial to make clear how the aims of the improvement work are aligned to the overall organisational aims. The potential short-term and long-term benefits should be articulated.</p>	<ul style="list-style-type: none"> Four columns: link your project to the organisation's aims Benefits realisation Methodology for measuring benefits
<p>1.6 To give focus for the improvement you should set measurable targets for the aims that you want to achieve.</p>	<ul style="list-style-type: none"> Performance management and balanced scorecard Good indicators guide

Tools in **blue** – in this guide (see A-Z index at back of handbook)

Tools in **red** – in the online project management guide at www.institute.nhs.uk/qualitytools (under 'P' in A-Z)

Tools in **black** – accessible via www.institute.nhs.uk and using the search facility on the homepage

KEY STEPS

RELEVANT TOOLS

1.7 The next step is to capture the information from the previous steps into a simple document. This can help gain support from an appropriate sponsor and initiate the project to start to use resources.

Depending on the complexity of the project, this document can take different forms. For example, you may use a project charter. More technical and complex projects may use a project initiation document.

For this guide we will use the project charter as the example that we follow. It is recommended that the project charter holds all of the key information on a single A3/A4 sheet.

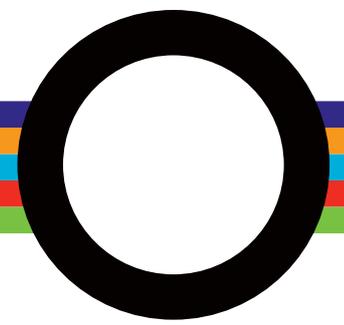
At this stage you may only be able to complete certain elements of the project charter, such as overall aims. You may decide to have a go at completing some other sections, but these will need to be refined in future stages as it becomes clearer what the project will actually entail.

1.8 Obtain agreement from the project sponsor that the project can move to the next stage.

In future stages, a more formal gateway process will be implemented.

- [Project charter template](#)
- [Project initiation document template](#)
- Improvement Leaders' Guide – Delivering Improvement: Making it happen
- Steps to Success – Primary Care

- [Gateway criteria example](#)



Stage 2: Define and scope

Aim of this stage: To ensure the project starts in the right areas and to develop a project structure to provide a solid foundation.

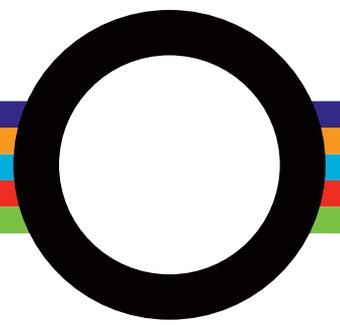
KEY STEPS	RELEVANT TOOLS
<p>2.1 Undertake root cause analysis to help identify the underlying issues that are creating the current situation that is to be improved.</p> <p>To achieve this, map the current situation and use appropriate diagnostic tools to determine what the root causes of the situation are. You will need to involve the stakeholders who provide and use the services that are being improved.</p>	<ul style="list-style-type: none">• Mapping the process• Stakeholder and user involvement• Identifying problems• Cause and effect (fishbone)• Root cause analysis using five whys• Using an affinity diagram
<p>2.2 Gathering patient experiences via feedback, complaints, PALS issues, serious incidents and patient and staff satisfaction surveys are all excellent sources to help identify underlying causes.</p>	<ul style="list-style-type: none">• Patient perspectives• Staff perceptions
<p>2.3 Once the true underlying issues have been defined, you can establish more detailed objectives that need to be achieved. This can help determine what is in scope and ensure that the project focuses on what have been deemed the most important things to tackle. All other issues are out of scope.</p> <p>In the work area you may outline the aims and objectives of the project that have now been determined on display boards. This can help engage everyone with what the improvement project is trying to achieve.</p>	<ul style="list-style-type: none">• Scope your project

Tools in **blue** – in this guide (see A-Z index at back of handbook)

Tools in **red** – in the online project management guide at www.institute.nhs.uk/qualitytools (under 'P' in A-Z)

Tools in **black** – accessible via www.institute.nhs.uk and using the search facility on the homepage

KEY STEPS	RELEVANT TOOLS
<p>2.4 Identify key individuals who are critical to achieving the aims and objectives defined. This can help obtain the required buy-in for project success. Again stakeholder analysis can help determine who these key individuals are.</p> <p>Obtain agreement from a small number of these key individuals to act as a project board for the progress of the work. This board should include the project sponsor and the project manager.</p> <p>Stakeholder analysis has the added benefit of displaying those individuals who will need to have a level of communication regarding the proposed change and at what detail. If there are many people to communicate with, you need to develop a simple plan of how and when you will update them.</p>	<ul style="list-style-type: none"> • Stakeholder and user involvement – an overview • Stakeholder analysis • Communications matrix
<p>2.5 At this stage you may want to consider the stakeholders who may challenge the change you propose.</p> <p>It is important to remember that often a challenge to change can be positive. You should be considerate of potential reactions to the change that the improvement work may lead to. Use tools and techniques to help reduce the risk of this impacting negatively on the project.</p>	<ul style="list-style-type: none"> • Resistance to change – understanding it • Commitment, enrolment and compliance • Force field analysis • Bullet proofing • Listening – importance of this skill
<p>2.6 For small and simple projects you may simply pull together individuals with the skills you require and decide among yourselves progression through the stages.</p> <p>For larger projects, you may need a more extensive project structure. This would include an identified project team who are going to do the work. The structure would also include a separate project board who would sign off progression from stage to stage. Membership of this board should be small in number and include the project sponsor.</p>	<ul style="list-style-type: none"> • Improvement Leaders’ Guide – Delivering Improvement: Making it Happen • Steps to Success – Primary Care



KEY STEPS	RELEVANT TOOLS
<p>2.7 Establish a way of identifying all the issues and potential stumbling blocks (risks) that may occur. Develop risk and issue logs to record these. Brainstorming is excellent for identifying potential risks.</p> <p>A 'lessons learned' log should also be created. The logs should be updated throughout the life of the project.</p> <p>The NHS Institute's Sustainability Model and Guide is excellent for establishing the areas that need to be strengthened (and how) in order for a project to be successfully sustained.</p>	<ul style="list-style-type: none">• Risk log template• Issue log template• Lessons learned log template• Brainstorming• Sustainability Model and Guide
<p>2.8 Update the project charter throughout this stage with new and updated information.</p> <p>Only key issues and risks should be reflected in the single A3/A4 sheet that you are using for the project charter. The information in the logs is mainly for members of the project team who require greater detail.</p>	<ul style="list-style-type: none">• Project charter template
<p>2.9 It is important at the end of this stage that gateway criteria are established for the remaining stages. The gateway criteria will help to ensure that the project only moves to each stage if certain criteria are met. This avoids projects carrying on unnecessarily and wasting resources. Ensure the criteria for this stage are actually met as well.</p>	<ul style="list-style-type: none">• Gateway review

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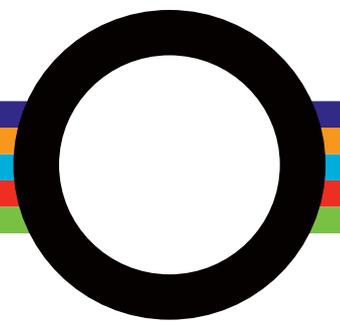
Tools in **red** – in the online project management guide at www.institute.nhs.uk/qualitytools (under 'P' in A-Z)

Tools in **black** – accessible via www.institute.nhs.uk and using the search facility on the homepage

Stage 3: Measure and understand

Aim of this stage: To measure the current situation and understand the level of change required in these measures to achieve the defined aims and objectives.

KEY STEPS	RELEVANT TOOLS
<p>3.1 Having established the aims and objectives of the project and the underlying issues that need to be addressed, it is important that baseline measures are established for these.</p> <p>Using these measures as indicators is the only way of tracking whether the project is making progress.</p> <p>With an indication of where you are currently and where you need to get to, you can understand and determine how far the baseline measures need to move to achieve the desired aims and objectives.</p>	<ul style="list-style-type: none"> • Measurement for improvement • Good Indicators Guide • Measures record sheet
<p>3.2 If the project is large and complex and there are many measures to consider, you may focus on those that will have the biggest impact. Using the Pareto principle is an effective way of prioritising your areas for improvement.</p>	<ul style="list-style-type: none"> • Pareto
<p>3.3 Use tools and techniques such as Statistical Process Control to analyse the data that you have collected for the indicators defined.</p> <p>It is important that measurements for these indicators are recorded and analysed throughout the project and beyond to ensure that changes being implemented are having a positive effect.</p>	<ul style="list-style-type: none"> • Statistical Process Control (SPC)
<p>3.4 Update risk log, issues log, lessons learned log, project charter etc. throughout this stage with new and updated information.</p> <p>Only the key measures should be reflected in the single A3/A4 sheet that you are using for the project charter. The other measures are recorded for the project team to use in their analysis.</p>	<ul style="list-style-type: none"> • Project charter template
<p>3.5 With the help of the project board, confirm that the gateway criteria for this stage have been met to allow project to move forward to next stage.</p>	<ul style="list-style-type: none"> • Gateway review



Stage 4: Design and plan

Aim of this stage: To design and plan the activities required to achieve the objectives that have been established.

KEY STEPS	RELEVANT TOOLS
<p>4.1 Having established start and end points of the project, it is a good idea to break this down into tasks that are clearly identifiable.</p> <p>The use of creative thinking at this stage may help to discover innovative ways of delivering these tasks and making the design or redesign improvements that are required.</p> <p>For each task, produce a list of all the activities required to deliver it. This is often called an action plan.</p>	<ul style="list-style-type: none">• Brainstorming• Six Thinking Hats®• Using an affinity diagram• Thinking differently• Making a bigger difference• Commissioning to make a bigger difference• Action planning
<p>4.2 Having produced an action plan, the next stage is to put some target dates against these actions and decide who undertakes them. This provides a scheduled plan.</p> <p>It may be helpful to convert this into a format that all participants can easily see. This should clearly state key milestones for the project. This may be done in a Word document or, if you prefer, the plan can be captured in an electronic format - for example, in project management software. Using software like this may make the plan appear complicated so make sure you have a simple visual version for those who do not need to see the detail. You may be able to fit a copy of this simple version in the single sheet project charter.</p> <p>Share this scheduled plan with the individuals involved in the project on a regular basis to ensure the project stays on track.</p>	<ul style="list-style-type: none">• Responsibility charting• Master schedule template
<p>4.3 Update risk log, issues log, lessons learned log, project charter etc. throughout this stage with new and updated information.</p>	<ul style="list-style-type: none">• Project charter template
<p>4.4 With the help of your project board, confirm that the gateway criteria for this stage have been met to allow project to move forward to next stage.</p>	<ul style="list-style-type: none">• Gateway review

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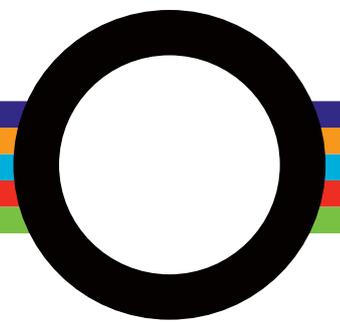
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Stage 5: Pilot and implement

Aim of this stage: To test out proposed changes via pilots before the changes are fully implemented.

KEY STEPS	RELEVANT TOOLS
<p>5.1 You may want to test the robustness of the changes you propose by opening them up to challenge by relevant stakeholders before they are implemented. This can help to decrease the likelihood of issues occurring when you move into implementation.</p> <p>It is useful to build rapport and trust with those affected by the change to help the implementation go smoothly.</p>	<ul style="list-style-type: none">• Bullet proofing• Building trust• Role redesign
<p>5.2 Once you implement the early steps, make sure you test them to ensure they are doing what they should do. This process can be done in continuous cycles (PDSA – plan, do, study, act) until the whole change is implemented. Doing implementation in the form of pilots can help this approach.</p>	<ul style="list-style-type: none">• Plan, do, study, act (PDSA)



KEY STEPS	RELEVANT TOOLS
<p>5.3 When moving into the stage of full implementation, ensure all testing has been successfully carried out. Record any observed issues in the issues log. If results are positive, the project can continue in the same way. If results are not positive, however, consult the project board or sponsor about potential corrective action. This is an iterative process that should continue until full implementation has been achieved.</p> <p>An example of some popular areas that are tackled by improvement projects are:</p> <ul style="list-style-type: none">- Flow- Demand and capacity- Managing bottlenecks- Reducing variation- Lean- Care pathways- Day surgery- Reducing cancelled operations- Did not attends - DNAs- Waiting list validation- Discharge planning- Length of stay	<ul style="list-style-type: none">• Issue log template
<p>5.4 Review the gateway criteria for this stage and ensure all aspects are complete before moving to the next stage. Remember to update the project plans, logs and project charter during this stage.</p>	<ul style="list-style-type: none">• Project charter template• Gateway review

Tools in **blue** – in this guide (see A-Z index at back of handbook)

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Tools in **black** – accessible via www.institute.nhs.uk and using the search facility on the homepage

Stage 6: Sustain and share

Aim of this stage: To ensure that changes which have been implemented are sustained and are shared to aid learning.

KEY STEPS	RELEVANT TOOLS
6.1 Once the change is fully implemented, monitor it to ensure the original aims and benefits are continuing to be realised - with new ways of working continuing rather than the old ways being reverted back to.	<ul style="list-style-type: none"> • Sustaining momentum • Reviving a stalled effort • Human dimensions of change
6.2 Produce a brief highlight report for those involved. If you have a project team, you may do this at agreed regular intervals. This is really useful in keeping the project team updated on progress.	<ul style="list-style-type: none"> • Highlight report template
6.3 To help the sustainability of the project, redo the Sustainability Model and Guide exercise.	<ul style="list-style-type: none"> • Sustainability Model and Guide
6.4 Once the project is complete, share the learning - both good and bad - with colleagues and other departments. This helps the organisation make the most out of learning from the experience of completed projects.	<ul style="list-style-type: none"> • Human dimensions of change
6.5 A key element of this step is to carry out a post project review to ascertain what went well and to celebrate achievements. At the same time, objectively analyse the things that did not go well without apportioning individual blame. All of this learning should be reflected in the lessons learned log to aid future projects.	<ul style="list-style-type: none"> • Lessons learned log template
6.6 Review the gateway criteria established for this stage and ensure all aspects are complete before closing the project. Remember to update the project logs, project plans and project charter during the stage.	<ul style="list-style-type: none"> • Project charter template • Gateway review

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Section Two

- 1** Project management
- 2** Identifying problems
- 3** Stakeholder and user involvement
- 4** Mapping the process
- 5** Measurement for improvement
- 6** Demand and capacity management
- 7** Thinking creatively
- 8** Human dimensions of change

Project management



Project management – an overview

Purpose

Project management and associated tools should be uppermost in your thoughts from the start to the end of a project. Regardless of the project management approach you use, it can be enhanced with the use of the tools in this section.

When to use it

The service improvement project guide in section one of this handbook provides an indication of the various stages these tools would be relevant for.

The stages are as follows:

- | | |
|---------------------------|------------------------|
| 1. Start out | 4. Design and plan |
| 2. Define and scope | 5. Pilot and implement |
| 3. Measure and understand | 6. Sustain and share |

How to use it

The tools can supplement your existing project approach or be used with the project approach detailed in section one of this handbook.

The specific details for each of the tools and techniques can be found in the relevant sub-sections:

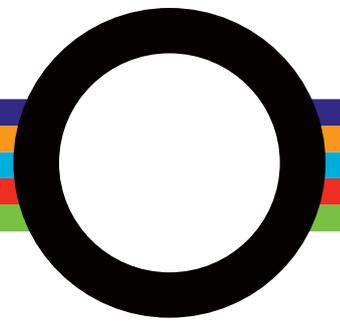
- | | |
|--|---|
| 1.1 Scope your project | 1.5 Responsibility charting |
| 1.2 Four columns: link your project to the organisation's aims | 1.6 Sustaining momentum |
| 1.3 Benefits realisation | 1.7 Reviving a stalled effort |
| 1.4 Action planning | 1.8 Learning from change |

Additional Resources

Websites

www.institute.nhs.uk – for the *Thinking Differently Resource Guide* and *Commissioning to Make a Bigger Difference*

www.ogc.gov.uk – select the PRINCE2 section



1

1.1 Scope your project

Purpose

This is a simple way for your team to define the scope of a project by identifying what will be included and what will be excluded. It helps to ensure that the entire team is focused in the same direction and understands the scope of the project.

When to use it

If an improvement is to succeed, everybody involved needs to understand the agreed scope of the project so they can focus specifically on the task in hand.

How to use it

Start by drawing up a table like the one in the examples section.

- The project lead describes their view of the project.
- For each of the categories (What? When? Where? How?) the team discusses and records the agreed definitions of what is within and what is out of scope.
- Record any actions required in the final column.
- Seek agreement of the scope with the project sponsor and stakeholders.

Examples

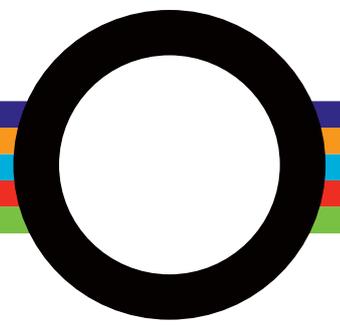
Parents of children with glue ear have commented that there is very little information about the condition and associated procedures. Staff in the ENT department came up with the following table so everyone was clear about what was in and what was out of the scope.

	IS IN SCOPE	IS NOT IN SCOPE	ACTION
WHAT	Information for parents of children with glue ear.	Information for professionals. Not information for the child. Detailed description of the surgical treatments for glue ear e.g. myringotomy and grommet insertion. Information about other conditions or procedures for parents. Not in other forms of communication (additional languages or Braille). A follow on project will look at this.	Hold a review after we complete this project to find out if we need to develop information for the child. Hold a review after we complete this project.
WHERE	This hospital, this department.	Other hospitals in the region.	Check for good material elsewhere.
WHEN	Use information and diagrams from 2004 onwards.	Sources older than 2004.	Check what information is available.
WHO	Paediatric ENT staff, communication staff, some parents of children with glue ear.	All ENT staff.	Recruit to seek their views about the content of information.
SCOPE	Information for parents of children with glue ear. No diversions.		

Your team may find it useful to refer to the results throughout the project so that extra activities outside the scope are not picked up (scope creep). This enables you to focus limited resources specifically on the current problem.

What next?

Revisit the service improvement project guide to understand what is involved after scoping your project.



1

1.2 Four columns: link your project to the organisation's aims

Purpose

Linking your project aims to your organisation's aims is a key strategy for ensuring a successful project. Using the four column matrix can help you do this. It will allow you to multiply the benefits from a single project right across the hospital. As this approach has a strong focus on numbers, you may need some input from your information team and accounts department.

Evidence suggests that senior leadership and clinical buy-in is instrumental in health service improvement. The ability to sell what you are doing and describe potential outcomes – for example improved clinical outcomes – will help achieve this.

When to use it

Four columns should be used at the start of your project once you have established your aims.

How to use it

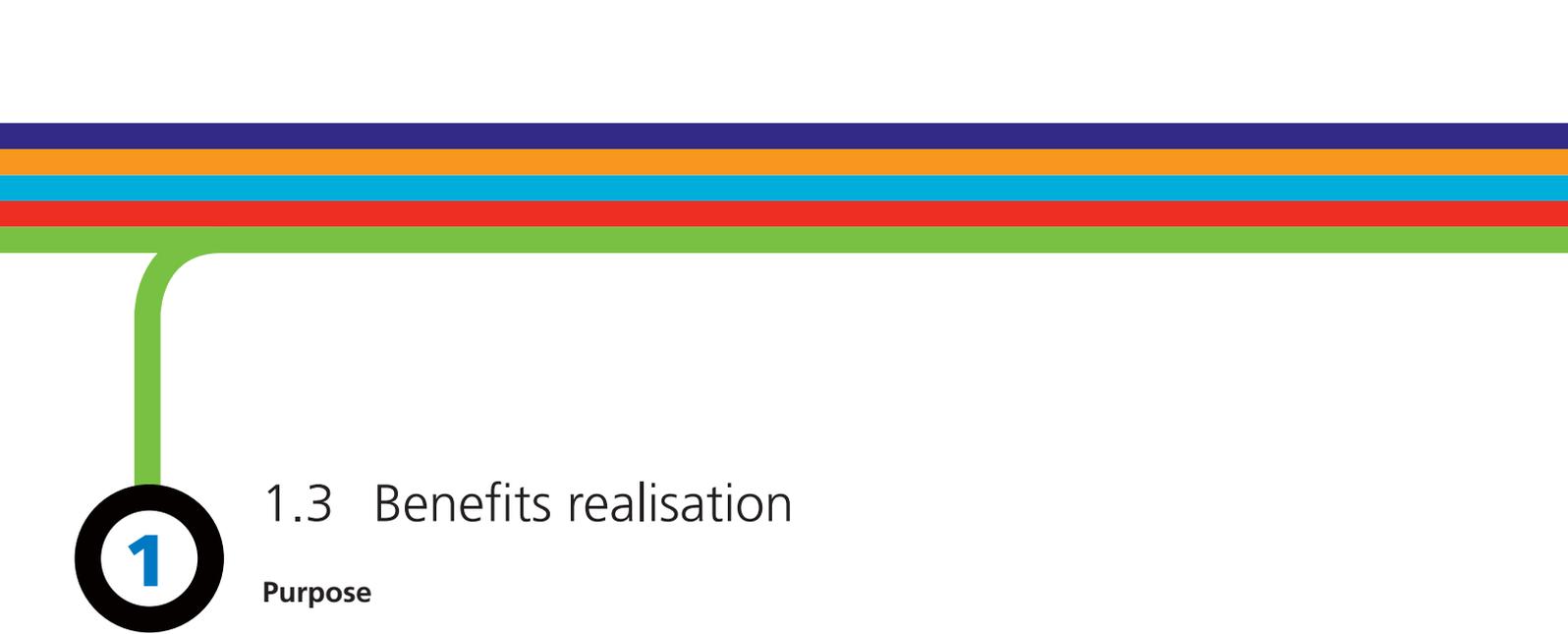
The table below indicates how to use a four column matrix to help share your project aims.

The established project aims	Project measures (How you know your project is progressing towards your aims)	Link project to the bigger picture (How you know your project is progressing towards your aims)	Link measures to organisational aims (How the project contributes to improving patient care, resource savings etc.)
"We guarantee that the results for all specimens will be available within..."	Pathology turnaround time (e.g. time in minutes from receipt of specimen to results being available).	70% of clinical decisions depend upon pathology.	How do we measure the impact this project will have on speeding up clinical decision making and help to achieve the 18 week pathway?

Additional resources

Websites

www.institute.nhs.uk – for the *Improvement Leaders' Guide: Measurement for Improvement*



1

1.3 Benefits realisation

Purpose

Having a sound benefits realisation plan in place will increase the delivery of intended benefits from your project and ensure that any allocated resources are fully utilised. It will also help you to identify with colleagues how your individual service improvement project is contributing to the overall service improvement programme.

By focusing on benefits realisation planning, you can track whether intended benefits have been realised and sustained after the project has ended. Furthermore, it helps to make clear who is responsible for the delivery of these benefits.

When to use it

A benefits realisation plan should be a fundamental part of any improvement project, running from beginning to end - and beyond.

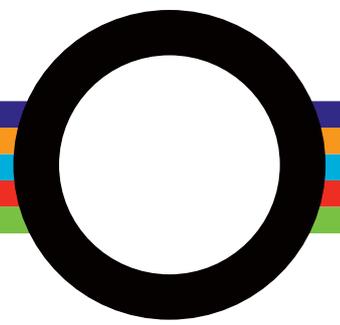
How to use it

The first step is to ensure that all the foundations for benefits realisation are in place.

- Identify and record the desired benefits; you may wish to discuss this with stakeholders.
- Ascertain the stakeholders who will be affected by each identified benefit.
- Identify the outcomes and enablers required for each benefit realisation.
- Determine how you will measure whether a particular benefit has been realised. Ideally, try taking a baseline measure before the project starts and use this as a benchmark to determine realisation of the anticipated benefit.
- Allocate responsibility for delivery of these benefits.
- Prioritise the benefits so that the most important always has the most focus. This ensures that the project makes the greatest impact.
- Identify dates for expected delivery of the benefits.

Creating a benefits realisation plan

Record the information that you have gathered from carrying out the initial steps in a table and store this plan with the other key project management work.



Desired benefit	Stakeholders impacted	Enablers required to realise benefit	Outcomes displayed if benefit realised	Current baseline measure	Who is responsible	Target

It is useful to order the benefits with the most important at the top. This helps you focus on the benefits that will have the greatest impact.

Having created and updated the benefits realisation plan throughout the project, aim to revisit it at agreed review points once the project has been completed. This can help you decide whether the resulting changes are still delivering the original desired benefits. If this is not the case, consider corrective action. [Methodology for measuring benefits](#) is a useful supplementary tool.

If the original desired benefits are no longer being achieved, it could be that the project has stalled and lost momentum. If you think this is the case, the tools [reviving a stalled effort](#) and [sustaining momentum](#) may be of use.

To realise the full benefits in the plan, you may have to sell the change project to key individuals to ensure proper buy-in. The benefits will only be realised if all parties are on board and working towards the same outcome.

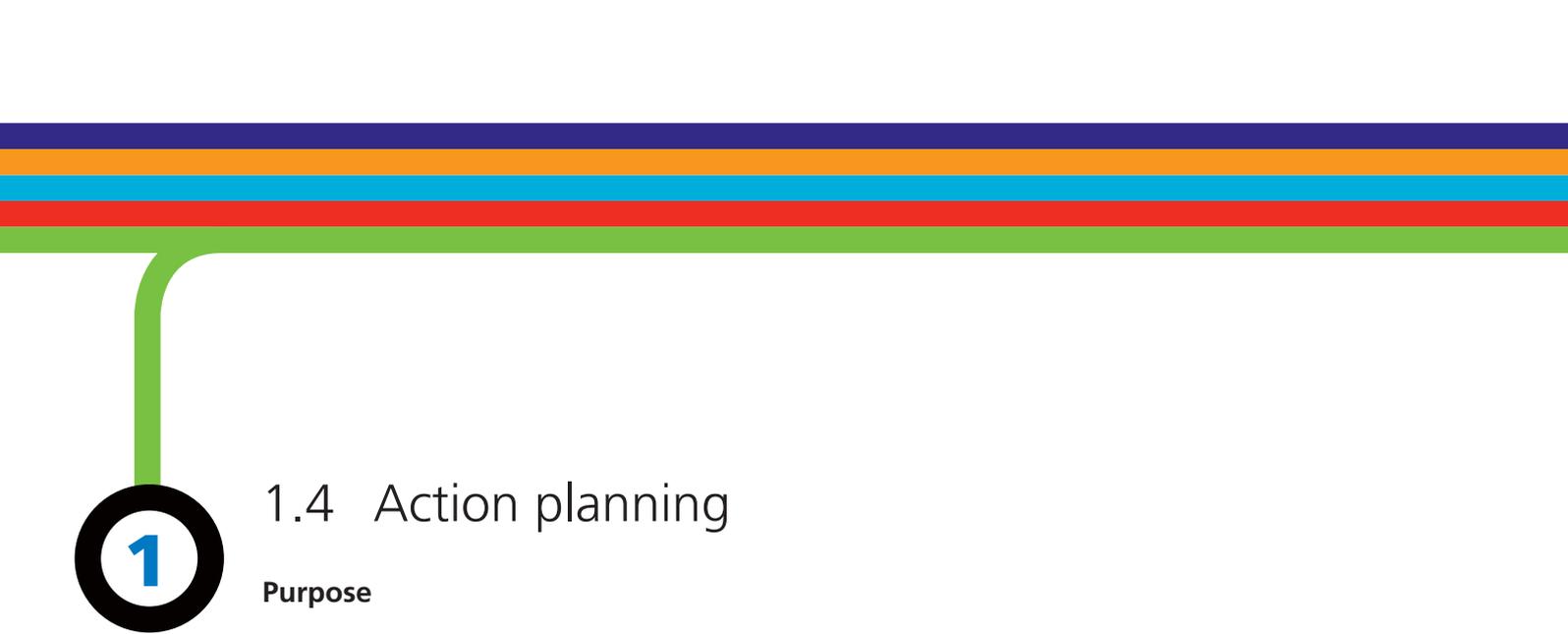
Additional resources

Books

Rolling Out Your Project: Thirty Five Tools for Health Care Improvers, S.W. Fraser
(Kingsham Press)

Website

www.ogc.gov.uk – The Office of Government website has a wealth of benefits realisation resources, including detailed information on PRINCE2 benefits realisation approaches.



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1.4 Action planning

Purpose

An action plan is a key component of successful project management, helping you to summarise how you will achieve objectives and by when. It also helps to organise the process into manageable sections.

When to use it

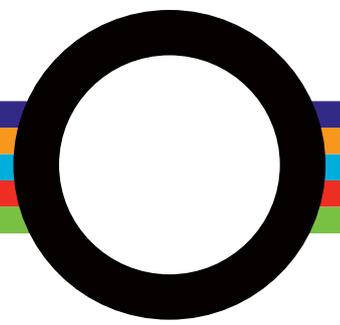
To deliver your project on time and to budget, you will need to define all necessary actions and assign responsibility to individuals for delivering these actions within agreed timescales.

How to use it

When action planning, break down each of your objectives into detailed tasks. This ensures that all areas of required action have been taken into account and enables you to manage the process in stages.

Steps to produce an action plan include:

- Establishing your current position by asking where are we now?
- Defining your objectives by asking where do we want to get to?
- Establishing the steps to achieve each objective by asking what do we need to do to get to our desired position?
- Deciding who is required to achieve the action and what is the target date?



Objective	Actions	By whom	By when	Possible issues
1	1.1			
	1.2			
	1.3			
2	2.1			
	2.2			
	2.3			
	2.4			
3	3.1			
	3.2			
	3.3			

The final column is an optional extra in case you want to capture issues that could thwart the action.

What next?

Review your action plan regularly to ensure that actions are being completed. Try pinning the plan up in a place where the whole team can continually view what actions are outstanding.

[Responsibility charting](#) may be another useful tool to facilitate action planning as it can help you to assign tasks to individuals.

Additional resources

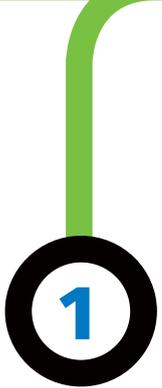
Books

Rolling Out Your Project: Thirty Five Tools for Health Care Improvers, S.W. Fraser
(Kingsham Press)

Websites

www.ogc.gov.uk – the Office of Government website has a wealth of project management resources, including detailed information on PRINCE2.

www.tin.nhs.uk – the NHS Improvement Network East Midlands has an excellent section on how to use action plans in meetings to ensure they are productive.



1

1.5 Responsibility charting

Purpose

Responsibility charting helps to ensure that everyone is clear about their roles and responsibilities. It can also help identify who needs communication about specific tasks and prevent duplication of effort.

Responsibility charting may highlight a range of issues, including gaps in responsibility, misunderstanding, miscommunication and areas where too many people are given responsibility for the same thing.

When to use it

This tool works well within and between teams, for strategic management and in project management settings when forming teams and delegating tasks. This means that you can use your chart as a reference point to check if things get done. It is particularly useful during the initial planning stages and at any time when roles and responsibilities seem unclear.

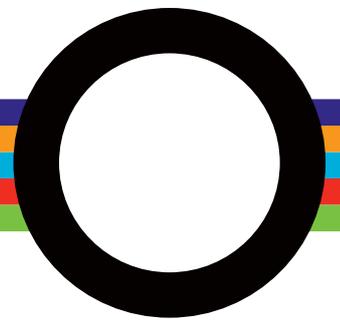
How to use it

Responsibility charts should be based on how processes and tasks are carried out, rather than according to the status of the people who are listed against the process. Aim to show 'how things work' on the chart. (If there are underlying issues within a team that make completing the chart difficult, a neutral facilitator may be best placed to help you.)

Step one

List the activities or tasks on the matrix (these are the row headings). For example:

- developing budgets, allocating resources e.g. discharge planning
- deciding when a patient is ready for discharge
- getting take home medications ready
- informing patients about what is happening
- giving information to patients about who to contact if there is a problem
- informing transport etc.



Step two

List all the people involved in the process (these are the column headings) including:

- people directly involved in the process
- managers and committees who apply controls on the process
- other people who may impact the performance of the process.

Step three

Working across each row, taking each activity in turn, identify and discuss each person's responsibility within the activity context.

Beckhard and Harris (1977) described four roles:

- (i) Responsibility - the responsibility to initiate action to ensure that activities/decisions are carried out. For example, it would be a department head's responsibility to initiate preparation of the departmental budget.
- (ii) Approval required or the right to veto - the particular item must be reviewed by the particular role occupant who can veto or approve it.
- (iii) Support - providing personal or logistical support and resources.
- (iv) Inform - must be informed and, by inference, cannot influence.

It is also useful to indicate if someone is not involved with a dash (-).

Beckhard and Harris also developed guidelines for making the technique more effective.

- Assign responsibility to only one person who initiates and is then responsible and accountable for that task.
- Avoid having too many people with an approval-veto function on any single item. This will slow down task completion or negate it altogether.
- If one person has approval-veto on most decisions, they could create a bottleneck.
- The support function is critical so be clear about the role and its demands. A person with this role provides resources or produces something that is then used by the person responsible for the task.

At times the assignment of functions to individuals becomes difficult and will require discussion, for example, when a person wants (rather than needs) to exercise a veto on an item, or when two people are vying for responsibility that should be assigned to only one.

Examples

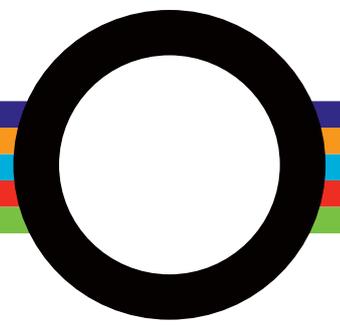
If a patient doesn't turn up for their appointment, who is responsible for what?

Before

Individual	Mani	Jo	Lou	Matt
Decision / Role	Information manager	Reception	Matron	Doctor
Tell clinical staff that the patient hasn't turned up	-	Responsible	Informed	Informed
Find out why the patient didn't turn up	-	-	-	-
Decision to make another appointment (according to protocol)	-	-	-	Responsible
Send appointment letter	-	Responsible	-	-
Monitor the number of patients who don't turn up and why	Responsible	-	-	-

In this example, no one is responsible for finding out why a patient didn't turn up which means that the event is likely to recur. The doctor is responsible for deciding about making a new appointment, but this may not always be necessary. The information manager monitors the fact that the patient doesn't turn up, but is not responsible for feeding back patterns to the clinic.

Discussion may highlight these sorts of issues and identify gaps in roles as well as opportunities for more efficient decision making.



After

Individual	Mani	Jo	Lou	Matt
Role	Information manager	Reception	Matron	Doctor
Tell clinical staff that the patient hasn't turned up	-	Responsible	Informed	Informed
Find out why the patient didn't turn up	Informed	Responsible	Informed	Informed
Decision to make another appointment	-	Support	Responsible	Approval – veto
Send appointment letter	-	Responsible	-	-
Monitor the number of patients who don't turn up and why	Responsible	Support	Informed	Informed

As with all changes you should review things on a regular basis. The [plan, do, study, act \(PDSA\)](#) cycle is an excellent way of doing this.

Additional resources

Books

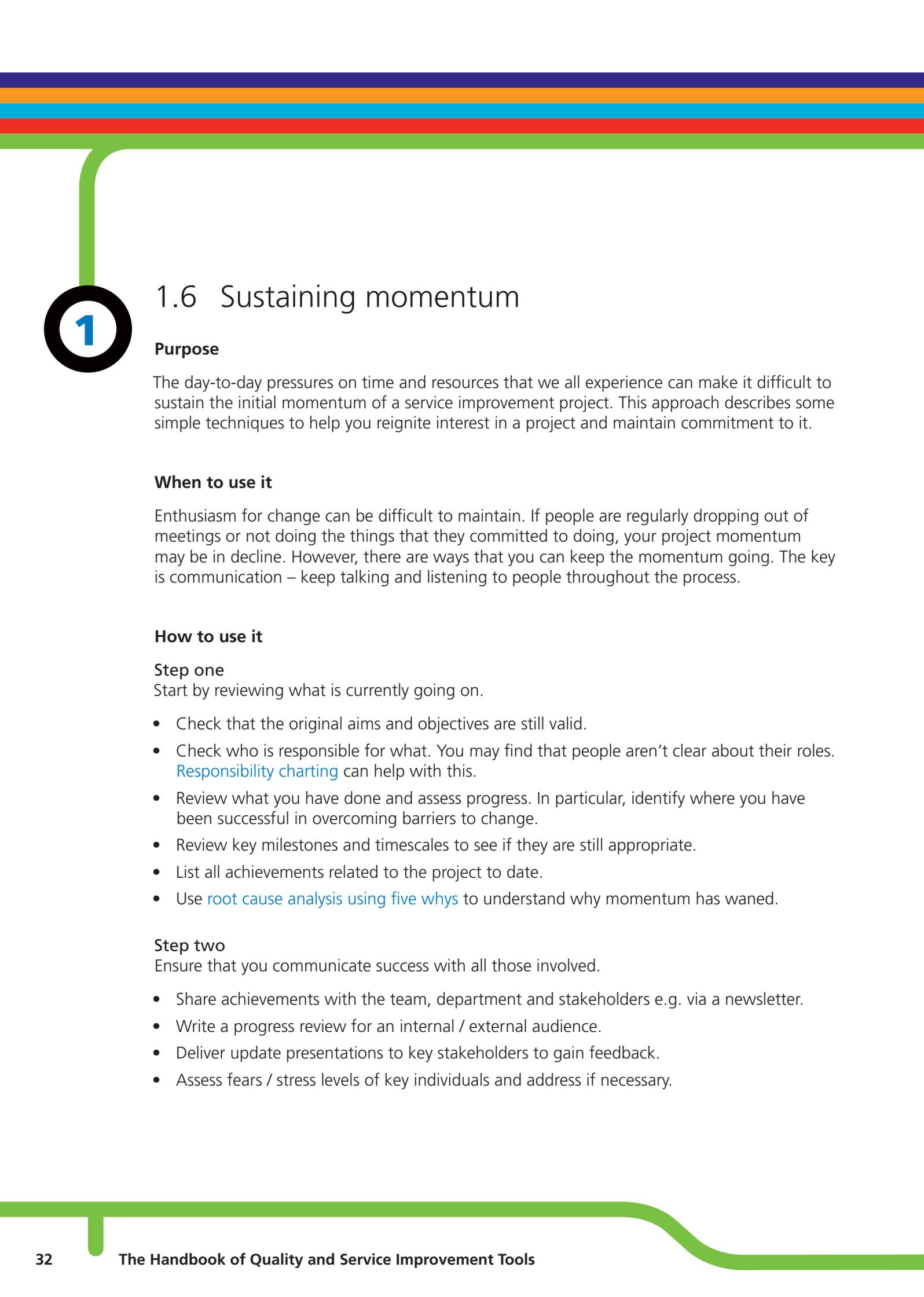
Organisational Transitions: Managing Complex Change R. Beckhard and R.T. Harris, 1977 (Addison-Wesley, Reading, Mass.)

Websites

www.idea.gov.uk/idk/aio/1361999 - The Improvement and Development Agency (IDeA) has a document on responsibility charting.

Acknowledgements

Effecting Change, University of Bedfordshire



1

1.6 Sustaining momentum

Purpose

The day-to-day pressures on time and resources that we all experience can make it difficult to sustain the initial momentum of a service improvement project. This approach describes some simple techniques to help you reignite interest in a project and maintain commitment to it.

When to use it

Enthusiasm for change can be difficult to maintain. If people are regularly dropping out of meetings or not doing the things that they committed to doing, your project momentum may be in decline. However, there are ways that you can keep the momentum going. The key is communication – keep talking and listening to people throughout the process.

How to use it

Step one

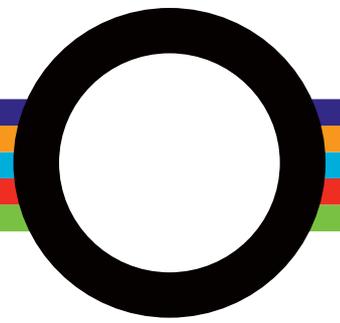
Start by reviewing what is currently going on.

- Check that the original aims and objectives are still valid.
- Check who is responsible for what. You may find that people aren't clear about their roles. [Responsibility charting](#) can help with this.
- Review what you have done and assess progress. In particular, identify where you have been successful in overcoming barriers to change.
- Review key milestones and timescales to see if they are still appropriate.
- List all achievements related to the project to date.
- Use [root cause analysis using five whys](#) to understand why momentum has waned.

Step two

Ensure that you communicate success with all those involved.

- Share achievements with the team, department and stakeholders e.g. via a newsletter.
- Write a progress review for an internal / external audience.
- Deliver update presentations to key stakeholders to gain feedback.
- Assess fears / stress levels of key individuals and address if necessary.



Step three

Listen to others and understand their priorities.

- Seek views and feedback from staff on the ground, senior management etc. Tools in the [thinking creatively](#) section of the handbook may help you resolve any issues.
- Identify different ways to communicate the same thing. For example, explain what you expect to achieve from your project in terms of organisational objectives. You could also demonstrate success, or the problem itself, from the patient's perspective. See [patient perspectives](#) and gather evidence about how long patients have to wait.

Exercise empathy. Your priorities aren't necessarily theirs.

Step four

Think about the team.

- Take a short break!
- Arrange away days / time out for the project team to promote co-operation and communication.
- Consider introducing a simple reward strategy.
- Celebrate success!

What next?

If interest in the project is reignited, keep the communication going using these strategies to keep interest high.

If interest remains low, you may find that your original aims aren't right - that the project has drifted and is unlikely to work. Try holding a formal review with key people to decide whether the project should be stopped. It is worth taking the time to communicate success, thank people for their input and celebrate closure.

Additional resources

Websites

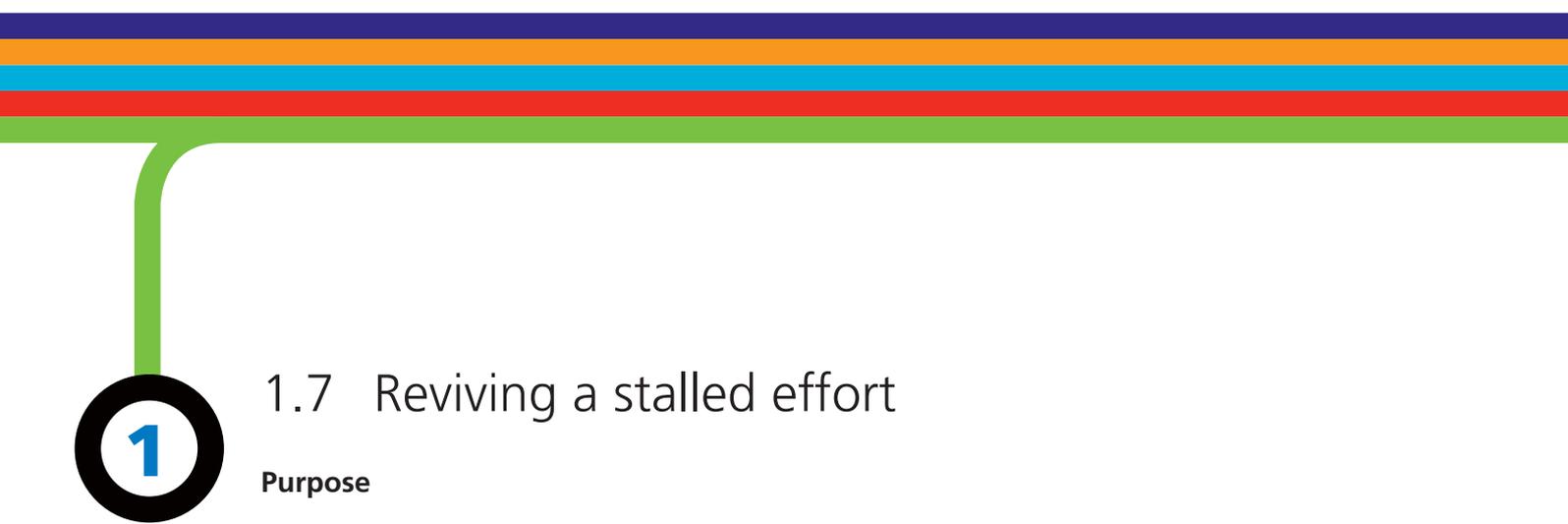
www.institute.nhs.uk – for the *Sustainability Model*

Background

These strategies were developed from work done in higher education establishments (see the Joint Information Systems Committee).

Acknowledgements

Effecting Change, University of Bedfordshire



1

1.7 Reviving a stalled effort

Purpose

If a project has stalled, this tool will help you to re-energise it by identifying and addressing the reasons.

Start by conducting a project status review to help you decide whether the project is still a priority and worth reviving. This tool will then help you create an action plan and provide suggestions for reviving the project.

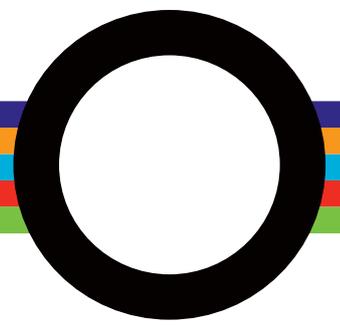
When to use it

Service improvement involves change, but the sheer scale of the changes involved in achieving some improvements mean that some projects may stall. To counter this, you need to have a strategy in place for making priorities and getting worthwhile projects back on track.

Signs that your improvement project is stagnating include:

- stakeholders view it as a low priority
- people have stopped attending meetings regularly
- actions are not carried out
- the general momentum has gone.

All, or any of these signs, indicate the need for a project status check to review the necessity for the change and its relevance to the present climate.



How to use it

Step one

Ascertain the project status and examine the reasons for its failure. Ideally, the original change team should carry this out, but if that isn't possible, go ahead with those available.

Use the questions to frame discussions and then complete the table below.

Criteria	Yes	No	Why / why not?	Corrective measure
Is the change still needed?				
Is the change still wanted?				
Is the change still relevant to the strategic direction?				
Would we be better off if we had implemented the change?				
Were the aims clear to everybody?				
Was measurement of change understood by everyone?				
Did we recognise the signs that the change wasn't on track?				
Did we do anything about it?				

Next, decide as a group how important completion of the project is to your organisation. This will enable you to decide whether it should be revived or closed.

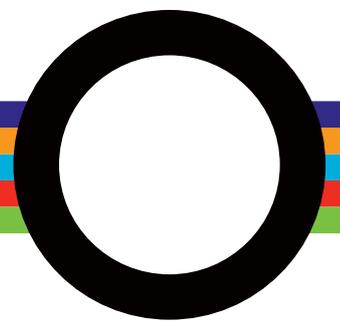
Step two

Regardless of whether you revive the project or cancel it, carry out a lessons learnt review. The questions in the following table help to identify why the project has stalled; discuss them with the original change team if possible. The answers will help shape an action plan for reviving the project. If you have decided to close it, they will provide valuable learning for future projects.

	Yes	No	How / who?
Structural			
Have key personnel left?			
Has structure hindered change?			
Financial			
Have we exceeded our budget?			
Has the budget been redirected?			
Cultural			
Was the approach to change appropriate to our situation?			
Did people have realistic expectations?			
Have people understood exactly what is expected of them?			
Has resistance to change been too high?			
Was the timing of the change right?			
What role did politics play in failing the change?			
Have other priorities got in the way?			
If our approach was different, could we have achieved better results?			

Whilst working through these specific questions, also consider the following:

- Why didn't we recognise the signs that the change effort was not on track?
- Why didn't we do anything about it?



Step three

The analysis in stage one will provide the basis for applying the corrective measures necessary to restart the project. Actions you can take include:

- Restructuring the team - are the right people involved? Ensure everyone is clear about their new role.
- Get higher profile involvement from senior management.
- Involve well known and well respected staff.
- Return to the aims of the project - do they need to be revised? Ensure they are clear and commonly understood.
- Address staff concerns and uncertainties that have arisen as a result of the project.
- Increase investment (time, people, finance).
- Re-brand the project if necessary.

Reviving a stalled effort may raise questions. If people feel that they have already seen the project fail, they may want reassurance that the change is necessary and that the aims are valuable. You need to convince them that this time, the project will be followed through to completion.

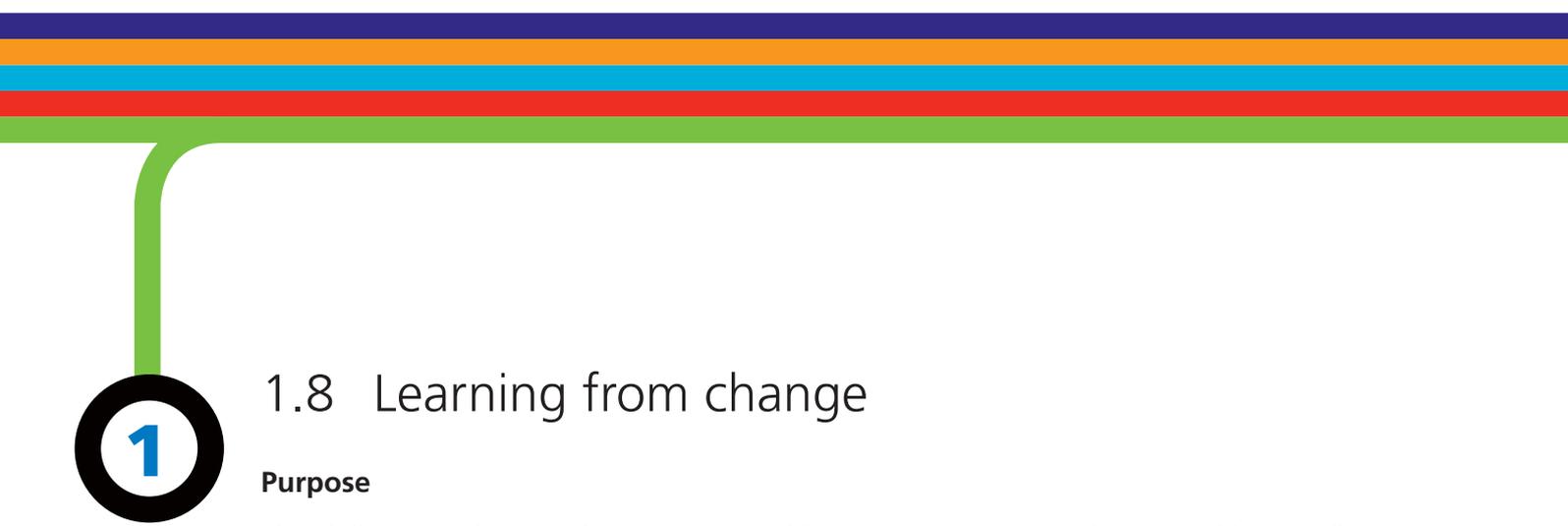
If the team has decided not to continue with the project, ensure it is formally closed. First, make sure that you have the authority to do so, then inform everybody involved of the decision. You should also include an end of project report with a summary of the lessons learnt.

Step four

It is important to learn from what went wrong in this and previous projects. Take note of the signs that were identified during the project status and lessons learnt reviews. Do not repeat the same mistakes twice.

Acknowledgements

The Joint Information Systems Committee (JISC) InfoNet



1

1.8 Learning from change

Purpose

The ability to implement change is affected by prior experience of change and how well or badly it was handled. When contemplating change in an organisation and how to manage it, you may find it useful to spend some time learning from past experiences. This will enable you to maximise and build on previous successes - and avoid repeating mistakes.

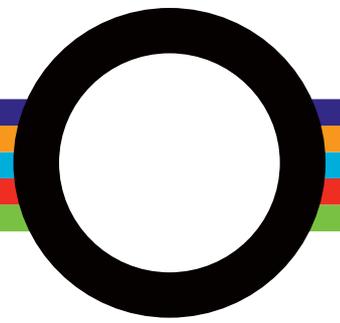
This tool will help you to identify past experiences and consider their implications for planned change.

When to use it

This simple tool should initially be used at the beginning of a project to shape your approach and [action plan](#).

It can also be used continuously throughout your project, for example before you implement changes or if you have to [revive a stalled effort](#). Other examples of when to use the learning from change approach include:

- when you want to introduce a new set of procedures or way of working
- before the introduction of a new computer system
- before a major training activity
- before a piece of research.



How to use it

Identify four or five major changes that your organisation or team has undergone in recent years. These can be any size. They may have resulted from internal actions, areas in which you and your team identified a need for change or external influences such as new Department of Health targets.

For each change, consider the following questions:

- What do I think this was trying to achieve?
- What happened?
- How is it viewed by colleagues now?
- Was it successful? What evidence supports this conclusion?
- What were the positive things about how it was implemented?
- What were the negative things about how it was implemented?
- What are the key learning points for any change that I might want to introduce?

The answers to these questions can then inform your new change project: your approach, how you manage it and how you involve your team.

Additional resources

Books

Learning to Fly: Practical Lessons from One of the World's Leading Knowledge Companies (In particular Chapter 7: Learning Whilst Doing and Chapter 8: Learning After Doing), C. Collison and G.Parcell, 2001 (Oxford: Capstone)

Background

Learning from change is a knowledge management technique adapted from after action reviews that were originally developed and are extensively used by the US Army. They are a way of capturing lessons learned after every operation and sharing those lessons throughout the organisation.

Acknowledgements

The University of Bedfordshire

Joint Information Systems Committee InfoNet

2

Identifying problems

Identifying problems – an overview

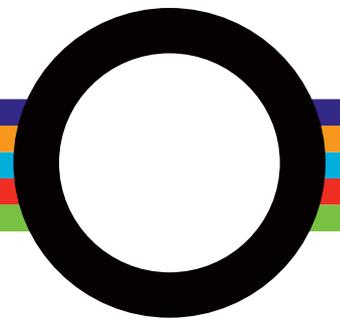
Purpose

Identifying the root cause of a problem by analysing qualitative and quantitative information will help you to understand the real cause and determine whether a symptom is actually the cause or effect of a problem. Your improvement work needs to focus on the cause of the problem, not the effect.

When to use it

When problems occur, use the tools to understand and gain insight into the causes before making changes based on assumptions. Using the type of tools listed below ensures your approach to solving problems is factual or evidence based.

- 2.1 [Using an affinity diagram](#) will help you to brainstorm ideas and/or group them into themes.
- 2.2 The [cause and effect \(fishbone\)](#) diagram can be used to visually summarise the findings of the affinity diagram.
- 2.3 [Root cause analysis using five whys](#) will help you identify why things are happening. This tool simply involves asking 'why?' several times over. It helps to develop a questioning attitude so that you never accept the first reason given and are always prepared to probe further.
- 2.4 A [data check sheet](#) is a simple form that can be used in data gathering.
- 2.5 The [Pareto](#) analysis tool can quickly identify the major causes of a problem so that you can work on the few critical causes necessary for improvement.
- 2.6 A [histogram](#) displays continuous data that can help you understand where problems are to help focus your improvement efforts.
- 2.7 A [scatter diagram](#) is used to study the relationship between two variables. It shows what happens to one variable when the other variable changes.
- 2.8 [Identifying frustrating problems](#) is a straightforward approach that shows you how to illustrate (literally), discuss and solve problems within your working environment.



How to use it

All of these tools are described in more depth in the following pages of this section. When using this suite of tools, it may be helpful to bear the following points in mind:

- avoid jumping to conclusions
- identifying the cause of problems will help prevent incorrect assumptions about the real causes and problems
- consider whether further data needs to be collected to fully verify a cause
- ensure the team agrees on the list of verified causes before moving on.

What next?

Once you have identified the causes of a problem, you need to verify them so that any unfeasible or unlikely causes are removed. After applying common sense and knowledge to remove unlikely causes, verify the remainder using any available measurements and [process mapping](#).

The team then agrees the list of verified causes and prioritises the list so that they can focus on the cause of delay with the most potential for improvement in the shortest time.

Any weaknesses that can cause a delay in a process can be highlighted by mapping it; this exercise may also identify quick win opportunities for improvement. [Seven wastes](#) can be used to identify simple ideas that can be implemented quickly.

Consider using the [Six Thinking Hats](#)[®] tool for managing the analysis process.

Additional resources

Websites

www.npsa.nhs.uk - the Root Cause Analysis (RCA) Toolkit and e-Learning Programme (RCA Toolkit) have been created by the National Patient Safety Agency (NPSA) to guide NHS staff through the process of conducting an RCA investigation. The RCA Toolkit is free of charge to NHS staff.

www.dcs.gla.ac.uk - an introduction to root cause analysis in healthcare by Professor Chris Johnson of Glasgow University is available to download (use the search facility on the website).

Background

Root cause analysis originated in Lean theory, which uses the Ishikawa diagram and five whys tool. Information on this can be found on the NHS Institute website - look under Service Transformation for a useful document linking Lean and Six Sigma.

2

2.1 Using an affinity diagram

Purpose

Effective **brainstorming** sessions generate lots of ideas, some of which may be selected for further exploration. Specific tools and techniques are available to help with this selection process.

Affinity diagrams build a grouping and analysis process into the brainstorming session, encouraging people to think inventively and make non-traditional connections of ideas. The process promotes greater ownership of results, allowing breakthroughs to emerge naturally.

Techniques like affinity diagrams and brainstorming can help you to clarify an issue and think up new ideas so you can move onto the next steps.

When to use it

You can use affinity diagrams at any stage of an improvement project, particularly if you anticipate a large volume of ideas.

How to use it

Step one

Express the issue under discussion clearly in one sentence, for example, 'Why are patients waiting so long for test results?'

Step two

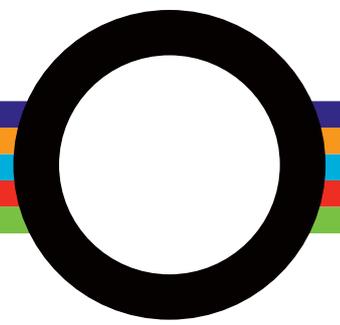
People silently record their views on Post-it notes. As a minimum, use a noun and a verb, ideally there should be four to seven words on each statement.

Step three

Randomly display the Post-it notes. Without discussion, the group sorts the Post-it notes into 5–10 groupings. If someone disagrees with a grouping, the note can be moved, but without discussion.

Step four

Create a summary or header card for each grouping to encapsulate the main theme through a rapid team consensus. Avoid one word headers.



Step five

Draw and record the finished diagram by connecting all the heading cards with their groupings.

Step six

Review the result with the team and other key people (stakeholders).

Tips

- Aim to reach a consensus on the choice of words. Neutral, positive or negative statements can all work well, in addition to solution orientated questions.
- A typical affinity diagram would have 40-60 items, but could have 100-200 ideas depending on the complexity of the problem.
- Large groups of Post-it notes may need to be divided into sub groups.
- You may find it helpful to move headers and groups into a logical sequence.

What next?

This will depend on why you are using an affinity diagram, what you want to get out of it and how it went. You should ensure that either you or members of your group follow up the ideas and communicate any results to the rest of the team. If you are trying out a new idea, small tests of change are a useful way of initiating action quickly.

If you are using the tool to identify the cause of delay in a patient journey or a safety issue, you may find it useful to capture the output in the form of a [cause and effect diagram](#).

Acknowledgement

The NHS Improvement Network East Midlands and Dave Young.

2

2.2 Cause and effect (fishbone)

Purpose

Cause and effect analysis helps you to think through the causes of a problem, including possible root causes – not just symptoms. It is only by identifying the main causes that you can permanently remove the problem.

Working through cause and effect analysis enables those involved to gain a shared insight into the problem, develop possible solutions and create a snapshot of the team's collective knowledge.

When to use it

Use this tool when you are trying to determine why a particular problem is occurring. It will help you to fully understand the issue and to identify all the possible causes - not just the obvious.

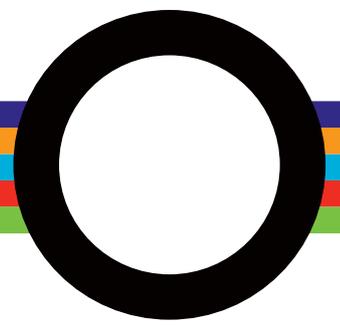
How to use it

Step one

Identify the problem and consider it in detail: who is involved, when and where it occurs. Write the problem in a box and draw an arrow pointing towards it.

For example:

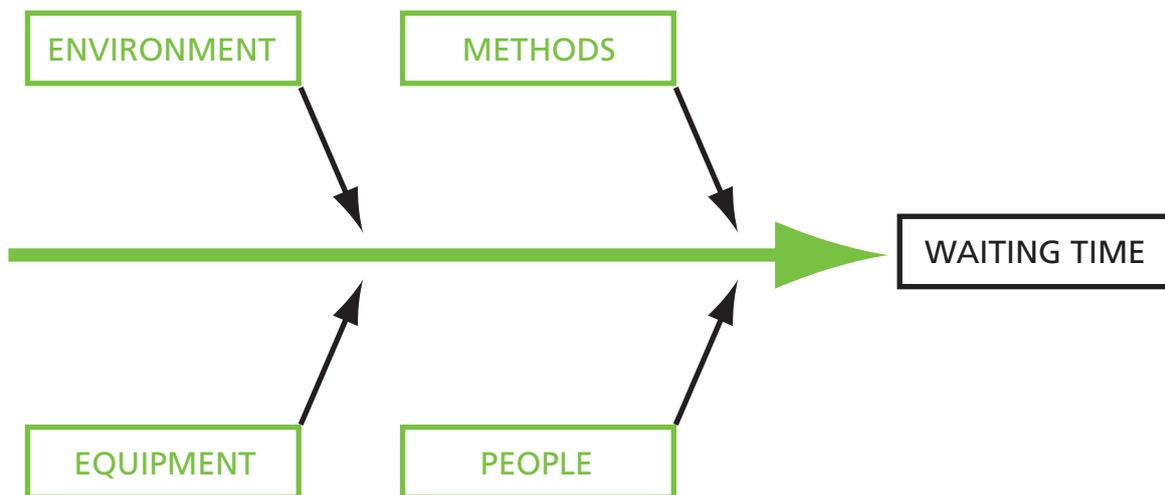




Step two

Identify the major factors and draw four or more branches off the large arrow to represent main categories of potential causes. Categories could include: equipment, environment, procedures and people. Make sure the categories are relevant to your particular problem. Alternatively, you could use the [affinity diagram](#) technique and group headings.

For example



Step three

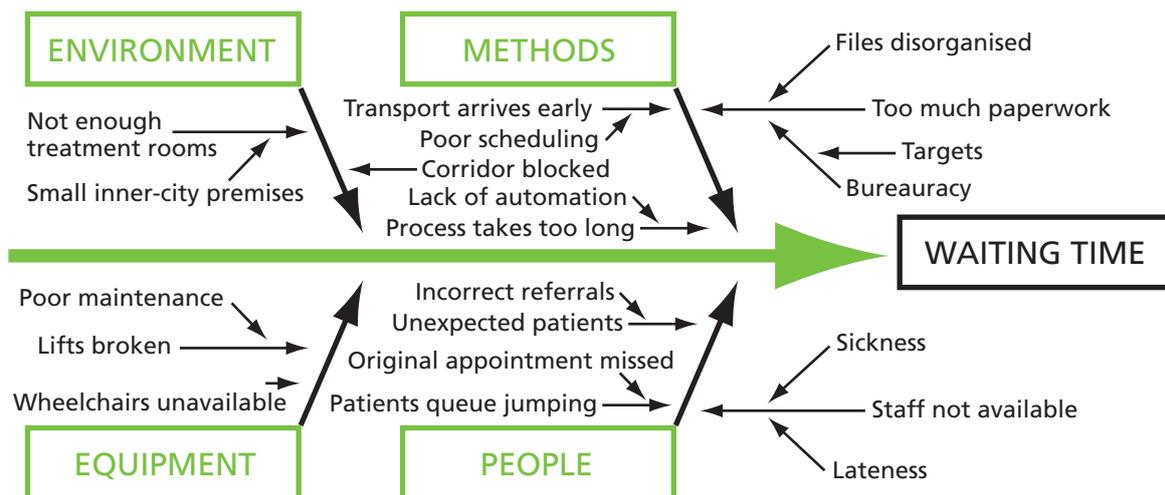
Take each of the main categories and brainstorm possible causes of the problem. Explore each one to identify more specific 'causes of causes'. Continue branching off until every possible cause has been identified. You might want to break complex causes into sub-causes. Show these as lines coming off each cause line.

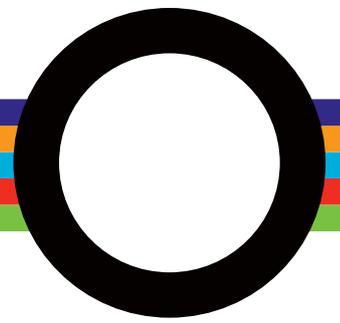
Step four

Analyse your diagram. By this stage you should have a diagram showing all the possible causes of your problem. Depending on its complexity and importance, you can now investigate the most likely causes further. This may involve using more identification tools such as [data check sheets](#), setting up interviews (see [patient perspectives](#)), carrying out [process mapping](#) or surveys that you can use to decide whether the causes identified are correct.

Tips

- Make sure your team agrees on the problem statement. Include as much information as possible in the 'what', 'where', 'when' and 'how much' of the problem. Use data to specify the problem if possible.
- Aim to construct the diagram with the people involved in the problem.
- You can use a cause and effect diagram as a working document that is updated as and when you collect more data, or to trial various solutions.
- Use a paper surface so that you can transport the final diagram.
- Ideally, causes should appear in only one category, although some causes may overlap.





Example



Bolton Hospital General Surgery team used cause and effect analysis and [root cause analysis using five whys](#) to identify the barriers to implementing their redesigned pathway for abdominal pain and how these barriers could be overcome.

Background

The cause and effect diagram is sometimes called a fishbone diagram (because the diagram looks like the skeleton of a fish) or an Ishikawa diagram (after its inventor Professor Kaoru Ishikawa of Tokyo University).

The cause and effect diagram was adopted by Dr W Edwards Deming as a helpful tool for improving quality. Dr Deming has been teaching total quality management in Japan since World War II. He has also helped develop statistical tools used for the census and has taught methods of quality management to the military. Both Ishikawa and Deming use this diagram as one of the first tools in the quality management process.

Acknowledgements

The NHS Improvement Network East Midlands and Dave Young
Bolton Hospital General Surgery team

2

2.3 Root cause analysis using five whys

Purpose

By repeatedly asking the question 'why?' (use five as a rule of thumb), you can peel away the layers of a problem to get to the root cause. The reason for a problem often leads to another question, so you may need to ask the question fewer or more than five times before you get to its origin.

Five whys can also help you to determine the relationship between different root causes of a problem. It is easy to apply and to complete without statistical analysis.

When to use it

You can use this tool either in isolation or to complement a root cause analysis. Because it quickly helps identify the source of an issue or problem, you can focus resources in the correct areas and ensure you are tackling the true cause of the problem, not just its symptoms.

How to use it

Step one

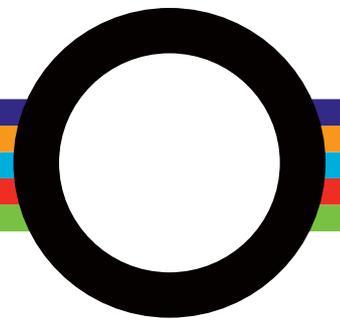
Write down the specific problem; this helps you formalise the problem and describe it accurately. It also helps a team focus on the same problem.

Step two

Use [brainstorming](#) to ask why the problem occurs then, write the answer down. If this answer doesn't identify the source of the problem, ask 'why?' again and write that answer down. Loop back until the team agrees that they have identified the problem's root cause. Again, this may take fewer or more than five 'whys?'

The [cause and effect \(fishbone\)](#) diagram helps you explore all potential or real causes that result in a failure or problem. Once you have established all the inputs on the cause and effect diagram, you can use the five whys technique to drill down to the root causes. The key is to avoid assumptions and encourage the team to keep drilling down to the real root cause.

If you try to fix the problem too quickly, you may be dealing with the symptoms not the problem, so use the five whys to ensure that you are addressing the cause of the problem. Remember, if you don't ask the right questions, you won't get the right answers.



Examples

An example of root cause analysis using five whys would be:

The patient was late in theatre, it caused a delay. **Why?**

There was a long wait for a trolley. **Why?**

A replacement trolley had to be found. **Why?**

The original trolley's safety rail was worn and had eventually broken. **Why?**

It had not been regularly checked for wear. **Why?**

The root cause is that 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.

Another example of root cause analysis using five whys would be:

The patient's diagnosis of skin cancer was considerably delayed. **Why?**

The excision biopsy report was not seen by the surgeon. **Why?**

The report was filed in the patient's notes without being seen by the surgeon. **Why?**

It was the receptionist job to do the filing. **Why?**

The junior doctors were busy with other tasks. **Why?**

The root cause is that the doctor's other tasks were seen as more important than filing. The system has now been changed. A copy of all biopsy reports is sent to the consultant surgeon responsible for the patient and no reports are filed unless they have been signed by a doctor.

What next?

Once you have identified the root cause of the issue, the next suggested step is to complete a [cause and effect diagram](#). [Brainstorming](#) can help you identify potential solutions.

You will need to communicate the outcomes to others to ensure that the root cause of the problem is understood and that everyone is focused on working on the correct problem area, not treating its symptoms.

Additional resources

Books

The New Lean Toolbox J. Bicheno, p152 (Picsie Books)

The Toyota Field Book J. Liker, 2004

Websites

<http://chain.ulcc.ac.uk/chain/index.html> - CHAIN (Contact, Help, Advice and Information Networks) has a Lean sub group. Most people in healthcare improvement are members of CHAIN3. If you want to join, e-mail the CHAIN administrator at enquiries@chain-network.org.uk.

www.connotea.org/login - a free online reference management resource for researchers, clinicians and scientists. Lean information available – login using name: chaingroup and password: lean then click on 'Lean thinking in healthcare'.

www.networks.nhs.uk – NHS Networks has a Lean thinking group.

www.leanuk.com – the Lean Enterprise Academy.

www.institute.nhs.uk – see the Service Transformation section for more information.

www.bill-wilson.net – information on root cause analysis and five whys.

Background

Five whys was devised by Toyota as they developed their manufacturing methodologies. It forms a critical component of their problem solving training and is part of the induction into the Toyota production system. It is now also used in Six Sigma.

Acknowledgements

Six Sigma - *Determining the root cause: five whys*

The Improvement Network



2

2.4 Data check sheet (frequency plot check sheet)

Purpose

A check sheet is a standard form, which you can use to gather reliable data consistently. This will help you identify the causes of a problem and answer the key questions for your project so you can focus your improvement efforts on the correct area.

When to use it

Use data check sheets to support [root cause analysis using five whys](#) - when you have identified a key problem area and need to gather more data to drill down to the specific root cause of a problem.

How to use it

In order to collect reliable data to accurately analyse problems that will lead to changes in practice, you will need to design a standard data collection form, for example, a check sheet used to collect frequency plot data. Other types of data collection forms include traveller and location.

The data check sheet should be simple to use. Before designing the form, consider the method of analysis that you will be using.

Step one

Create your check sheet form and include the name of the data collector, time period and explanatory title. It may also be useful to incorporate a space for comments. You may want to define the data to be collected to avoid confusion and ensure consistency regardless of the person collecting the data.

Step two

Pilot the form and make changes as required.

Step three

Make a list down the left hand side of the possible causes of the problem.

Step four

Use the simple 'five bar gate' system, recording one bar for each time the cause occurs. Once completed, analyse the main causes by simply counting the number of times (frequency) the possible causes occur.

Step five

You can turn the results into a [histogram](#) or [Pareto](#) chart to highlight main causes and apply the 80:20 rule.

Example

A check sheet used to gather data on causes of accidents may look like this:

Check sheet

Cause	Place a mark each time it occurs
Slips, trips and falls	
Lifting and carrying	
Cuts	
Burns	
Contact with substances	

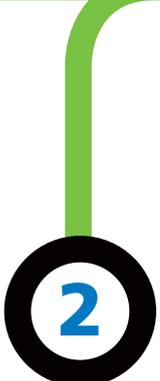
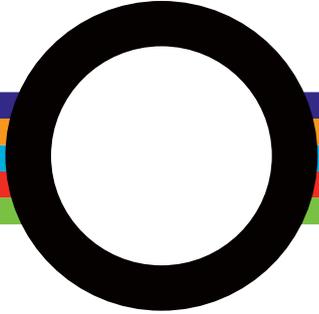
What next?

After you have completed the data collection and analysis, you will have hopefully determined the main causes of the problem. Recording the results in a [Pareto](#) chart may help you determine which categories to focus your efforts on to ensure maximum impact.

Additional resources

Books

The Lean Six Sigma Pocket Toolbook M. George et al, 2005 (The McGraw Hill Companies)



2

2.5 Pareto

Purpose

Pareto analysis is a simple technique that helps you to focus efforts on the problems that offer the greatest potential for improvement by showing their relative frequency or size in a descending bar graph.

Pareto's 80/20 principle asserts that a minority of causes, inputs or effort usually lead to a majority of the results, outputs or rewards. The 80/20 rule should serve as a daily reminder to focus 80 per cent of your time and energy on the 20 per cent that really makes a difference.

When to use it

When analysing the causes of a problem, this tool will quickly identify the major causes so that resources can be directed accordingly. You may find it helpful to use a Pareto chart after you have completed a [cause and effect \(fishbone\) diagram](#) as this will help you identify which causes to work on first.

How to use it

Step one

Identify the problem area you want to know more about and the possible causes. This can be done using a [cause and effect \(fishbone\) diagram](#) or [brainstorming](#).

Step two

Collect and analyse data to verify the causes you have identified. Choose the most meaningful unit of measurement that relates to your problem: usually frequency or cost. Rank the causes / delays from largest to smallest i.e. comparing the relative frequency of the causes.

Step three

Draw a Pareto graph to illustrate the findings by listing the problem categories on the horizontal axis and the frequency or cost on the vertical axis. This simple bar chart will help to ensure that your findings are quickly and easily understood by others (see example one).

You can further enhance this by using a cumulative frequency graph.

- Draw the cumulative percentage line showing the proportion of the total number that each problem category presents.
- On the vertical line, record 100 per cent opposite the total number and 50 per cent at the halfway point. Fill in the remaining percentages drawn to scale.
- Starting with the highest problem category, mark the upper right hand corner with an X or a dot.
- Add the total of the next problem category to the first and draw a dot above the bar showing both the cumulative number and percentage. Connect the dots and record the remaining cumulative totals until 100 per cent is reached (see example two).

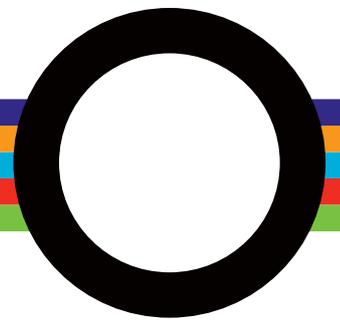
You can use the Pareto principle for a wide variety of problem solving and continuous improvement activities, including:

- 80% of interruptions come from 20% of the people
- 80% of an equipment budget comes from 20% of the items
- 80% of benefits come from the first 20% of effort
- 80% of complaints are about 20% of your services
- 80% of a nurse's time is spent on 20% of the patients
- 80% of the decisions made in meetings come from 20% cent of the meeting time
- 80% of innovation comes from 20% of the staff
- 80% of staff problems come from 20% of the staff
- 80% of your success comes from 20% of your efforts.

Tips

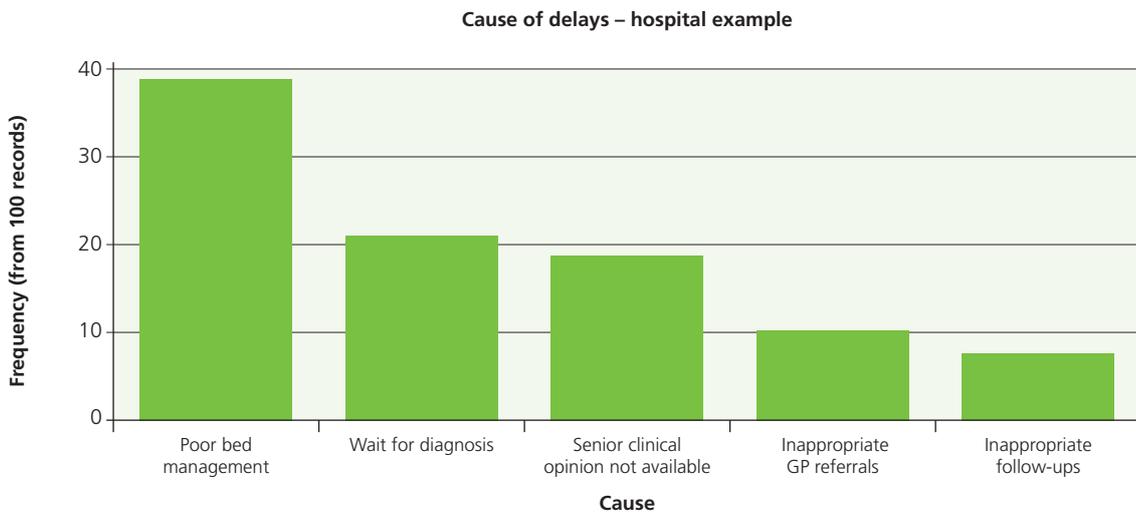
Tackle the causes with the highest score / frequency first as these offer the greatest benefit if resolved. Causes with the lowest scores / frequencies may not be worth tackling as solving these problems may cost more than the solutions are worth.

The 20-20-60 rule claims that in most organisations, 20 per cent of people support process improvement and 20 per cent do not. The people in these two groups are basically fixed and no amount of persuasion is likely to change their view. People in the remaining 60 per cent are interested, but need to be convinced. If you apply the 20-20-60 rule, you should focus on the 60 per cent by addressing their concerns, doubts and questions. These are the people who are most likely to get involved in continual improvement in the future.



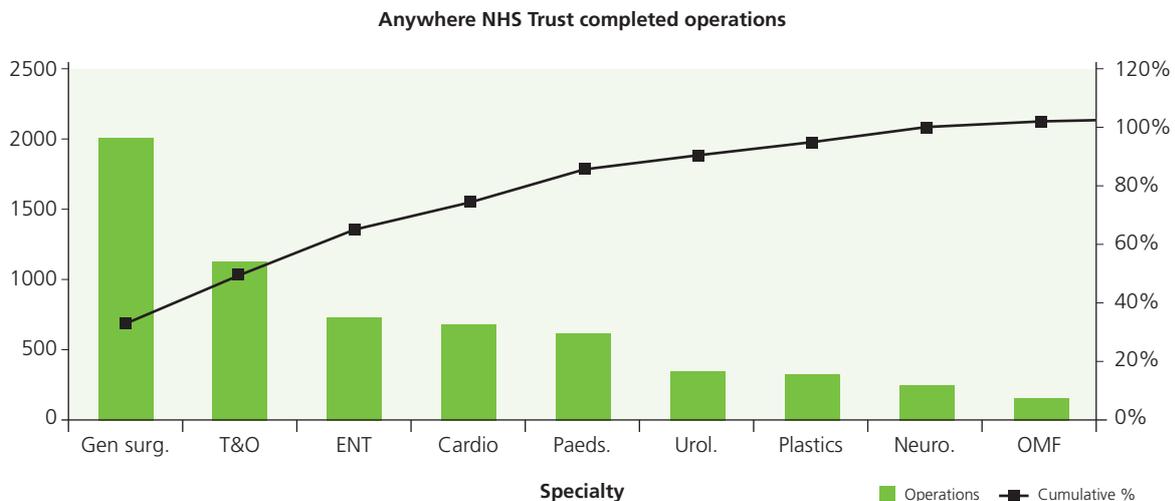
Examples

1. An improvement team set out to reduce delays in its hospital but was unsure which of the most common causes to tackle first. After collecting data on the causes of delay, the team produced this Pareto chart:



From this graph, the team was able to see that the main cause of delay was poor bed management and not diagnostics as many might think. As a result, the team allocated resources to improving bed management, significantly reducing delays.

2. This Pareto chart shows that the highest volume operations within a hospital are in general surgery.



What next?

After using the Pareto technique to identify the causes that have the most potential for improvement when solved, you can produce an [action plan](#) of the next steps.

Additional resources

Books

The 80/20 Principle: The Secret to Success by Achieving More with Less, R.Koch

Background

The Pareto principle was first suggested by management thinker Joseph Juran in the 1940s and was named after the Italian economist Vilfredo Pareto. In the early 20th century, Pareto observed that 80 per cent of income in Italy was received by 20 per cent of the Italian population. Juran built on this idea and came up with the assumption that the majority results of any situation can be determined by a small number of causes.

This idea is often applied to data such as sales figures i.e. 20 per cent of clients are responsible for 80 per cent of sales volume, but can easily be applied to the NHS e.g. 80 per cent of a nurse's time is spent on 20 per cent of the patients.

Statements of 80/20 principles can be tested using the Pareto chart and are useful to support decision making. Richard Koch has written many books on how Pareto can be applied.

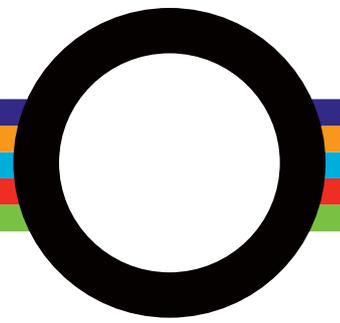
Acknowledgements

MindTools

ManagementAbout

Randomhouse

The NHS Improvement Network East Midlands and Dave Young



2

2.6 Histogram (frequency plot)

Purpose

A histogram is a type of bar chart that displays a set of continuous data that you can use to evaluate the distribution or variation of data over a range, for example, weight, length of time, size and age.

The shape of the bar or curve shows the distribution of data; it can help you determine what statistical tests to apply and understand where problems are. With this information, you can decide where to focus your improvement efforts.

When to use it

A histogram is a good tool for early analysis in a project. It is useful when you have collected some baseline data and want to understand where to focus your improvement efforts in a patient pathway. For example, you may wish to improve flow of high volume elective procedures.

You can use the data points that you used to create your run charts, as both can be used to show a before and after picture of the process under review. A histogram does not show you how things are changing over time - a run or trend chart will provide you with this information.

How to use it

Step one

Gather data on a process you are interested in: it could be time, weight, size or frequency of occurrences. To effectively see the patterns in performance, try to collect at least 50 data points.

Step two

Decide how many bars (or classes) you want in your histogram. Table one suggests how many classes you could use based on the number of data points you have collected.

Table one

No. of data points	No. of classes
Under 50	5-7
50-100	6-10
100-250	7-12
Over 250	10-20

Step three

Identify how many of your data points fall into each class and record this information in a table. This will be your frequency table.

Step four

To construct the histogram, draw a two axis graph. Classes are plotted on the horizontal axis and their frequency is plotted on the vertical axis. Transfer the data from your frequency table onto the graph, so that you have a vertical bar for each class.

Step five

Interpret your results.

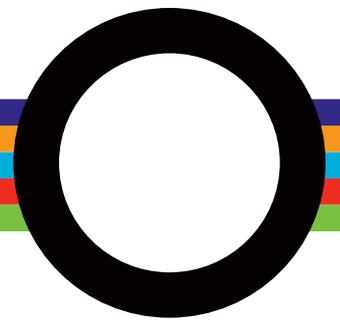
Example

A team was thinking about how its directorate could improve the quality and value of the services provided. They had a hunch that the length of stay varied greatly, so decided to collect some baseline data.

They collected length of stay data from one ward for a month, which they turned into a frequency table (see table two).

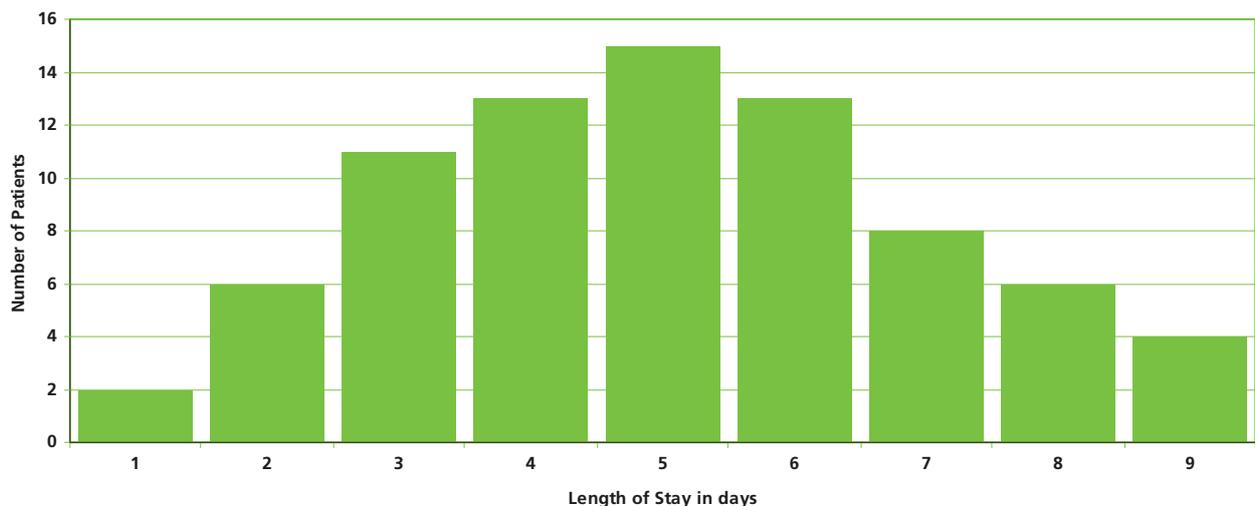
Table two

Length of stay (days)	Number of patients
1	2
2	6
3	11
4	13
5	15
6	13
7	8
8	6
9	4



The team then converted this into a histogram (see histogram one).

Histogram one



Interpreting the results

The data in this example shows a normal distribution. This is characterised by a bell shaped curve with data more or less symmetrical about the central mean.

One of the key characteristics of normal distribution is the relationship between the shape of the curve and the standard deviation (plus or minus three standard deviations from the mean).

Evaluating the distribution for normality affects which statistical tests you can perform. If the data is not normally distributed, you cannot calculate control limits and create a [statistical process control \(SPC\)](#) chart to identify special causes of [variation](#) in a process under review. Neither can you highlight improvement opportunities.

Data may be skewed to the left or right. If the histogram shows a long tail of data on the left hand side, this is called left or negatively skewed distribution (histogram two). If the tail appears on the right hand side, this is called right or positively skewed distribution.

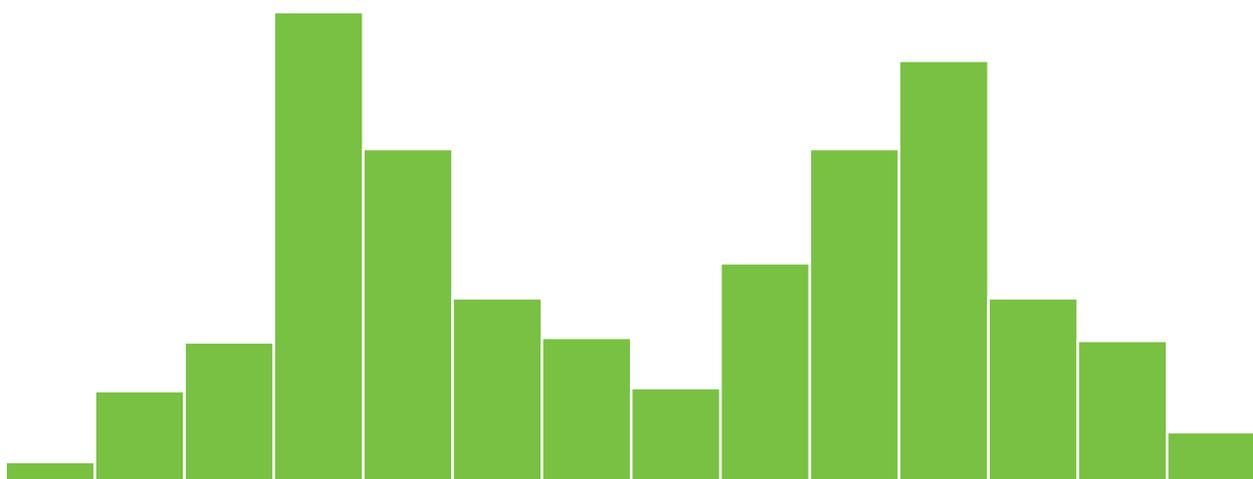
Seriously skewed data may be an indication that there are inconsistencies in the process. For instance, measures may tend to artificially 'pile up' just on the good side of some target figure.

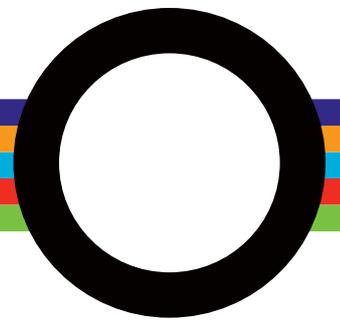
Histogram two



If the shape of your histogram shows twin or multiple peaks (histogram three), this is an indication that the data is coming from two or more different sources, e.g. shifts, departments, wards, pathways, tests. In this case you may need to separate the data out so that one histogram represents one set of data.

Histogram three





What next?

Evaluate the distribution of the set of data to inform your improvement effort. If there is normal distribution, apply certain statistical tests such as [statistical process control \(SPC\)](#) to identify [variation](#) in the process and special or common causes. In the case of a twin peak distribution, re-work and separate the data.

Additional resources

Books

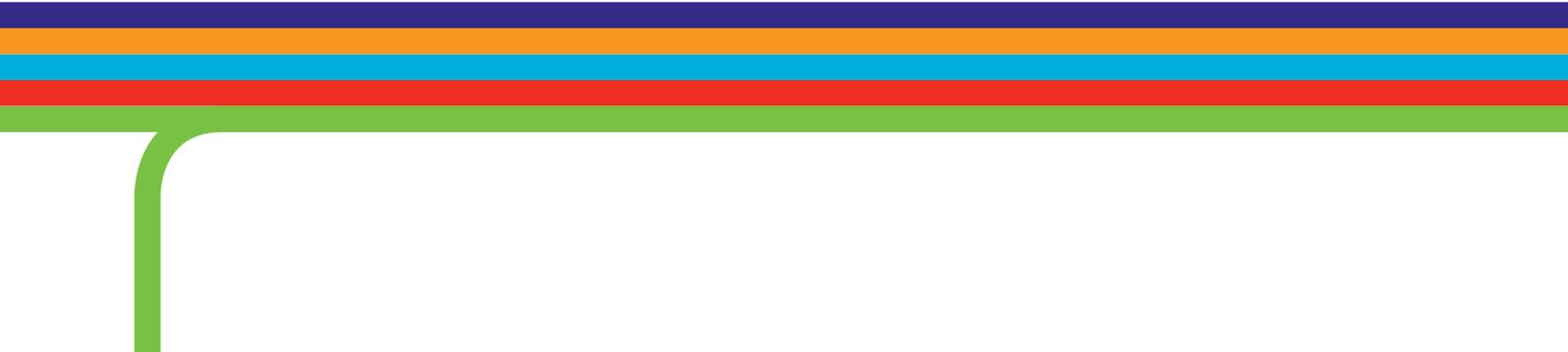
The Lean Six Sigma Pocket Toolbook, M. George et al., 2005 (The McGraw Hill Companies)

Six Sigma for Managers, G. Brue, 2002 (McGraw Hill)

Background

Descriptive statistics and data display are used to enable you to analyse the data under review and gain an understanding of the problems. A histogram provides basic information about the distribution and properties of a set of data. It shows you the types of frequency plots, which allow you to interpret the patterns they reveal.

What is important when evaluating the normality recommended for any set of continuous data is to learn about the basic characteristics and to evaluate whether you can apply certain statistical tests.




2.7 Scatter diagram (correlation)

Purpose

It is important to test a theory before changes are made to ensure you avoid quick fix solutions to problems that you think you know the cause of. A scatter diagram can help you identify the true strength of the relationship between the cause and effect of two variables and factors. This can help to ensure that you are focusing improvement efforts on the true cause of a problem.

When to use it

You can use a scatter diagram to determine the significance and strength of a relationship between two variables before making changes in practice. If the factors are related, evaluate the relationship by visually interpreting the width and tightness of the scatter.

How to use it

Step one

Using a data collection sheet, collect 50 or more samples of paired data (data related to both variables). You must have two measurements for each observation point or item, for example, the patient's age and recovery time.

Step two

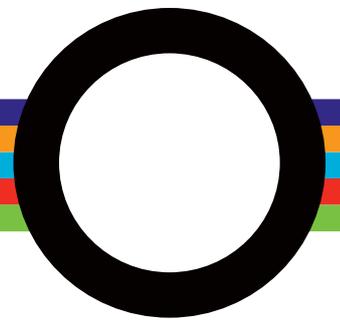
Draw lines on the diagram representing the horizontal (the suspected cause) and vertical (the suspected effect). Determine the measures and increments and label each line.

Step three

Plot the results on the scatter diagram.

Step four

Interpret the results by visual interpretation, considering the width and tightness of the scatter.



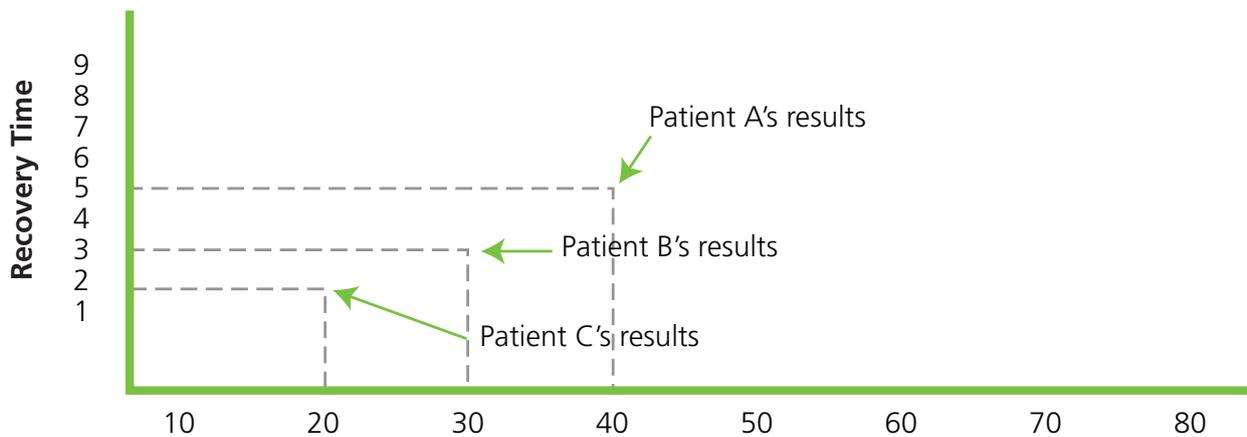
Example

You want to test the theory of a possible relationship between the age of a patient and recovery time following an operation.

1. Collect the data

Patient	Age	Recovery time (days)
A	40	5
B	30	3
C	20	2
D	55	6
E	63	7

2. Plot the results on the scatter diagram

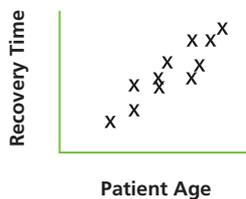


Plot all of the paired measurements onto the scatter diagram. If data values are repeated and fall on the same point, draw a circle around that point as many times as it is repeated.

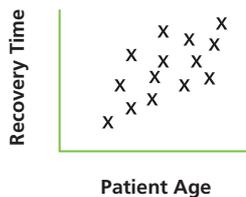
3. Interpret the results

The scatter diagram cannot prove a cause and effect relationship. However, it does suggest the strength of a relationship between two variables. The stronger the relationship suggested, the greater the likelihood that a change in one of the variables will affect a change in the other.

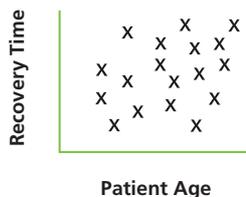
The five diagrams below show the various patterns that scatter diagrams can have, together with explanations of how you would interpret each pattern.



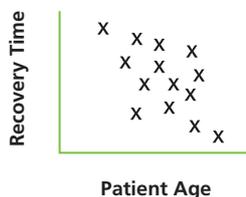
A positive correlation.
Recovery times are likely to increase as patient age increases.



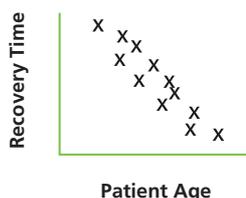
A possible positive correlation.
Other variables in addition to patient age may affect recovery time.



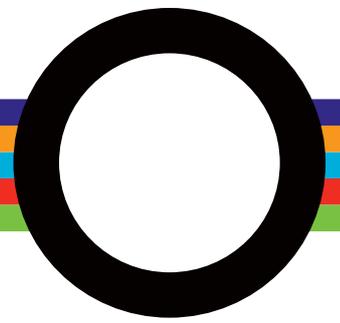
No correlation.
There is no demonstrated connection between patient age and recovery time.



A possible negative correlation.
Other variables in addition to patient age may affect recovery time.



A negative correlation.
This diagram suggests that recovery time is likely to decrease as patient age increases.



What next?

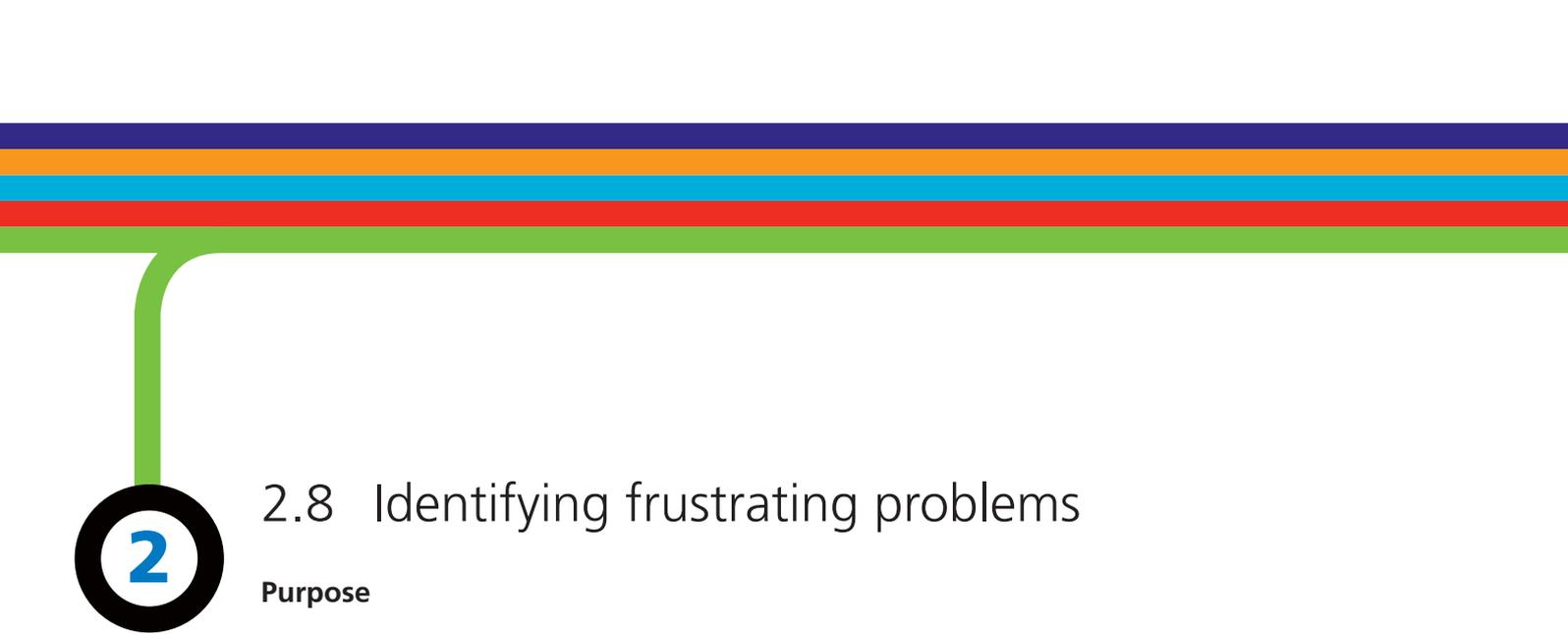
If the scatter diagram shows an effect then you can confidently continue with your improvement effort. If the results show no relationship, you could test another theory. This way you have avoided jumping to conclusions and making changes that may make matters worse.

A cautionary note – a scatter diagram shows patterns in data and can help you to indicate the existence of a relationship, but the diagram may not confirm for sure that there is a cause and effect relationship between the two variables as there may be other factors that affect the variables tested.

Additional resources

Books

The Six Sigma Way Team Fieldbook, P. Pande et al., 2002 (The McGraw Hill Companies)



2

2.8 Identifying frustrating problems

Purpose

This simple approach shows you how to illustrate (literally draw), discuss and solve problems in your working environment. These problems may be small, but can be frustrating and impact on performance, time and morale. This technique brings these problems out into the open, helping teams to identify and solve them.

When to use it

If you feel that you and your team are working around problems day in day out, you can use this tool to make time to solve the underlying problems. Saving just minutes of time each day may allow you to do something more productive.

How to use it

You should aim to do this over a couple of weeks, during a time when most of the team are around. You may find that it helps if the team understands the benefits of a visual and orderly workspace.

Step one

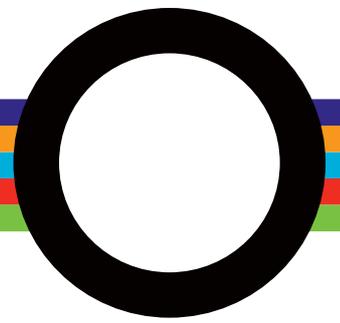
Draw a plan of the workspace, department or area of focus on a large piece of paper. It doesn't need to be a work of art, but should be recognisable to the team so they can label things easily.

Step two

Discuss and agree with the other members of the team that, over the next few days, they will identify problems as they go along by putting a cross on the workspace plan with a short note to describe the problem. For example 'no towels left' or 'had to get a pipette'.

Step three

Be flexible about the next steps. Give people the permission to solve problems as they emerge. Focus on creating interest and curiosity, making sure that you are positive about people, acknowledging small and seemingly trivial problems. Encourage people to use small tests of change to see if their ideas work in practice.



Step four

Discuss at team meetings. Highlight how some of the solutions have become new habits and spot any problems. Some issues may need alternative solutions. Tools like [brainstorming](#) may help if ideas haven't worked, or are hard to identify. Some tricky problems may need to involve other people, or may need to have a stronger project planning emphasis.

Step five

Keep the picture of the 'niggles' in a prominent place until most of them are solved, especially those that have a longer lead in time. You should be able to do most of the work within a couple of weeks.

What next?

Review things to see if there is any slippage: the focus is 'make time to save time'.

If there are issues that are outside your team, these may take longer to solve. However, there are a couple of strategies that you can try:

- Ask the right person outside the team 'how can this team make your job easier?' and then tell them how they can make your job easier.
- Build up a case for improvement by identifying indicative costs for the amount of time wasted. You'll need to spend a bit more time measuring and calculating the cost. For example, multiply the time spent by staffing costs (don't forget to include on-costs).

Both may require project planning.

Other useful tools and techniques

Building trust can help staff to express themselves, whilst [managing conflict](#) can help if staff feel defensive about a problem in their area. [Lean](#) principles can help to eliminate duplication and steps that contribute to waste.

A number of other tools that help with building a visual picture of processes and departments may be useful as part of your next steps, for example, [process mapping](#) and [spaghetti diagram](#). The [spaghetti diagram](#) focuses on flow through the workspace in a very visual way. [Sort and shine](#) is an approach to organising the workspace and helping to build visual prompts to reduce time wasted hunting for things which aren't in the right place.

3

Stakeholder and user involvement

Stakeholder and user involvement – an overview

Purpose

The tools within this section can help you understand who the key stakeholders of your service improvement initiative are and how to engage these groups.

Involving the key groups and understanding and acting on their perspectives will help to ensure that the changes are sustainable and will produce the best outcomes.

When to use it

Stakeholder analysis should begin at the very first stage of the project to identify those who should be immediately involved. It should be used as the [scope of your project](#) is being defined.

You will begin to gather [staff perceptions](#) and gain [patient perspectives](#) in the 'define and scope' stage of your project, when seeking an understanding of the root causes. You can continue gathering perspectives throughout all the stages of your project. They are also particularly significant in the 'design and plan' and 'pilot and implement' stages.

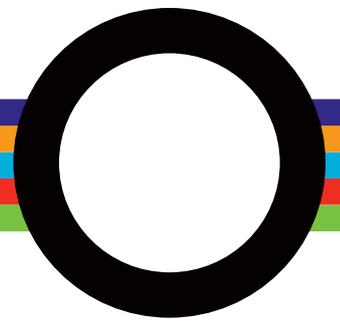
It is very important that you revisit the tools and the plans that you have made as a result of using them, at regular intervals throughout the project. This will help you to ensure that key stakeholders are kept up to date with your work and involved at the relevant stages. This will help you complete a successful and sustainable service improvement project.

How to use it

The specific details for each of the tools can be found in the relevant sub section:

- 3.1 [Stakeholder analysis](#)
- 3.2 [Communications matrix](#)
- 3.3 [Patient perspectives](#)
- 3.4 [Staff perceptions](#)
- 3.5 [Clinical engagement \(in an acute setting\)](#)

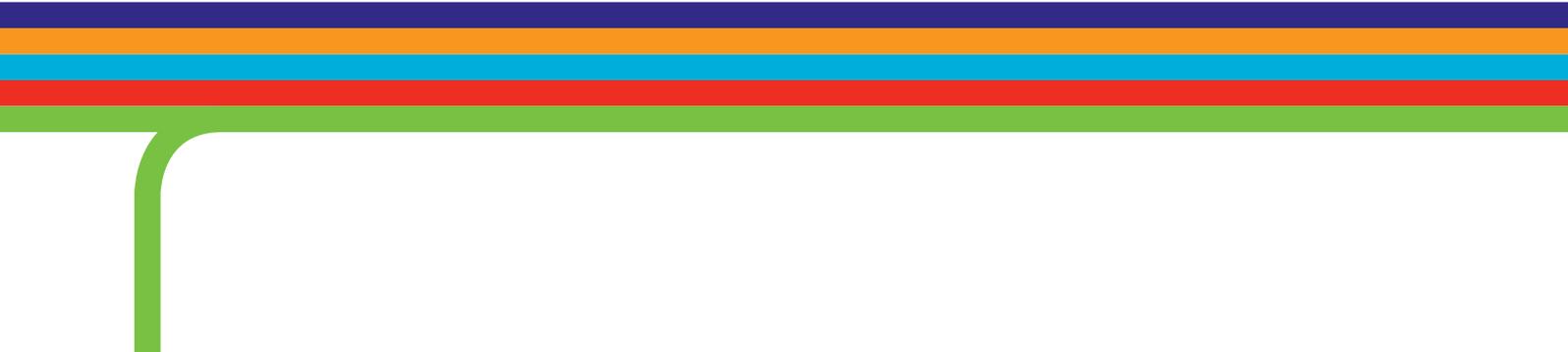
When using these tools, it may be helpful to refer to the [human dimensions of change](#) section. This will give you further insight into understanding others' perspectives and help you to involve people in the most effective way.



What next?

After identifying your stakeholders at each stage, you will be able to involve groups in identifying issues and deciding the actions to be taken and then engage others through communication.

This will put your service improvement project in a strong position to progress to the next stage, where you can use these same tools to make sure work is carried out in a way that will improve your chances of success.



3

3.1 Stakeholder analysis

Purpose

To improve service delivery processes, you need to actively engage a wide variety of people such as clinicians, administrative staff, patients and user groups. A stakeholder analysis enables you to identify everyone who needs to be involved in a change project. The more important the stakeholder is to the success of the project, the more time and resources you need to devote to maintaining their involvement and commitment.

When to use it

Stakeholder analysis is one of the first steps you should take in any change project. It can help you avoid conflict and delays caused by inadvertently failing to involve key people.

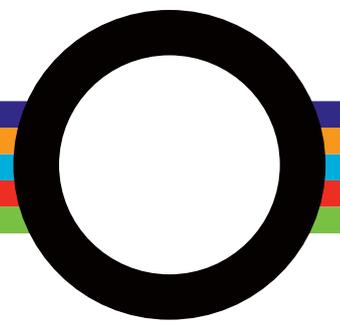
How to use it

Step one: identify your stakeholders

One way of doing this is by assembling a group of experts, especially those with good networks. The experts then brainstorm a list of all the people and groups likely to be affected by the proposed change. The list is recorded for the group to see.

Use the '9 Cs' to ensure that you have included all relevant stakeholders:

- Commissioners: those who pay the organisation to do things
- Customers: those who acquire and use the organisation's products
- Collaborators: those with whom the organisation works to develop and deliver products
- Contributors: those from whom the organisation acquires content for products
- Channels: those who provide the organisation with a route to a market or customer
- Commentators: those whose opinions of the organisation are heard by customers and others
- Consumers: those who are served by our customers: i.e. patients, families, users
- Champions: those who believe in and will actively promote the project
- Competitors: those working in the same area who offer similar or alternative services



Step two: prioritise your stakeholders

Once the list of names has been generated, analyse the list in terms of power, influence and the extent to which they are affected by the project or change. Each name is inserted into a four sector table.

Four sector table

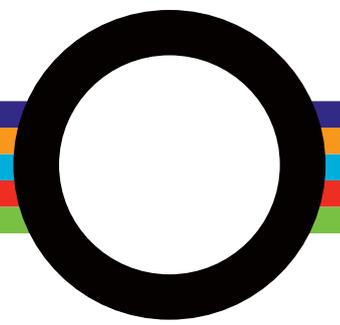
High power	Satisfy Opinion formers. Keep them satisfied with what is happening and review your analysis of their position regularly.	Manage Key stakeholders who should be fully engaged through full communication and consultation.
Low power	Monitor This group may be ignored if time and resources are stretched.	Inform Patients often fall into this category. It may be helpful to take steps to increase their influence by organising them into groups or taking active consultative work.
	Low impact/stake holding	High impact/stake holding

Larger projects, with many stakeholders may use a nine sector table to provide greater definition of the stakeholders.

Nine sector table

High power			
Moderate power			
Little or no power			
	Little or no impact	Moderate impact	High impact

Having identified the stakeholders, prepare a readiness for change matrix to see who is for or against the proposals. This will also help you define any influencing activities that might be needed.



	In Favour	Neutral	Opposed
Dr Jones			
Dr Hyde		Movement needed	
A & E			

Step three: understand your key stakeholders

You now need to know more about your key stakeholders: how are they likely to feel about and react to your project? You also need to know how best to engage and communicate with them.

Key questions to help you understand your stakeholders include:

- What financial or emotional interest do they have in the outcome of your work? Is it positive or negative?
- What motivates them most of all?
- What information do they want from you?
- How do they want to receive information from you? What is the best way of communicating your message to them?
- What is their current opinion of your work? Is it based on accurate information?
- Who influences their opinions generally and who influences their opinion of you? Do some of these influencers therefore become important stakeholders in their own right?
- If they are unlikely to be positive, what will win them around to support your project?
- If you don't think you will be able to win them around, how will you manage their opposition?
- Who else might be influenced by their opinions? Do these people become stakeholders in their own right?

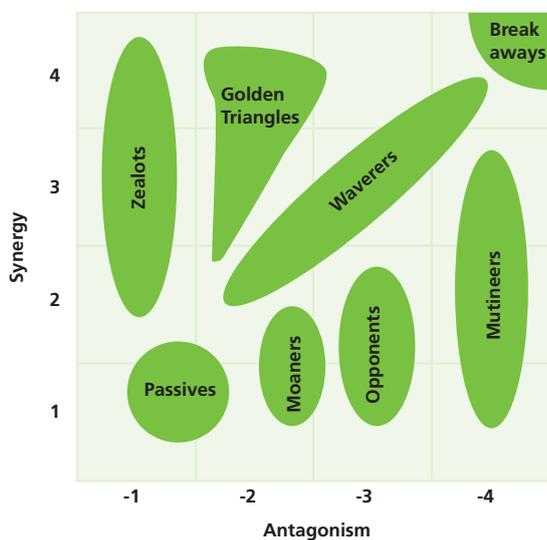
Often the best way to answer these questions is to talk to your stakeholders directly. People are usually quite open about their views - asking their opinions can be the first step in building a successful relationship with them.

Step four: manage your stakeholders

The analysis is useless if it doesn't lead to action. The project team should devise actions to win round doubters and sustain and enthuse supporters.

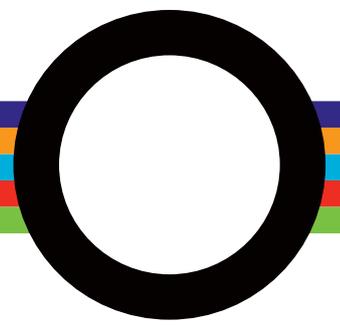
A second model for analysing stakeholders is to examine their degree of synergy against their level of antagonism (see diagram). People with low synergy and moderate antagonism are your opponents; those with high synergy and low antagonism are your unthinking supporters.

Synergy / antagonists analysis



Examples

As part of a change project to improve systems for clinical coding, it was proposed to implement source coding by consultants. The project manager asked the work group to identify everyone who could be involved or affected by such a change. The list was a long one, so the team assessed their relative power and influence within the system and produced the following analysis.

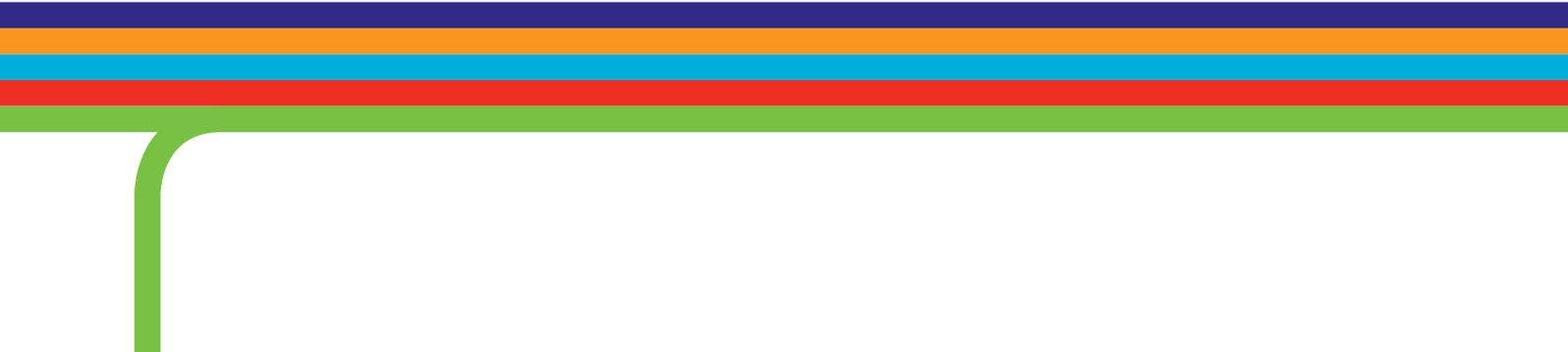


High power	Chief executive Finance director BMA rep	Consultant medical staff Clinical coding manager Finance creditor staff Medical director Primary care trust Clinical governance lead
Low power	Medical records staff Medical secretaries	Clinical coding staff Clinical audit Junior doctors IT systems manager
	Low impact/stake holding	High impact/stake holding

Using the analysis, the team then designed membership for the project board (see [project management](#)) and a communications plan to keep people informed and involved. This was followed by a [PDSA cycle](#) pilot trying out various aspects of the suggested change in practice.

What next?

Once you have identified and categorised the stakeholders, you can use the listings to devise a communications plan setting out what information needs to be given to which people and how. You should also prepare a briefing note for project team members to ensure that everyone is aware of the methods to be used. The team leading the project needs to allocate responsibility and put relevant monitoring arrangements in place.


3

3.2 Communications matrix

Purpose

The communications matrix is a tool for proactively planning communications on a project. If you want to keep colleagues and patients on board with your proposed changes, you must communicate with them. Using this tool helps to make sure you have thought of everyone. The time you spend drawing up and maintaining the framework is saved a hundredfold during any project.

When to use it

If you have already made a lot of improvements to your service, the next phase will not be easy - the easy stuff has already been done. The communications matrix can help when you encounter more resistance. This tool is excellent for preplanning with groups.

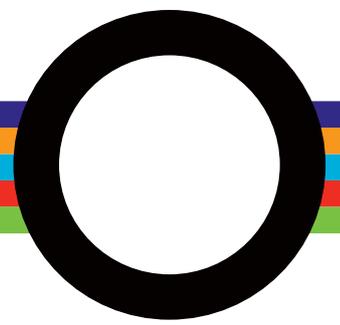
How to use it

Step one

Start by listing all the individuals and groups whom you will need to communicate with and listen to (taken from the stakeholder analysis) along one axis. Now list all the topics or information that will need to be communicated along the other axis. The intersecting cells describe how the communication will be done.

Step two

Next, send the matrix to all participants (with any politically sensitive items removed) so that people know the whos, hows and whens of communication - and the part they will play. People may complain that they, or others, have been left out of important parts, but these conversations are shorter and much more productive than complaints about lack of communication after the event.



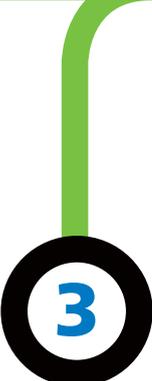
Examples

This example details a project introducing a new PC system in a GP surgery, plus the trialling of new software.

	Dr Browne (Dentist)	PCT Dental Manager	PEC Dental Rep	Mandy, Dental Nurse	Sarah, Practice Manager	Chris, IT Advisor	Patients
Definition of project aims	Member of project group	Advise on policy issues	Speak with colleagues about concerns, report to project group	Member of project group	Member of project group	Attend project group meetings	
Disruption to surgery	Agreed at project group meeting			Agreed at project group meeting	Agreed at project group meeting	Agreed at project group meeting	Leaflet drafted by Sarah. Posters
Sharing the plan	Chris to brief individually	Send copy of plan	Send copy of plan	Chris to brief individually	Chris to brief individually	Chris to brief individually	
Progress reporting	Informed by Sarah of all variance in plans	Informed of changes to resource use or timetable	Informed of major departures from plan	Told by Sarah of changes affecting her	Monitors activity against project plan	Informed by Sarah of all variance in plans	
Times of training	Memo from Sarah			Memo from Sarah			
Outcome of software evaluation	Copy of evaluation report. Presents findings at clinical governance meeting	Copy of evaluation report	Copy of evaluation report. Attends clinical governance meeting		Data collected sent to Chris	Writes report on evaluation	
Etc.							

What next?

- If you haven't already done a [stakeholder analysis](#), you will need to do this first.
- Consider using a form of [project management](#).
- [Responsibility charting](#) helps clarify who is doing what, preventing issues slipping through the net.
- [Action planning](#) ensures you have addressed everything you need to deliver a successful change.
- Decide on a [methodology for measuring benefits](#) at the start of your change so you are able to prove the benefits.



3

3.3 Patient perspectives

It is often those closest to the process that are best placed to give useful feedback on the way services work and how they can be improved. As patients experience the procedure or service first hand, they have a unique and highly relevant perspective.

Patients' input into designing services can be invaluable as they have an experience that staff can't access. Also, seeing services from a patient's point of view opens up real opportunities for improvement that may not have been considered before.

When to use it

It is important to gain the patient perspective any time you want to improve a service or process. It is only at the level of each patient experience that the true quality of care can be measured.

You should aim to gain the patient perspective when redesigning services, both before and after care has been received to check the improvement ideas have worked.

How to use it

If you want to get a true picture of the patient perspective, you need to decide upon clear objectives for what you are trying to achieve. Plan what you are going to do and decide on the [scope of the project](#). Don't ask for input if you have no intention of making changes - tokenism is easy to spot and offensive to many.

There are six main approaches to help you gain patient perspective.

1. Patient journey walk-through
2. Shadowing a patient
3. Experience based design (ebd)
4. Patient questionnaires
5. Focus groups
6. Semi-structured patient interviews

Patient journey walk through

A patient journey walk through is undertaken by a member of staff to understand a process from the patient's perspective. It may not reveal as much information as patient shadowing because the real and felt emotions and perceptions of the patient are not available.

However, it is especially useful for gaining insight into the overall process and is much quicker and easier to organise than patient shadowing.

For maximum benefit, the person conducting the walk through should try to mentally put themselves in the patient's shoes. Try not to conduct the walk-through at maximum speed – observe everything you can and ask yourself:

- If there is a waiting area, what does it feel like to actually sit in the chairs?
- If leaflets or posters are available for patient information – read them. Are they clear and are the messages in different areas consistent?
- Where are patients sent?
- How far do they walk?
- What questions are they asked?
- How long do they wait?
- What do they see, hear, touch and feel?

As you do the walk-through, look for waste steps (those things that do not add value to the patient experience).

Shadowing a patient

This is when a member of staff or a volunteer accompanies a patient on their journey through the health system. Ideally, the shadower will be unfamiliar with the process and should also be comfortable asking 'why?' This is a similar approach to a [tracer study](#).

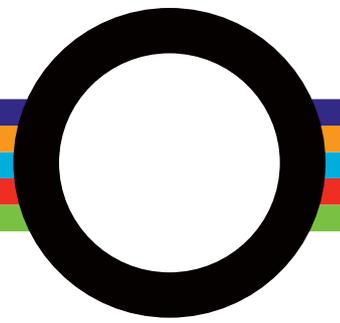
Shadowing provides objective, observational feedback that needs to be balanced by other approaches, for example by obtaining the views of the staff providing the service.

Using this technique allows you to record patient movement in time and space, as well as capturing perceptions of the service. This enables you to build up a comprehensive picture of movement, combined with a flow diagram of actions and a qualitative perception of the process.

While the patient is being shadowed, the shadower can use interview techniques and observation to supplement the information provided by the patient.

You will need to:

- Establish what you are trying to achieve and how shadowing will help you achieve it
- Clarify why this process is appropriate and what aspect of the patient pathway you want to focus on (e.g. tracking the admission process)
- Develop a template to capture key timings e.g. the time the patient arrived, the time first seen by a clinician, the time referred for tests etc.
- Ensure the shadower fully understands and is comfortable with their role
- Ensure the patient fully understands and is comfortable with their role; get their informed consent to participate
- Write an information sheet about the aims, what is involved and the expected outcomes of the study, which can be given to the patient



- Make it clear that the presence of the shadower will not influence the care the patient receives
- Observe how the patient is treated by members of staff
- Observe how easy/difficult it is for the patient to find their way around the hospital. What goes smoothly for the patient? Are any tasks duplicated?
- Observe the environment
- Provide support for the patient and shadower; acknowledge their time and effort
- Feed back to the patient and the shadower on how their work has helped with service improvement

Experience based design (ebd)

Experienced based design (ebd) is an exciting new way of bringing patients and staff together to share the role of improving care and redesigning services. It has been developed by the NHS Institute for Innovation and Improvement as a way of helping frontline NHS teams make the improvements their patients really want.

While leading global companies have used similar approaches for years, the experience based design approach is very new for the NHS. Where it has been used in the health service, it is having amazing results - delivering the sort of care pathways that leave patients feeling safer, happier and more valued and making staff feel more positive, rewarded and empowered.

What is special about the ebd approach?

Using experience to design better healthcare is unique in the way that it focuses so strongly on capturing and understanding patients', carers' and staff experiences of services, not just their views of the process like the speed and efficiency at which they travel through the system.

Instead, this approach deliberately draws out the subjective, personal feelings a patient or carer experiences at crucial points in the care pathway. It does this by:

- encouraging and supporting patients and carers to 'tell their stories'
- using these stories to pinpoint those parts of the care pathway where the user's experience is most powerfully shaped (the 'touch points')
- working with patients, carers and frontline staff to redesign these experiences rather than just systems and processes.

Patient questionnaires

This is a straightforward way of getting information from large numbers of people. Easy to administer, you can also use questionnaires to measure levels of satisfaction with a process or service.

Questionnaires are useful for measuring baseline information and evaluating change over time.

Creating a questionnaire

- Be clear about what you are trying to accomplish, what you want the information for and how you will use the results.
- Involve patients and service users in designing questions.
- Structure questions carefully: consider the balance between multiple choice (yes/no or Likert 5 point scale, 1. strongly agree through to 5. strongly disagree) and free text questions. Multiple choice questions are quicker for the user to complete and for you to analyse. Free text questions often provide more valuable data, but take longer to analyse.
- Keep it short: it should take no more than 10 minutes to complete.
- Always pilot the questionnaire: try using small tests of change ([PDSA](#)) to refine and improve questions.
- Decide whether the questionnaire will be anonymous.
- Think about how you will reach your target group. Leaving questionnaires in waiting rooms, day rooms or handing them out at reception is a good way to reach patients and carers. Remember to provide pens. If posting, include a freepost or SAE for returns.
- Snap shot audits are a good way to get a representative sample of views from patients using a specific service. This is a short questionnaire given to every patient who attends a particular clinic on a particular day, or over a particular week.

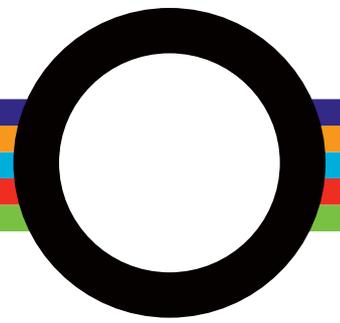
Focus groups

A focus group is an informal collection of people sharing common characteristics. They meet to discuss and debate their experiences about a specific topic or problem, e.g. patients who have recently visited the accident and emergency department.

Focus groups will usually consist of 6-12 people who meet on one occasion only. They are a useful way of listening to a wide range of experiences of a single area.

Holding a focus group

- Establish how you will fund expenses before setting up the group.
- Clarify the purpose, objectives and timings of the group.
- Send an invitation letter explaining the process, what is expected of the patients and what the expected outcomes are.
- The focus group should last between one and two hours.



- Make sure the venue is accessible to all participants.
- Provide refreshments.
- Agree ground rules and an agenda for the group.
- Use prepared questions and themes relating to the topic for discussion.
- Have a good facilitator who will not seek to lead but has strategies to help the group if they get stuck.
- After the focus group feedback outcomes/progress to the group.

Semi-structured patient interviews

Semi-structured one-to-one interviews are used to collect qualitative data. They aim to understand the respondent's point of view, rather than make generalisations.

They enable you to delve more deeply and ask 'why?' This often yields more information and emotional response than a questionnaire and generates improvement ideas that can be tested out in practice. The patient also has the opportunity to ask for clarification. However, these interviews are more time consuming to conduct and analyse.

Conducting an interview

- Gain each person's consent; guarantee confidentiality and anonymity.
- Think about how you will gain perspectives from the diverse population who use services; you may need an interpreter. Contact your Patient Advice and Liaison Team for help if necessary.
- Consider using an interviewer who is external to the topic being discussed e.g. from another department or an external organisation.
- Explain the purpose of the interview.
- Use open ended questions. Some will be planned ('Tell me about...') and some will arise naturally during the interview ('You said a moment ago...', 'Can you tell me more...?').
- Clarify what is being said so there are no misunderstandings.
- Aim for a conversational feel: questions should be asked when it feels appropriate; they may be planned or spontaneous. The wording of the questions may vary in different interviews.
- Keep the number of interviews manageable; many improvement ideas can come from just a few interviews.

Examples

1. Using patient questionnaires to prioritise areas for action

Poole Hospital NHS Trust compiled an action plan based on their outpatient survey responses. They identified three main areas for action:

- communication with patients prior to their appointment
- information given to patients
- the quality of the appointment itself.

The action plan was distributed to all staff working within the outpatients department and also to staff in areas such as x-ray, pathology and pharmacy who regularly interacted with patients attending outpatient appointments.

The action plan formed part of the trust's quarterly governance development plan report submitted to their strategic health authority.

A follow-up study took place some months later. This consisted of interviews with individual patients following their consultations and concentrated on clinics where there was evidence of long waits and possible organisational difficulties.

The findings were, in the main, very positive and the attitude and professionalism of staff was praised. Areas of concern mirrored those previously identified in the survey.

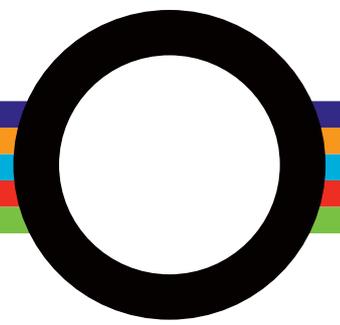
2. Using patient shadowing to identify where improvements are needed

As part of the redesign of a colposcopy service in the Home Counties, patient shadowing was used to identify possible areas of improvement from the patients' perspective. The aim was to collect information about a number of factors including:

- actual time spent waiting or being seen
- the standard of verbal, printed and signposted information
- staff responses to questions and specific needs
- the ambience of each area visited.

During a three-week period, three surgeons each had clinics shadowed. The clinic nurse approached patients, explained about shadowing and gave them the information sheet. The patients who agreed to participate were told that they could ask the shadower to stop at any time.

The shadower waited with the patient, following them wherever they went and asked appropriate questions. During the consultation or procedure, the shadower remained either in the waiting area, or discreetly in the background, observing. After each activity, the shadower asked for the patient's reactions to what had happened. The patient was able to see what the shadower was writing if they wanted. After the appointment, the shadower asked general questions: what could have been done



better? What was particularly good? The patient also had the opportunity to add anything they chose. After the patient left, the shadower added own comments in the box provided. Clinic staff comments were also recorded.

Patients mentioned:

- The length of waiting time: in outpatients and for appointments.
- That a pessaries label was easily visible, causing patients to think it was part of their treatment.
- The need for a recovery area as patients did not always feel ready to drive home immediately after treatment.
- That they wanted some way of obtaining refreshments without walking outside the building.

Staff highlighted:

- That conversations in side rooms could be heard in the treatment room.
- That the consultant had to wait while the patient was with the nurse before and after treatment.

As a result of the exercise, these changes were made:

- Music is now played in the waiting area and in the colposcopy room.
- The pessaries label has been removed.
- The appointment system has been redesigned to include pooled referrals and partial booking.
- The colposcopy unit has been soundproofed.
- A second nurse in the clinic means that the doctor is not kept waiting, so more patients are now seen.

What next?

Depending on what stage you have reached in the improvement project will determine what your next steps are. However, whatever stage you are at, you must always feed back to the patients involved how their information is being used. You should also combine your patient perspectives with any quantitative data that you have collected to help shape changes to the service.

Tools that may be useful once you have collected patient perspectives include:

- [Using an affinity diagram](#) will enable you to theme and sort all the potential areas for improvement that you have identified.
- [PDSA](#) cycles provide a framework for developing, testing and implementing changes that lead to improvement.
- [Project management](#) can help you make larger, more formal changes.

Additional resources

Books

NHS Institute for Innovation and Improvement, *Improvement Leaders' Guide: Involving Patients and Carers*, 2005

Websites

www.institute.nhs.uk/ebd - for more information on experience based design (ebd)

www.pickereurope.org - Picker Institute Europe – a series of improving patient experience factsheets, designed to help healthcare organisations share approaches to improving patient care. Each issue focuses on a specific theme and features examples of good practice.

www.sociology.org.uk – Sociology Central – a useful resource with more information on semi-structured interviews.

Background

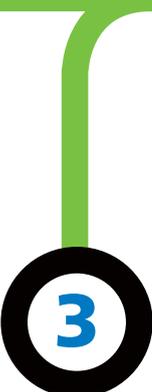
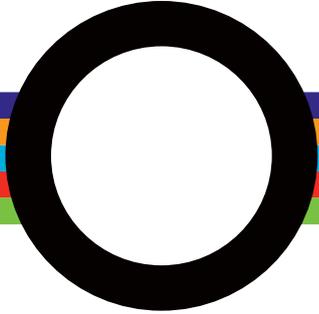
The involvement of patients, carers and the public in decision making is at the heart of the modernisation of the NHS and is now a central theme of national and local policy.

The Kennedy Report on the Bristol Royal Infirmary Inquiry is acknowledged to have had a great impact on the delivery of healthcare in the UK. Published in July 2001, the report recommended that 'the perspectives of patients and of the public must be heard and taken into account'.

Acknowledgements

Improvement Leaders' Guide: Involving Patients and Carers, NHS Institute for Innovation and Improvement

Robert James, Patient Consultant



3

3.4 Staff perceptions

Purpose

Understanding how staff view the organisation can help service improvement work by identifying issues that need to be addressed and by monitoring views of change. This tool describes a number of ways in which you can learn about staff perceptions to help inform service improvement. Change that is initiated and supported by staff is generally more successful.

When to use it

Whenever you are considering any major service improvement, your work will be enhanced by including perspectives from the staff who are involved in that service. This will help to ensure that you make the right changes and that you have buy-in from staff.

How to use it

There are many different methods of collecting staff views. Which one you choose will depend on the resources you have available and what stage you are at in your project. You also need to consider the type of information you want to get and how formal or informal you want the process to be.

1. Snap shot

Ask all staff in your team or department to write down their five top moans about the service they work in. You can then use an [affinity diagram](#) to theme the suggestions. This method requires few resources and enables you to identify areas for improvement quickly, although it may not identify the underlying causes.

2. Questionnaires

Easy to administer, questionnaires can capture the perceptions and experiences of staff, patients, users and carers. You can also use them to measure levels of satisfaction with a process or service. Responses can be anonymous, allowing staff who do not feel confident enough to share their views in an open forum to do so.

However, questionnaires may not identify underlying issues or concerns. Asking the right questions is critical and developing a questionnaire that does this can take time, as can analysing the results.

Guide notes

- Be clear about what you are trying to accomplish, what you want the information for and how you will use the results.
- Involve patients and service users in devising questions.
- Structure questions carefully - consider the balance between multiple choice (yes/no or Likert scale) and free text questions. Multiple choice questions are quicker for the user to complete and for you to analyse. Free text questions often provide more valuable data if completed but take longer to analyse.
- Keep it short - it should take no more than 10 minutes to complete.
- Always pilot the questionnaire - using small tests of change ([PDSA](#)) is a useful way to refine and improve questions.
- Make sure respondents know why you are conducting the questionnaire and what the results will be used for.

3. Informal conversations

Some staff may be more open in an informal setting. Having a conversation will allow you to ask questions that will help you to really understand the point that is being made. Having conversations with several individuals or small groups may give feedback that is representative of the whole team.

Make sure it is not always the same staff whose opinion you seek for improvement ideas. Include everyone, particularly those who are hard to engage. Getting their views may take time, but will give you useful insights.

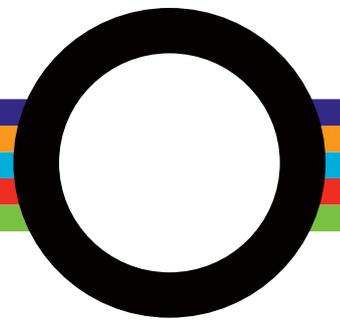
4. Focus groups

Focus groups involve encouraging an invited group of participants to share their thoughts, feelings, attitudes and ideas on a certain subject. They will help you get a deeper understanding of the issues in a particular area. Focus groups can also be very helpful in getting buy-in for a project.

Focus groups are relatively easy to set up and manage. However, they don't involve all staff so views may not be representative.

Guide notes

- Clarify the purpose and the key issues you want to explore.
- Groups should comprise 6-12 people. If the group gets too large consider splitting it into two sub groups.
- The focus group should last between one and two hours. Make sure the members are clear about how much time they need to allow for the session.
- Have a good facilitator who will not seek to lead, but has strategies to help the group if they get stuck.
- Agree ground rules for the group before you start e.g. respect for others' views and confidentiality.
- Explain what will happen to the information generated at the beginning of the session.



- Use prepared questions and themes relating to the topic for discussion.
- Feedback outcomes / progress to the group.

Examples

When East Sussex Hospital Trust decided to improve its theatre service, the trust decided to base their recommendations explicitly on the views of staff and patients, as well as research evidence.

There was a sense that the service was performing well - waiting list targets were being met and there was a stable and flexible work force. Nevertheless, staff saw scope for improvement. Previous initiatives had not included a process to hear the views of staff and patients.

One of the methods used to collect views from staff was focus groups. The team had initial fears about the effectiveness of this approach, concerned whether people would make the effort to attend and if they would be constructive or destructive. The team decided that multi-disciplinary sessions were crucial. They chose to arrange them in time that was set aside for the bi-monthly clinical governance half day – when theatres were closed for routine work. This would allow staff to attend during normal working hours.

Over 50 people attended over five sessions. They came from theatres, surgery, urology, nursing, anaesthetics, pathology, radiology, sterile supplies and the ward and were very positive about the event. Staff from outside the directorate who had previous facilitation experience helped with the sessions. This independence increased the success of the events.

Notes from the workshop listed issues to be addressed. They included better communication about the management of theatre lists, the need for distinction between emergency and non-emergency lists and better preparation of patients for surgery.

The recommendations from the focus groups were combined with the findings from the other methods used to collect patient and staff views and then grouped on the basis of practicality with a list of quick wins, as well as other issues that required more detailed attention and/or resources.

Recommendations were turned into actions that were circulated to attendees. This showed all those involved how their contribution was being used and gave them ownership of the changes.

What next?

For more information about engaging staff see [clinical engagement](#). To develop your understanding of your service further, you could gather [patient perspectives](#) to complement the perspective gained from staff.

Depending on the views of your staff, you may find these tools useful next steps:

- [an overview of creativity](#) to help you generate ways to overcome any issues raised
- [working with resistance](#)
- [human barriers to change](#)
- [the discomfort zone](#).



Additional resources

Websites

<http://sru.soc.surrey.ac.uk> – *Social Research Update* from the University of Surrey. Click on #19 for more information on focus groups

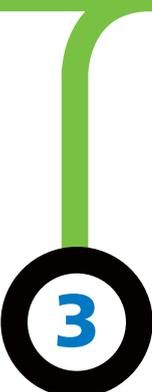
Background

The NHS Modernisation Agency's Research into practice teams promoted the spread and sustainability of service improvement through its programme of research, evaluation and development. They helped to build a body of knowledge that has practical application for staff working directly on improvement activities.

One of the key factors they identified was the early engagement of all staff affected by the change.

Acknowledgements

Effecting Change in Higher Education, The University of Bedfordshire



3

3.5 Clinical engagement in an acute setting

Purpose

Clinicians have a major influence over patient care, from making the diagnosis to determining the pathway of care. They also have a wealth of knowledge about the strengths and weaknesses of NHS systems. Whilst clinicians and managers may sometimes take a different approach to improvement, they are both an integral part of achieving successful and lasting change.

Clinicians have a professional responsibility to their patients and employing organisation, but are also answerable to their regulatory bodies - in the case of doctors, the General Medical Council. When the organisation proposes process or clinical change contrary to that expected by their professional bodies, it can cause conflict. This is why clinicians should be part of every change process.

When to use it

You should involve clinicians from the outset. Their input can be invaluable when you are formulating a project plan that is practical, sensible and doable. They are in a good position to determine what will work and what won't.

How to use it

At the start of the project, engage a clinician who is a natural innovator to help you plan and avoid pitfalls. These are the people most likely to lead change by evolution and can help to engage colleagues. It is even better if these clinicians have been working in the trust for some time and have a good reputation, as this gives them a natural authority. Success will bring other clinicians along, but you will need to convince the most resistant that change is for the better by example.

Opinion formers are often resistant to change and can easily convince others to stay within their comfort zone. If this is the case, and you are attempting to persuade a group of clinicians to make a change, the process is likely to fail.

To increase your chances of success, you should:

- Have a well prepared project plan with clear objectives to benefit patient care.
- Focus on quality improvement rather than delivering targets.
- Be well informed with accurate facts and figures.
- Get to know your clinicians. Start with the natural innovators - clinicians who have a good reputation and who deliver on commitments outside their normal clinical work.
- Listen to clinicians - they have knowledge and experience and the majority wish for improvement.
- Address opposition.
- Engage individually rather than just in a group. This will enable detailed discussions of the ideas proposed.
- Meet at a convenient time to minimise loss of clinical activity.
- Lead the late adopters by example. You could arrange visits to reputable centres that have successfully achieved change.
- Communicate regularly about progress and see the project through.

What next?

The following tools will help when considering clinical engagement:

- [Stakeholder analysis](#)
- [Bullet proofing](#)
- [Resistance – addressing uncertainty](#)
- [Listening – importance of this skill](#)

Ensure clinician involvement at all stages of your improvement project.

Additional resources

Books

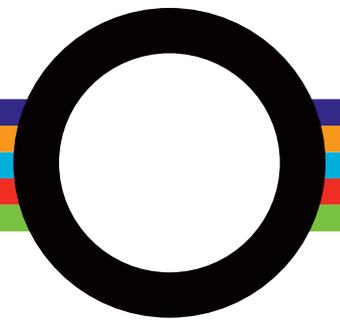
Engaging Physicians in a Shared Quality Agenda, Institute for Healthcare Improvement (United States),

How to Achieve Effective Clinical Engagement and Leadership when Working Across Organisational Boundaries – Practical Recommendations, F. Woodward, 2007

Enhancing Engagement in Medical Leadership Project, Academy of Medical Royal Colleges and NHS Institute for Innovation and Improvement,

Engaging Clinicians in a Quality Agenda, Welsh Medicines Resource Centre,

Leading Physicians through Change: How to Achieve and Sustain Results, J. Silversin and M.J. Kornacki



4

Mapping the process

Mapping the process – an overview

Purpose

The mapping of processes is used to create a visual representation of the relevant steps in a patient's journey. Using these tools enables everyone involved in the different steps of the journey to see the overall picture of patient care and understand how complicated the journey can be for patients.

It also indicates how well the processes of care are working - giving your staff the opportunity to reflect on the way they work, diagnose any problems in the pathway and identify areas for improvement. Process mapping also promotes ownership of the steps in the patient journey, creates team building and helps to increase staff involvement in design and redesign of the processes involved.

These mapping tools can help you to identify points of inefficiency and duplication, highlighting any bottlenecks or constraints that slow down the flow of the patient journey. It also identifies the unhelpful variation in patient journeys that you need to minimise.

When to use it

No healthcare worker can know all the processes and people involved in a patient journey. If you want to give staff a broader perspective on what is happening (rather than what they think is happening), throughout the patient journey, these are the tools to use.

It is important that you map the journey before making any service changes, as all too often changes are made based on assumptions and gut reaction rather than fact.

Process mapping is not just for service providers to use: commissioners should use process mapping to support all redesign work and enable world class commissioning.

How to use it

Mapping processes is a very empowering tool. It needs to be undertaken by the staff who work the processes - the people who really know how things work. The process prompts good ideas and exposes frustrating problems. This helps teams to know where to start to make improvements that will have the biggest impact for patients, carers and staff.

There are different approaches to mapping patient journeys. Which one you select will depend upon:

- what you need to know
- resources and timescales
- engagement and interest of staff.

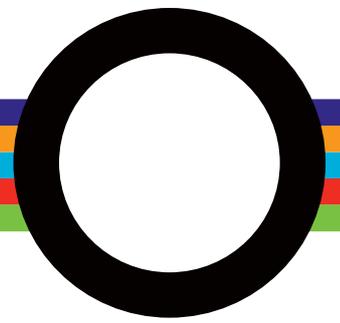


Each approach gives you a slightly different perspective and you can use more than one approach to help confirm findings. The key is to reflect on how things are currently and then decide what the ideal journey should be like. All approaches will reveal:

- unnecessary steps, handovers and delays
- waste, such as duplication of effort
- things that don't add value in the patient journey
- bottlenecks and constraints
- unhelpful variation in clinical and non clinical practice
- the potential for creating safer care
- an understanding of the patient experience
- where to undertake further analysis e.g. understand [demand and capacity](#) and the flow through particular parts of the journey.

The potential approaches include:

- 4.1 [Conventional process mapping](#)
- 4.2 [Value stream mapping](#)
- 4.3 [Spaghetti diagram](#)
- 4.4 [Mapping the last ten patients](#)
- 4.5 [Process templates](#)
- 4.6 [Tracer study](#)
- 4.7 [Sort and shine](#)



4

4.1 Conventional process mapping

Purpose

Conventional process mapping of the whole patient journey or diagnostic pathway is designed to bring together a range of people who represent the different roles and functions involved along the way. This enables everyone to discuss the actual steps taken through the journey/pathway from their own personal perspective.

This helps you to create a visual picture of how the pathway currently works, capturing the reality of the process, exposing areas of duplication, unhelpful variation and unnecessary steps. It also gives staff the opportunity to meet other people from across the pathway and take the time to consider things that work well or less well from a patient perspective.

Through these conversations, people can air the things that frustrate them on a daily basis, consider ways to remove these frustrations and come up with good ideas for service improvement.

This tool helps to build good working relationships within a team and across functional and organisational boundaries - with everyone focusing on making improvements that will have the biggest impact for better patient and staff experiences.

When to use it

You should use process mapping before making any service changes as it will help you gain a better understanding of how a whole patient pathway works. All too often changes are made without understanding the current processes sufficiently well, and can therefore result in making the process worse - or creating problems at another point in the journey.

How to use it

Step one

First, plan your mapping session:

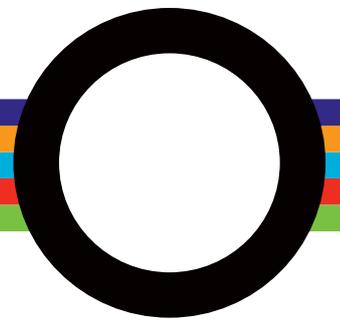
- Be clear about the purpose of the session.
- Decide if you need to meet with clinical, managerial and service leaders beforehand to ensure that they feel involved in, and committed to, the process. It is good to have a high level sponsor and identify champions early on who will publicly support the process and act as change agents.

- Decide who you will invite to get a broad perspective of the process. Consider which staff groups are involved in the relevant stages of patient care and invite representatives to map the patient journey. Don't forget to include staff like porters and administrative staff who often have quite different and useful perspectives from clinical staff. The process map will only be as good as the list of people who attend - there will be gaps if some staff aren't invited.
- Ascertain the knowledge level of the audience. For example, do service users and carers need additional preparation to feel comfortable contributing to the session?
- Decide the location. You need to have adequate space to put the mapping paper on a wall and for people to move about freely to discuss the process and do the mapping. Avoid meeting around a table: conventional process mapping is an active exercise.
- Decide how long the session will last. Make sure you allow sufficient time for analysing the map and developing an action plan to test improvements.
- Give people plenty of notice, especially clinical staff, to avoid disrupting clinical sessions (think of the six week rule – the agreed notice period if you want clinical staff to attend to prevent cancellation of patients).
- Plan dates for the follow up sessions from the outset so people can diary in advance.
- Decide whether it would be useful to have an external facilitator to run the session. If your group is larger than ten, a facilitator may be useful so you can chair the session and the facilitator can help you to keep on track. Remember, there is almost certainly someone in your organisation who has facilitated a process mapping session before, so if you are new to this don't hesitate to ask for help and use their experience.
- You may like to take photographs of key steps in the journey e.g. the sign for outpatients, diagnostics, theatre etc. to use as visual prompts on the day.

Step two

The tools you will need for the mapping process include:

- Mapping paper (lining paper is good)
- Good quality Post-it notes
- Marker pens
- Blu Tack
- Scissors
- Sellotape
- Flip charts (for ideas and niggles)
- Refreshments



Step three

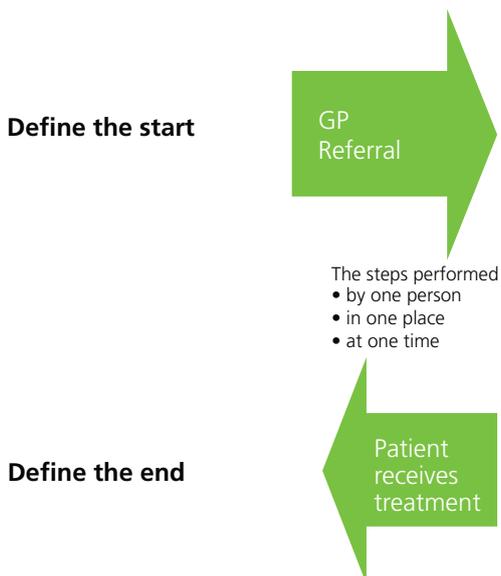
On the day, be there early so you can get the mapping paper onto the wall and prepare flip charts - one to capture ideas and the other to capture niggles. Write the pathway/ process that you are mapping clearly at the top of the paper.

Make sure the room layout is conducive to what you are trying to achieve. This is not a meeting. At the start of the session, restate the objective and give people the opportunity to introduce themselves by name, role etc.

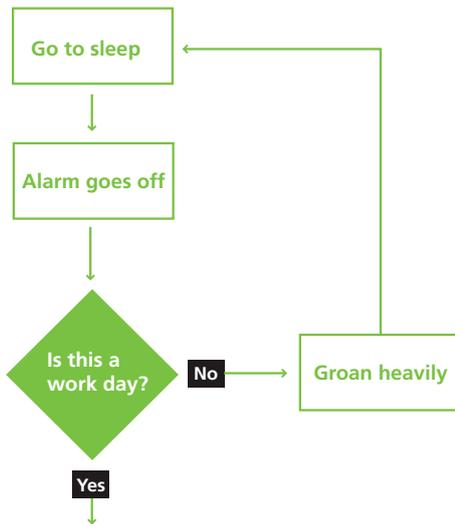
Agree the ground rules for the session. These might include openness, constructive challenge, listening, confidentiality, respect and others that the group decides.

The aim of process mapping is to make things clear and to provide insight. The best map is the simplest map that provides that insight.

It can be very useful to start with a high level process map of say, five to ten steps, which you set a time limit to achieve (e.g. 20 minutes). Define the start and end of the process you are looking at as this helps to establish scope, to identify significant issues and to frame the more detailed map.



You do not need to use lots of symbols. The example map representing steps for getting up in the morning has been drawn using only a box (representing the task or activities of the process), a diamond to indicate a question or decision point and an arrow to represent the direction of flow.

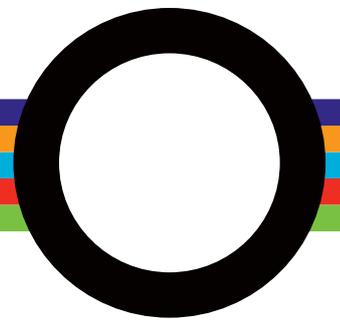


Step four

For complex processes, you may follow the simple process map with a more detailed process map, identifying all steps and rework loops. It is also helpful to establish roles and relationships within the more detailed process map, which can be used again in a later phase to show the impact of your improvement and redesign work.

The questions you should ask when analysing your map include:

- How many steps are there?
- How many hand offs are there? (Where a patient's care transfers from one person or department to another.) Are any of these unnecessary?
- Could some tasks be carried out by one person instead of several people?
- Is there any duplication of work?
- Are there any bottlenecks?
- How much error correction / rework is being carried out?
- How long does each step take?
- What is the approximate time between each step?
- Which tasks help to achieve the purpose and which ones do not? Can those that do not add value to patients be removed?
- Are we doing the right things in the process?
- Are we doing things in the right order?
- Is the right person doing it?
- What information do we give to patients at what stage and is the information useful?
- Should some tasks that are performed as part of another process be performed here?



Tips

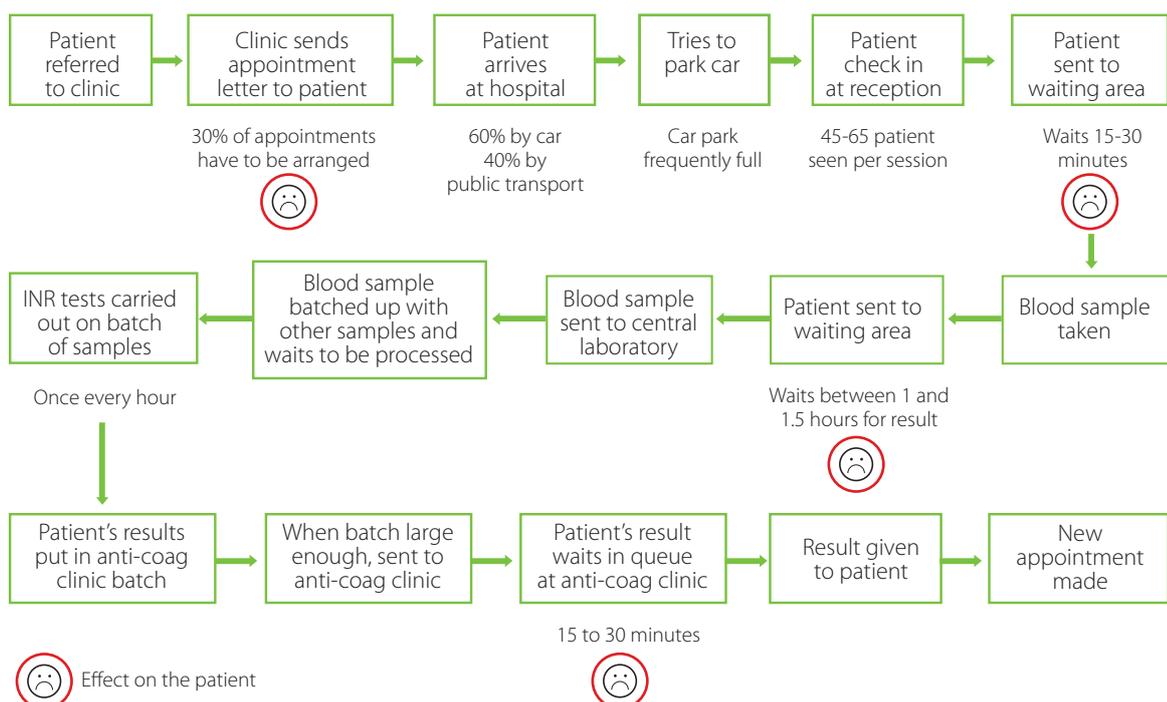
- Let your process map cross functional boundaries: you want to see the whole, end to end process, not just the piece of the process inside your department.
- Remember that improving one department or section does not always improve a service that flows through several departments. It is just as important to manage the interactions between departments as it is to manage the actions inside each department.
- Always map what actually happens in the current process rather than what you would like to be happening or what should be happening. You can start the session by mapping the ideal pathway and then moving to map the current state or vice versa.

Examples

Below is an example of a high level map followed by a detailed process map, which looks at the anticoagulant blood testing process carried out in a major hospital.



THE ANTICOAGULANT BLOOD TESTING PROCESS



What next?

Once the process map has been drawn, the next step is to identify where the process can be improved by redesigning or removing elements of it.

The key to success is to keep the patient at the centre of your plans and to consider the potential for a ripple effect through the organisation. Getting your part of the system right does not help the patient if another part of their journey is made worse as a result. Testing your ideas for improvement will help to show potential unwanted side effects of your changes. To help you understand the potential impact of a change, you may use the [PDSA](#) cycle.

Here are some suggested change ideas for this phase of work:

- Co-ordinate the patient process of care.
- Pre-plan and pre-schedule care at times to suit the patient.
- Reduce the number of times a patient has to travel to visit the hospital or surgery, including the number of outpatient appointments.
- [Reduce unnecessary waits](#) and times when work is piled up.
- Pool similar work together by sharing staff and resources and reduce the number of queues.
- Extend staff roles, possibly as a [role redesign](#) exercise.
- Undertake capacity and demand work to help you understand and deal with your bottlenecks.

Additional resources

Websites

www.institute.nhs.uk - for the *Improvement Leaders' Guides* and a wealth of information on the application of Lean principles in a healthcare setting

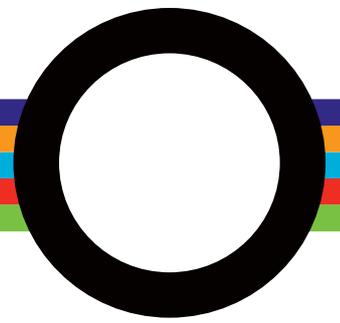
www.institute.nhs.uk/fundamentals - for more on reducing delays in patient care (Seven Ways to No Delays)

www.tin.nhs.uk - the East Midlands Improvement Network encourages users to produce a single map to illustrate the patient journey

Background

Conventional process mapping has its origins in the manufacturing industry. The foundation of this guide originates from the NHS Modernisation Agency, the National Clinical Governance Support Team and the learning and experience of work by NHS organisations. Lean and Six Sigma also influence approaches to mapping pathways, procedures and work processes in healthcare.

The other strong influence on health services is the development of evidence based clinical pathways. These are being developed as standardised pathways, using evidence developed by organisations like the National Institute for Clinical Excellence (NICE).



4

4.2 Value stream mapping

Purpose

The purpose of value stream mapping is ultimately the same as conventional process mapping, but with much more emphasis on what adds value for the patient.

Using value stream mapping can show you what is really happening and help you identify opportunities for further analysis and improvement. Simple and complex value streams help organisations manage the complexity of patient pathways more effectively.

Simple value streams are often the high volumes of activity that flow through a hospital. Improving the flow of these value streams first can have a big impact on service efficiency and patient experience.

When to use it

Like [conventional process mapping](#), value stream mapping should be used to understand the steps in the patient journey and patient experience. It is important to map the journey before making any service changes.

Value stream mapping is often undertaken during rapid improvement events when key stakeholders use a dedicated block of time to make improvements happen.

How to use it

A value stream considers how value is created and delivered to the patient. They are categorised as either:

- Simple value streams - for patients needing one specialty/discipline for treatment, for one condition and minimum contact with another agency and those with a stable medical or social condition e.g. hip and knee replacement.
- Complex value streams - for patients needing more than one specialty/discipline for treatment, who have multiple clinical conditions and require another/multiple agencies to be involved e.g. complex strokes.

When undertaking value stream mapping, you need to map the current state first: this shows the reality of how the process is working. You should involve people working in the value stream in both the mapping process and in implementing improvements.

The team then focuses on the future state, which often represents a significant change in the way the system operates. Once the future state map has been drawn up, your team needs to develop an implementation plan to make the future state a reality. This plan will include 'just do its' and 'just stop its' as well as areas of improvement that require a project managed approach.

Value stream mapping is supported by other process mapping approaches, such as [spaghetti diagram](#).

Current state map

Step one

Using patients' views, define what value the patient gets from each part of the process e.g. provision of information, pain relief etc. Write this at the top of the value map so it is in the foreground at all times.

Step two

Walk through the patient's journey in reverse for an overview. Having identified the main steps, return with your stopwatch and map the process in more detail.

Step three

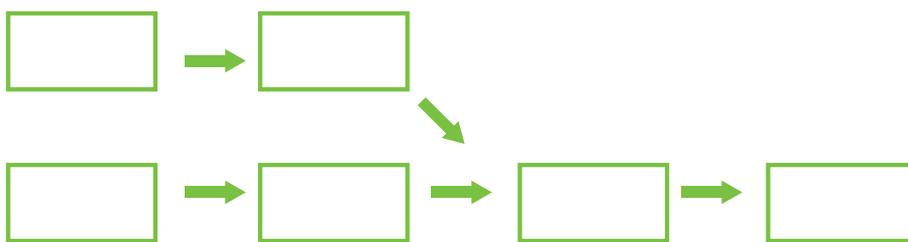
Draw the journey with the starting point (referral, outpatient appointment etc.) on the left and the end point on the right hand side of the paper.

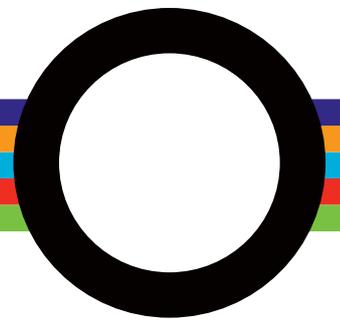
Step four

Write each procedure down as a process box, which indicates the process that the patient flows through. Each process box stops when the patient is awaiting the next stage.

Step five

The individual steps in the patient's journey join together from left to right. If several paths converge at various points, show this as follows:





Step six

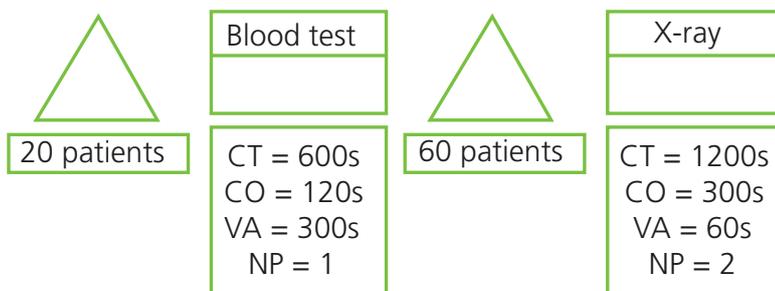
As you walk through the journey, collect data that will help you determine what the future journey will look like. Include a data box below each process with the relevant measured data for each step. Time unit measurements should always be consistent, e.g. minutes or seconds.

The following examples are useful common system measurements that can easily be applied to healthcare:

- Cycle time (CT) - the time that elapses between one patient finishing a consultation and the next patient finishing a consultation.
- Value added time (VA) - the time that actually adds value to the patient journey.
- Changeover time (C/O) - the time taken to switch from one type of process to another.
- Number of people (NP) - that are required to undertake a particular process.
- Available working time (AT) - of staff on a shift (minus breaks), which makes up the regular pattern of hourly, daily, weekly or monthly work.
- Lead time (LT) - the time it takes for a patient to move all the way through a process or value stream.

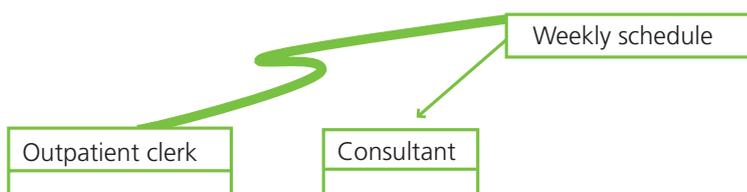
Step seven

On the left of each process step, insert a triangle showing the number of patients waiting for the next process and the time it takes to process each patient (cycle time). Thus the journey starts to look like this:



Step eight

Next, add in the flow of information. This is shown above the pathway with arrows drawn from right to left - straight arrows for paper based information and lightning arrows for electronic information.

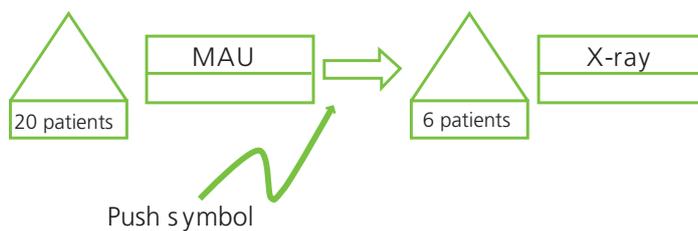


At each step of the journey, you need to consider what information is provided, where it comes from and in what form and then record it as above on the journey diagram.

Step nine

Now enter whether the patient is 'pushed' through their journey or 'pulled' along the pathway. In most cases, this will be a push step. For example, patients are pushed from the medical assessment unit (MAU) to x-ray and then pushed from the MAU to the wards.

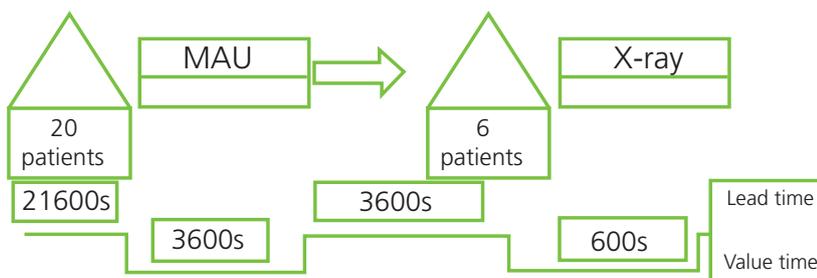
The ideal end point is conversion of many of these push steps to the more efficient pull form.

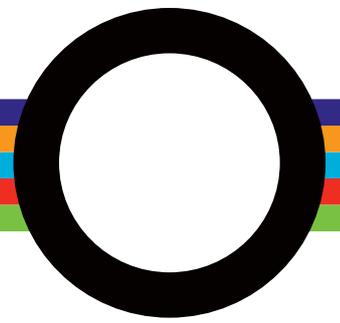


NB: In this example, the MAU would normally be broken down into smaller processes. It is shown as a single process to illustrate the example.

Step ten

The final part of the journey is the addition of a timeline at the bottom of the page. Under each process and associated waiting box, insert the lead time for that process (time taken to complete it) over the value adding time in that process. You can then calculate the complete lead time for the journey and the complete value adding time.





Value adding, non value adding and necessary but non value adding steps

Once the current state map is complete, you should be able to determine what adds value to patient care and what does not. Some steps add no value but are still necessary, such as transport. You should note these and aim to reduce or eliminate them in the long term.

You can use symbols to denote the value of a step, such as sticky dots (green for value adding, red for non value adding and half green dot for a non value adding but essential step). Alternatively, you could use happy and sad face symbols.

Future state map

To draw this and create the conditions for a Lean transformation, you need to ask specific questions.

On demand:

- What is the Takt time? ((see definition on the following page)
- What is the material flow?
- Where can we use continuous flow?
- Where can we use first in, first out (FIFO)?
- If we can't use flow, where should we use 'supermarket pull?'

On the flow of information:

- What are the information flows that support the value stream (letters to the GP, patients, other)?

Takt time is defined as:

The available work per shift

Patient demand per shift

This is a manufacturing concept that can easily be translated to healthcare. It allows you to determine how many patients can be treated per unit of time so you can predict how many patients you need to see per shift to meet current demand. This involves a clear knowledge of demand and demand trends.

Continuous flow

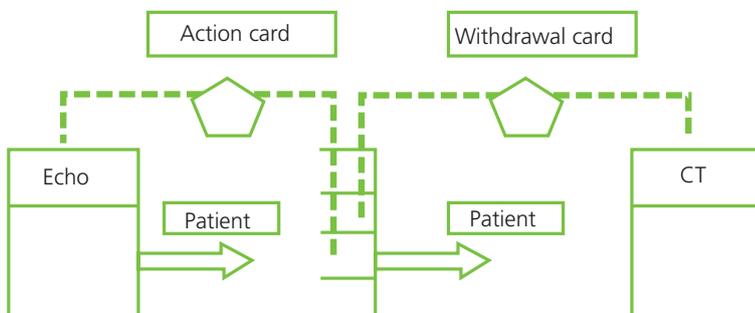
The notion of continuous flow is central to Lean thinking. This is where the patient moves from one step in their journey to the next without delay. It is the most efficient way to manage any process as it reduces waste to a minimum.

If you are able to introduce continuous flow, the future map should show the previous process boxes being joined together as one single process box. You only require separate boxes if each process has its own separate flow which stops before another commences.

While ideal, continuous flow isn't achievable in all situations. This may be because geography separates steps in the patient journey, or that some parts of the pathway have a very long lead time and are difficult to couple directly to the next stage.

Pull

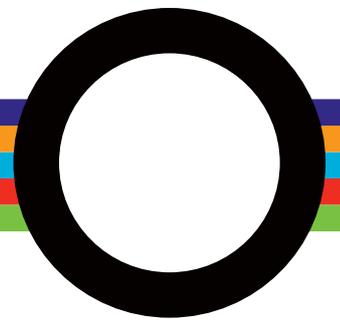
When continuous flow is not possible, the next most efficient type of flow is pull or 'the supermarket pull system'. Pull is where the next part of the process pulls patients from the one before. The following is part of the flow for investigating a patient with recurrent blackouts.



The CT scanner pulls patients through the echo process. Each time a CT is undertaken, a patient is removed from the small pool of patients between echo and CT. A card is sent to the control position, which in turn sends a card to the echo to see another patient.

This way, a constant pool of patients is maintained between the two processes. The size of this pool should be large enough to ensure the CT is continuously fed, even if there are disruptions in the echo process, but not so large that patients are kept waiting for a long time. This is a fine balance, but over time the aim should be to make the pool as small as possible and eventually replace it with a continuous pull system.

This simple system may seem familiar, but all too often there is no relationship between the different processes. This method enables the earlier process to control and regulate the flow. In industry, the cards used to communicate between processes are known as Kanban cards.

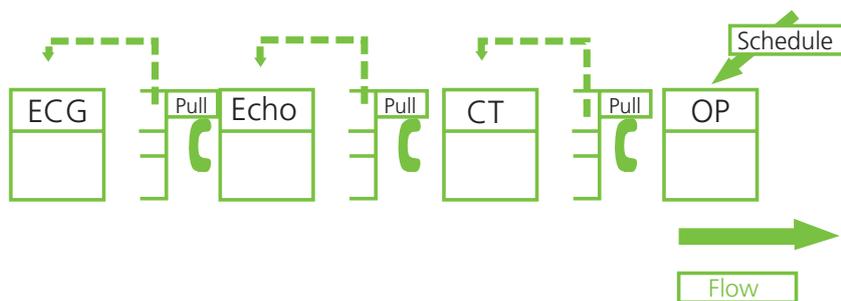


First in, first out

Another type of flow management system is first in, first out – or FIFO. (In [theory of constraints](#) it is known as CONWIP.) You can use this system to couple activities where continuous flow or pull is impossible. It is often used if the process is rare, or if there is a great deal of variation in the cycle time.

While most of healthcare is predictable, there are times when this can break down. When this happens, it is best to organise the flow according to FIFO, which maximises the downstream flow, particularly through bottleneck areas. You will need to implement some form of queuing, but this system should help to ensure efficiency along the whole patient pathway.

Flow rate is determined by the pacemaker. Using pull systems, you will only need to schedule one point in the patient pathway, known as the pacemaker process. If combined with pull techniques, controlling this point will dictate the flow of the whole patient journey.



The process needs to occur as continuous flow - otherwise you will need multiple control sites, which you will have to co-ordinate. Using a pacemaker enables you to control the flow using one simple point. This makes scheduling much simpler than trying to co-ordinate many separate processes.

Levelling the flow

This is perhaps the most difficult concept of Lean thinking to transfer to healthcare. Used in manufacturing, levelled scheduling is the operation of a process in the lowest possible common multiple. This process is flexible and reduces the waste between stages, but it will only work if other aspects of Lean thinking are in place.

An example of how this could be applied to healthcare is the provision of diagnostic services. Using levelled scheduling, you could run test A then test B then test C, rather than batching them unnecessarily. This way, patient flow is uninterrupted. You can also improve flow by using right sized equipment in the optimum location, rather than large complex machinery, which encourages the large batch approach.

The way we construct surgical lists is a good example of levelled scheduling. However, a review of different areas might suggest additional processes where a levelled schedule could help. It is applicable anywhere that we currently batch and queue. You may find the [Glenday Sieve](#) useful.

Tips

- The difference between learning to see (value stream mapping) and a process map is that value stream mapping gathers and displays a broader range of information than a typical process map.
- You can use a learning to see value stream map to establish which strategic processes require reviewing and in what order. You can also use the map at a process level to identify areas for improvement.

Additional resources

Books

The New Lean Tool Box, J. Bicheno, 2004 (PICSIE Books, Buckingham)

Factory Physics, W. Hopp and M. Spearman, 2000 (McGraw Hill, Boston)

Lean Evolutions, N. Rich, N. Bateman, A. Esain, L. Massey and D. Samuel, 2006 (Cambridge University Press, Cambridge)

Learning to See, Rother and Shook, 1999

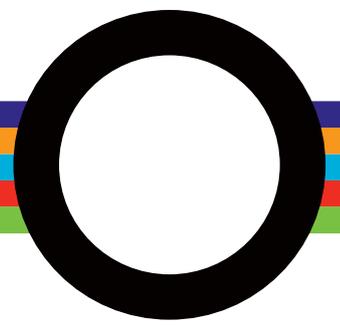
Lean Thinking, J. Womack and D. Jones, 1996 (Simon and Schuster, New York)

Lean Solutions, J. Womack and D. Jones (Simon and Schuster, New York)

Background

This technique was devised by John Shook - who worked at Toyota for over ten years - and Mike Rother who undertakes research into Toyota and has taught at the University of Michigan.

They joined forces to construct this technique as a direct result of a gap identified by Womack and Jones - that organisations needed guidance on mapping the entire value stream for products, families or services. The publication *Learning to See* was the result.



4

4.3 Spaghetti diagram

Purpose

The spaghetti diagram is a tool to help you establish the optimum layout for a department or ward based on observations of the distances travelled by patients, staff or products e.g. x-rays. Spaghetti diagrams expose inefficient layouts and identify large distances travelled between key steps.

The spaghetti diagram is actually a simple mapping tool for Lean process improvement. It gives you a useful visual overview of the geography of the process. The time saved can be used differently and can therefore help to reduce delays and improve both patient care and productive time.

When to use it

The spaghetti diagram is useful when you want to assess time wasted through unnecessary movement through a ward, clinic, department or whole hospital.

The tool helps you identify areas where time can be saved by visualising unnecessary movement of products, staff or patients.

How to use it

Step one

Decide what you are going to observe e.g. product, staff or patient flow. You may decide to analyse a number of these simultaneously by using different coloured lines to represent each flow.

Step two

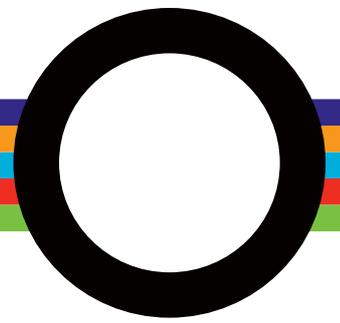
Involve the whole team in the process of drawing the spaghetti diagram. You should explain clearly to everybody what is happening and what the potential benefits may be for both the team (minimising waste of effort) and patients (improved experience).

Step three

Begin by drawing (or asking estates for) a diagram of the floor plan of the area you are evaluating. You then draw lines on it to map the flow of movement as it is now e.g. a patient attending a diabetic review, or a nurse on a ward.

Step four

By analysing the lines, you can identify any areas with unnecessary movement. This helps staff decide whether to bring two points closer together to optimise the flow.



What next?

Spaghetti diagrams are best used in conjunction with other tools and techniques that help build a visual picture of the workings of a department e.g. [process mapping](#) or [value stream mapping](#).

Additional resources

Books

The Lean Toolbox, J. Bicheno, 2006 (PICSIE Books)

The Toyota Field Book, J. Liker, 2004

Websites

www.networks.nhs.uk - for the Lean thinking network

www.institute.nhs.uk - see the delivering quality and value section for information on Lean

www.leanuk.com - for the Lean healthcare group

<http://chain.ulcc.ac.uk> - for the Lean subgroup of CHAIN (Contact, Help, Advice and Information Networks)

4

4.4 Mapping the last ten patients

Purpose

This tool uses patient files to identify variation in journey times. It helps you understand what is happening in the patient pathway and how this can vary from patient to patient.

Mapping the last ten patients is also useful for comparison with locally agreed care pathways, timescales or key stages in a patient's journey. It complements both [conventional process mapping](#) and [value stream mapping](#).

When to use it

You should use this tool when you want to demonstrate what is really happening to patients along their journey. It may expose differences in practice or workload, which can cause unhelpful variation, unnecessary delays and compromise safe care.

How to use it

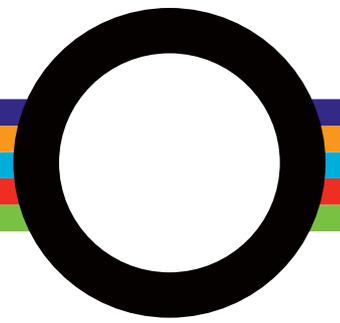
Step one

Begin by reviewing case files for the last ten patients treated along a pathway. Your aim is to have a simple picture of what happens to ten patients treated by an identifiable consultant. You can do this exercise with or without agreed timescales. Try to keep it simple - no more than ten key stages altogether.

Step two

Next, you need to develop a data collection form, which should include:

- A way of identifying the consultant.
- A way to link back to the patient record.
- Dates when key stages took place (starting with GP referral and ending in treatment date).
- Any additional information (things that stand out).



Step three

Select a day to start. As patients are treated, use the case files and talk to clinical staff, recording the dates that key stages took place.

Collect information on the last ten patients' journey times and record their progress from a defined start and end point along the agreed key stages.

Don't try and collect the detail: your purpose is to identify the size of any differences and the key stages where patients wait for a long time. Keep the information simple as there are other tools and techniques designed to pick up the detail.

Step four

Map out the stages using the example template below if you wish. Starting with the GP referral as day 0, add up the days as you go through the pathway.

When you come across variation, don't just assume that a specific individual is at fault: there are many potential reasons for the variation.

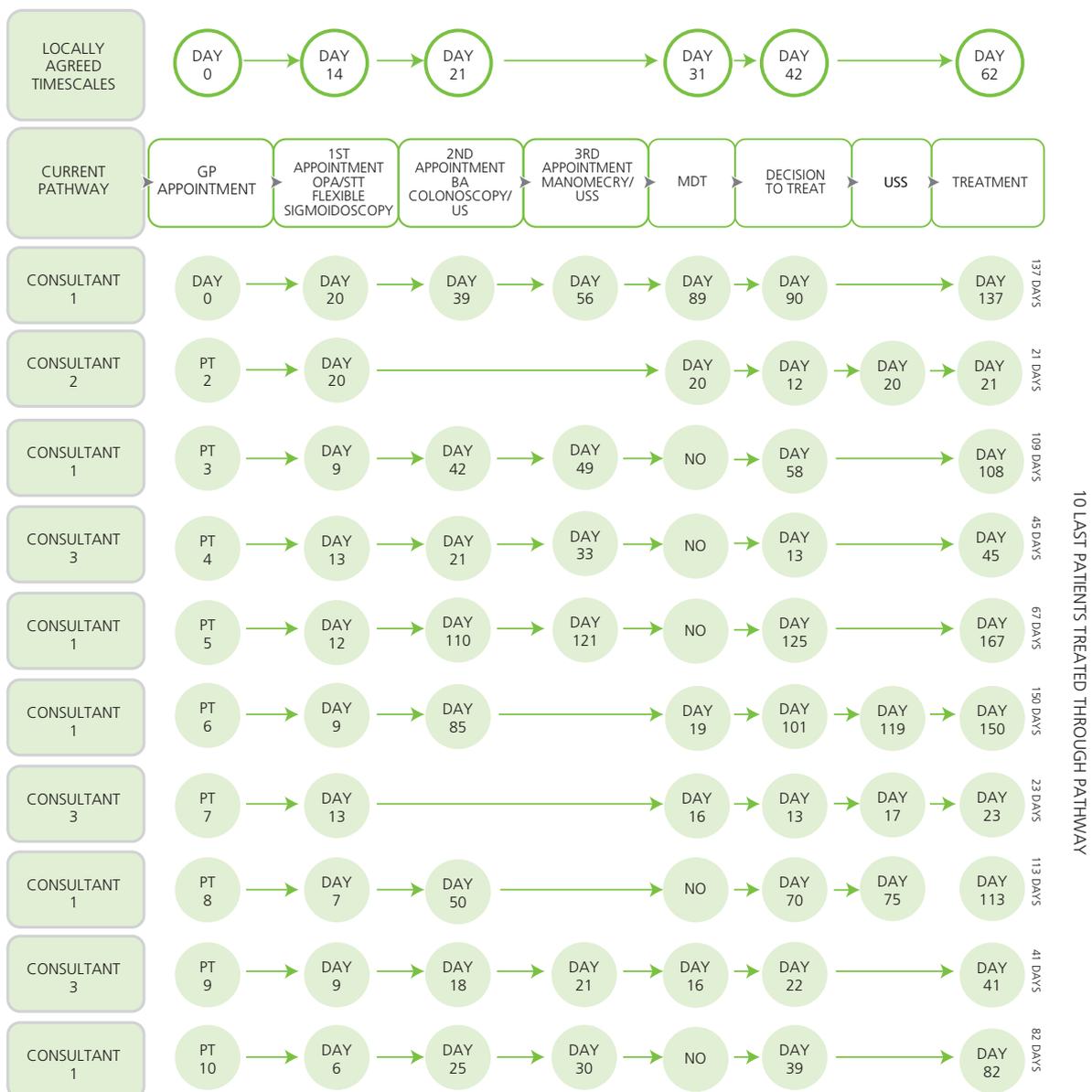
- Differences in workload and capacity to do work (some teams have their caseload allocated by size of waiting list rather than anticipated waiting time).
- Different types of patient.
- Different working practices.
- Lack of a systematic approach to care.

Discuss potential causes for variation with clinical staff as well as potential solutions to improve the pathway and increase consistency.

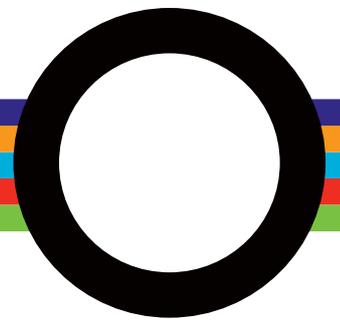
Examples

The diagram below shows the locally agreed timescales for the current colonic pathway. This includes an illustration for the last ten patients who went through this pathway under the care of three consultants. It shows there is variation in referral to treatment time from 21 to 167 days.

This is enough information to prompt discussion to try and understand the causes of the variation with the aim of identifying potential solutions.



Adapted from: The How to Guide: Achieving Cancer Waiting Times, The Cancer Services Collaborative Improvement Partnership, 2006



What next?

Once the process map has been drawn, the next step is to identify where redesigning or removing elements of it can improve the process.

If you want to dig deeper and understand the causes of the difference, you should consider doing a more detailed mapping exercise (see [conventional process mapping](#) and [value stream mapping](#)).

Aim to co-ordinate the process of patient care:

- Pre-plan and pre-schedule care at times to suit the patient.
- Reduce the number of times a patient has to travel to visit the hospital or surgery.
- Reduce or eliminate batching.
- Reduce the number of queues to be managed: pool similar work.
- Extend staff roles: this may be undertaken as a [role redesign](#) exercise.
- Undertake capacity and demand work to help you understand and deal with your bottlenecks.

It will also be helpful to look at [managing variation](#).

To help you understand the potential impact of a change, you may want to use small tests of change, like the [PDSA](#) cycle.

Background

This content has been adapted from original work done by the NHS Modernisation Agency.

Acknowledgements

Cancer Services Collaborative Improvement Partnership

NHS Modernisation Agency

4

4.5 Process templates

Purpose

Process templates provide a picture of what happens to one patient as they go through a process, measured in time. Using templates or pictures of patients' journeys through a process can help you identify any constraint or rate limiting step within that process.

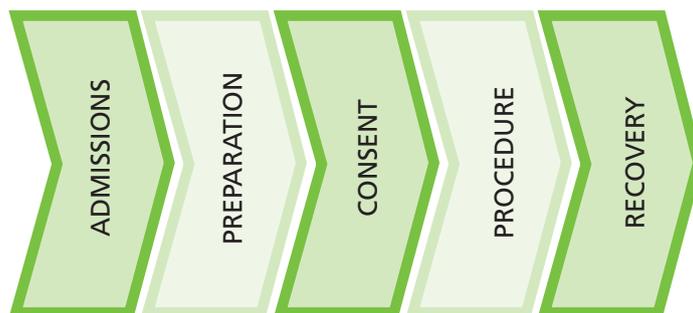
This enables you to schedule work more effectively and to actively manage the constraint, maximising the efficiency of any process. Evidence suggests that this approach increases capacity of existing resources because it enables you to identify and focus on the rate limiting step. This in turn allows you to increase throughput and prevent mismatches in capacity and demand.

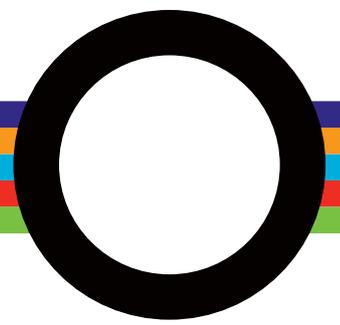
When to use it

You should use process maps when you have undertaken a [conventional process map](#) or [value stream map](#) and have identified the bottlenecks / constraints in the patient journey.

How to use it

When you are mapping out the processes around the procedure or work, you need to identify the start and end points of the procedure, i.e. from the patient's arrival in the department through to discharge.





Agree how many key activities are undertaken - for example, patient clerking and consent, any pre-procedure preparation, getting the patient into the procedure room and positioned, carrying out the procedure, reporting findings, patient recovery and discharge.

Step one

Follow a sample of patients (10 to 15) through each procedure, recording the time taken to complete each step. If you track 10 patients, your grid might look like this:

	Clerk in (reception)	Clerk in (nursing)	Patient gets changed	Pre-observations
Patient 1	2.1	14	3	2.1
Patient 2	2	15	4	2
Patient 3	5	21	5	4
Patient 4	1.3	17	8	1.3
Patient 5	2	15	6	2.1
Patient 6	1.5	15	4	2
Patient 7	1.9	15	3	2.1
Patient 8	2	14	5	2
Patient 9	1.5	13	4	2
Patient 10	1.7	14	5	2

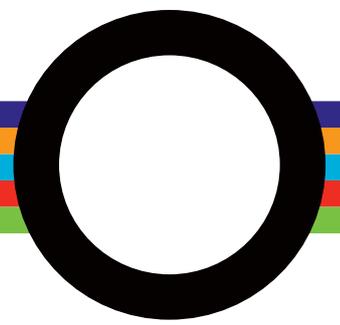
Don't calculate the average length of time, instead look at the 80th percentile, or in this example, the eighth longest time out of ten patients. This links up the '80:20 rule' also called the [Pareto](#) principle.

One way of doing this is to sort the patients in order (for example by clerk in time). This gives you a result of two minutes.

	Clerk in (reception)
Patient 4	1.3
Patient 6	1.5
Patient 9	1.5
Patient 10	1.7
Patient 7	1.9
Patient 2	2
Patient 7	2
Patient 8	2
Patient 1	2.1
Patient 3	5

Expanding the table, it looks like this:

	Clerk in (reception)	Clerk in (nursing)	Patient gets changed	Pre-observations
Patient 1	2	14	3	2.1
Patient 2	5	15	4	2
Patient 3	1.3	21	5	4
Patient 4	2	17	8	1.3
Patient 5	1.5	15	6	2.1
Patient 6	1.9	15	4	2
Patient 7	2	15	3	2.1
Patient 8	1.5	14	5	2
Patient 9	1.7	13	4	2
Patient 10	1.7	14	5	2
8th longest length of time	2	15	5	2



The result for the whole pathway looks like this:

	Time (minutes)
Clerk in (reception)	2
Clerk in (nursing)	15
Patient gets changed	5
Pre observations	2
Consent	10
Procedure	30
Post observations	2
Type up report	5
Patient in recovery	45
Discharge	5

Step two

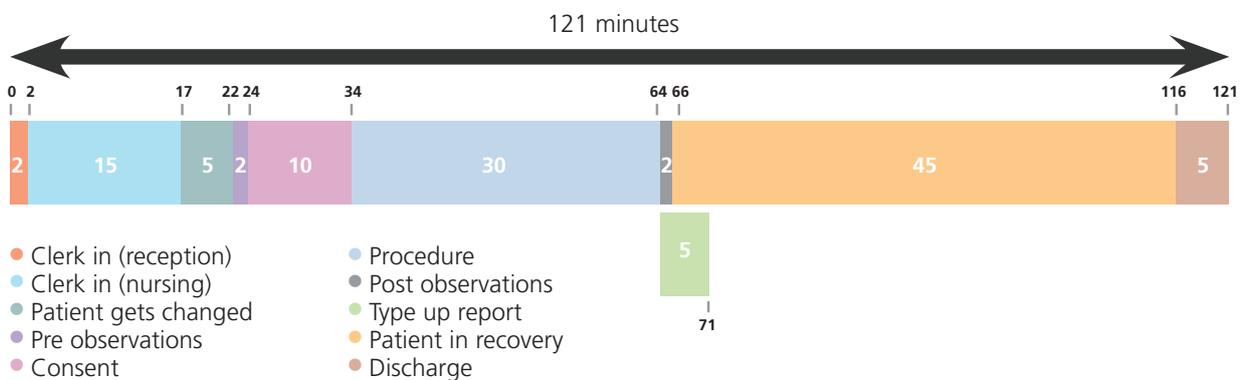
Allocate a colour to each step like this:

	Time (minutes)	Code
Clerk in (reception)	2	●
Clerk in (nursing)	15	●
Patient gets changed	5	●
Pre observations	2	●
Consent	10	●
Procedure	30	●
Post observations	2	●
Type up report	5	●
Patient in recovery	45	●
Discharge	5	●

Step three

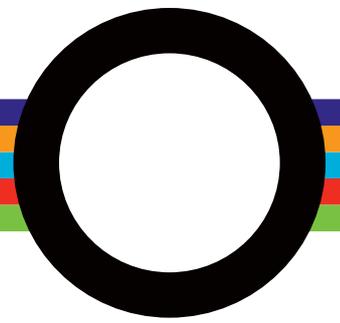
Line up the colour steps in sequence in blocks that are proportional to the timescale - don't include waiting times. You can create the template as a spreadsheet, or by simply cutting and sticking coloured bits of paper together. Whichever way you choose, keep a consistent scale of the times along the top of the template.

This illustration shows the cumulative time used up in minutes at the start of each step.



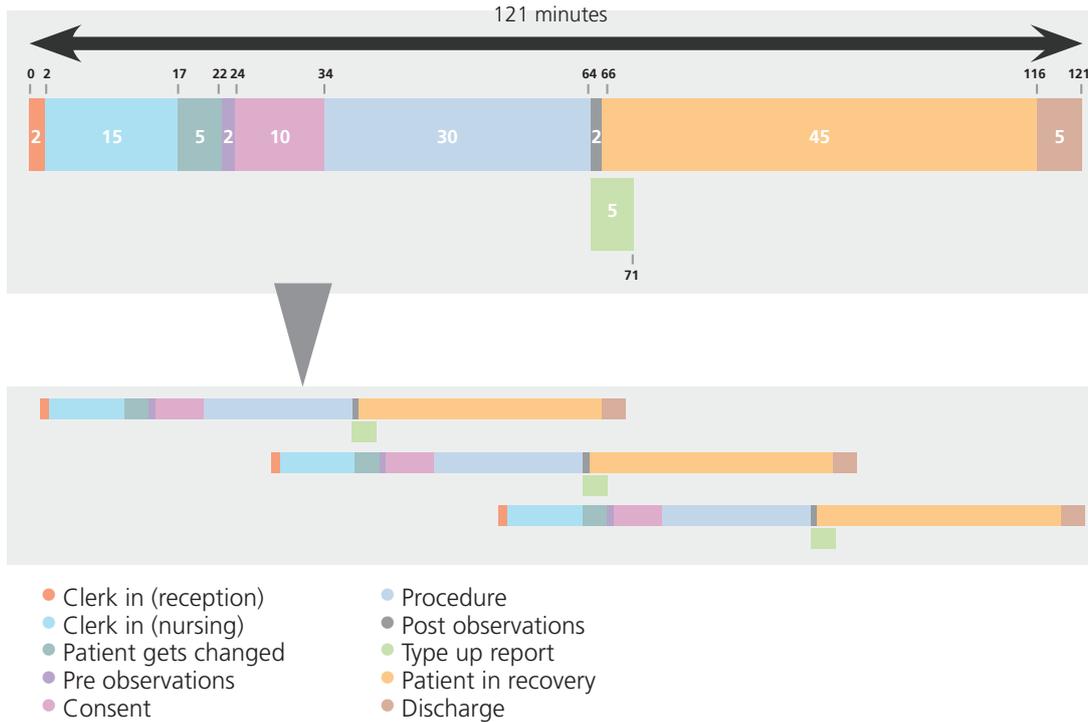
The green box at the bottom (type up report) shows a process that is running parallel to the patient pathway.

It is helpful to identify these steps separately as shown in this picture. Sometimes there may be a series of parallel steps taking place that can be its own process template. One of the two series of parallel steps will take longer than the other and dictate how many patients can be seen.



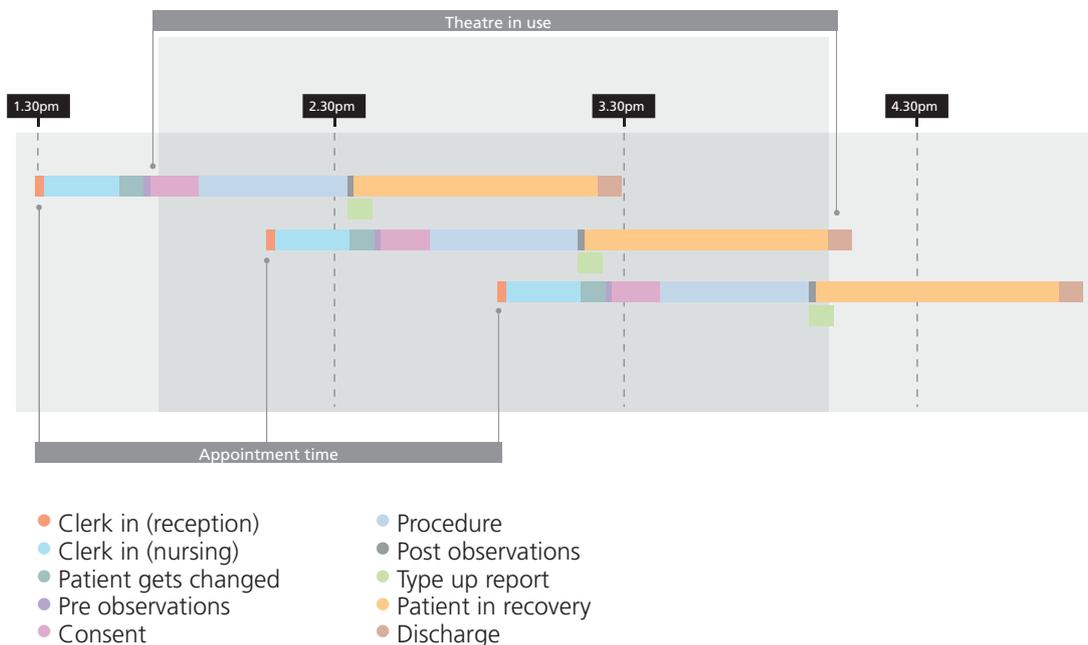
Step four

Now line up several templates so that patient waits are minimised.



Step five

Position real time (i.e. time in the day) along the top to work out the best time for patient appointments to start, as well as the optimum theatre usage and list composition.



Step six

Use the process template to schedule resources and staff for the number of procedures. If you have different groups of patients in your clinic, you may wish to develop separate templates if their resource requirements vary – for example, follow-up patients compared to new patients. Alternatively, you may find general templates easier and sufficient to reduce the complexity of what you are trying to plan.

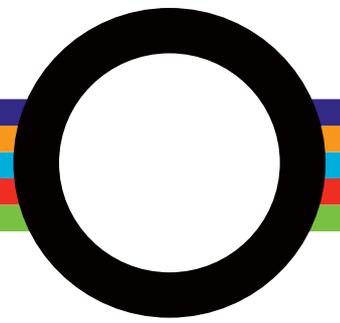
	Time (minutes)	Staff	Equipment	Rooms
Clerk in (reception)	2	1 Clerk		
Clerk in (nursing)	15	1 Nurse		1 examination, 1 toilet
Patient gets	5			1 changing room
Pre observations	2	1 Nurse		1 theatre/room
Consent	10	1 Endoscopist		1 theatre/room
Procedure	30	1 Endoscopist, 2 Nurses	6 scopes	1 theatre/room
Post observations	2	1 Nurse		1 theatre/room
(clean scope)	2	1 Technician	2 washers	1 room
Type up report	5	1 Endoscopist		1 theatre/room
Patient in recovery	45	1 Nurse		1 bed
Discharge	5	1 Clerk		1 chair

Analysing and using the process template

Demand at the constraint:

- Use the time required at the constraint and multiply this by the number of patients seen in a day – this is the activity at the constraint.
- Identify patterns of demand over time (daily, weekly, monthly) and by groups of patients.
- Use your booking system to identify slots that will meet demand.

Timings for the other process stages give very useful information about the current approach to scheduling, in comparison to the capacity available.



Scheduling rules for different process templates

Use the following rules to organise your schedule:

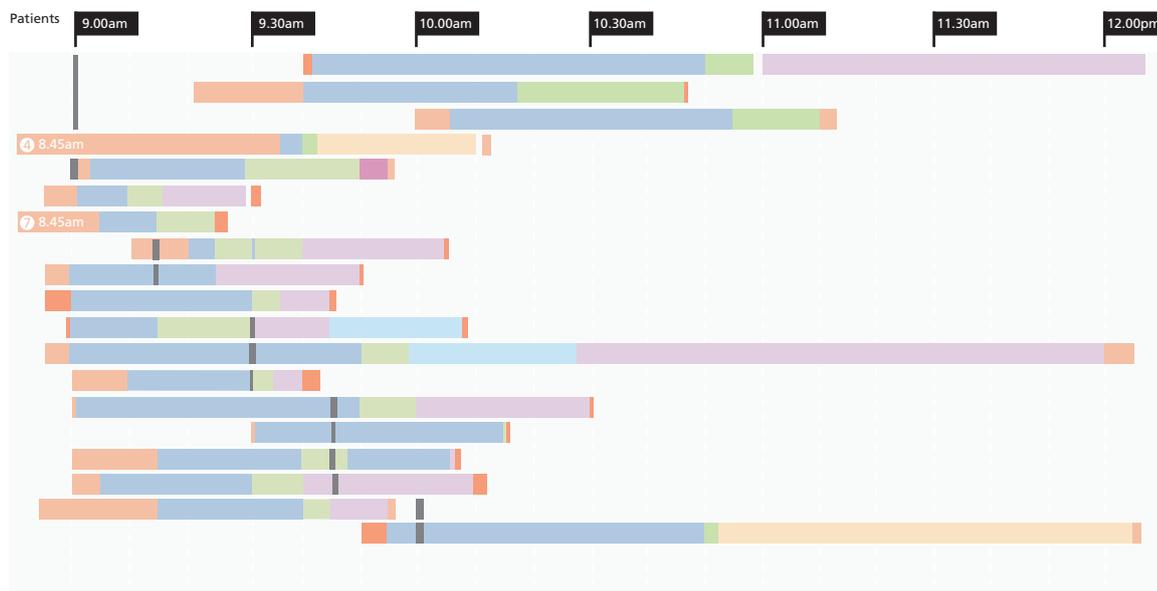
- Order groups of patients that are highlighted as a variable in the constraint towards the end of the day.
- Arrange long templates first and then arrange smaller and shorter procedures around these.

This exercise provides useful information in identifying key constraints in the process, related to available capacity. Availability of endoscopes, availability of recovery beds, equipment turn around times and so on can all impact on the time it takes to complete a procedure. Your future scheduling should take account of all constraints, eliminating their impact.

Examples

1. A real clinic schedule

How could you organise this better? Both patients and staff would benefit from improved scheduling.



• Patients waiting for doctor

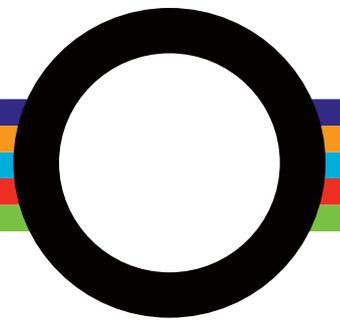
Source Richard Lendon and Lucy Vere

2. Cancelled operations

Operations were being cancelled due to a lack of beds, which was identified as the likely constraint.

A simple process template was developed just for bed use. As beds are ring-fenced for men and women, they have a separate template. The picture below shows how this looked for 15 patients who had planned admissions on the week beginning Sunday 15 February.

OPERATION	SUN	MON	TUES	WED	THURS	FRI	SAT	SUN	MON
Hemicolectomy epidural N	M 1	M 1	M 1	M 1	M 1	M 1	M 1	M 1	M 1
Bilat hernia	M 1	M 1							
Lap and chole	M 1	M 1	M 1						
Lap and chole	F 1	F 1	F 1						
Hernia repair			M 1	M 1					
Lap and chole warfarin			F 1	F 1	F 1	F 1	F 1	F 1	
Lap and chole			F 1	F 1	F 1	F 1	F 1		
Bilateral breast red	F 1	F 1	F 1	F 1	F 1				
Right uncemented total hip	F 1	F 1	F 1	F 1	F 1	F 1	F 1	F 1	
Total hip	F 1	F 1	F 1	F 1	F 1	F 1	F 1	F 1	
Right total knee	F 1	F 1	F 1	F 1	F 1	F 1	F 1	F 1	
Trapesiumectomy	F 1	F 1							
Arthroscopy shoulder		M 1	M 1						
Total knee		F 1	F 1	F 1	F 1	F 1	F 1	F 1	F 1
Duypetrons			F 1	F 1					



Each coloured block represents one day in bed. Blue boxes represent men and pink women as their beds are in separate wards (i.e. beds are not a shared resource for patients). Patients are discharged in the morning.

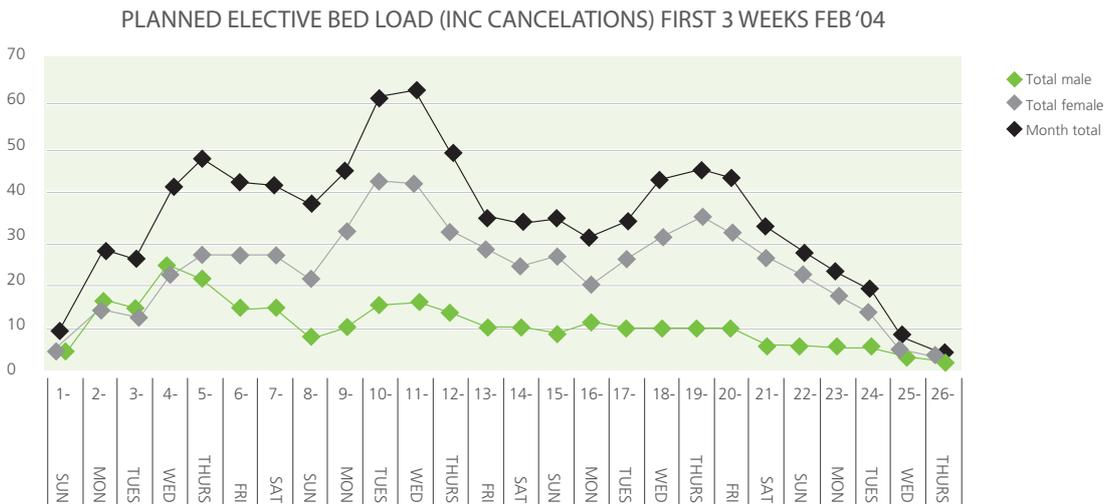
Process templates were used to map out the beds used. In total, there were 64 patients admitted during this week. This spreadsheet was completed for all the patients. As each coloured box had a 1 in it, it was possible to add up the planned bed usage across the week. These were then plotted in the following graph.

NUMBER OF BEDS OCCUPIED BY ELECTIVE ADMISSIONS ADMITTED WEEK BEGINNING 15/02/04



The graph shows that there was a peak in demand for beds on a Thursday. In fact, the hospital needed four times the number of beds on a Thursday compared to a Sunday. More female beds were needed than male beds. It also took a while for bed demand to clear after admission.

It was decided to build up this picture by adding two more weeks' worth of admissions. The result is shown in the graph below.



This demonstrates the variation in demand for planned beds in elective care. As beds had been identified as a constraint, further analysis was done and the following two strategies were recommended to alleviate the pressure:

- Plan for discharge (reduce the demand / need for bed per admission).
- Plan along bed utilisation rather than theatres.

What next?

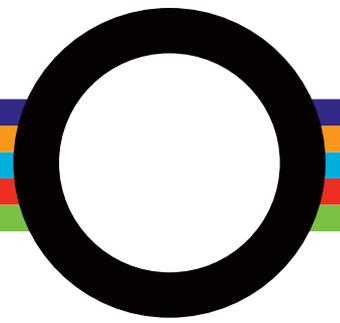
If your focus is managing clinic workload, you can anticipate the best time for patients to start their appointment and have a good idea of what will happen if something unexpected occurs.

Having involved administrative staff in the process mapping, you need to make sure there is a simple system in place for booking different types of patient into the next available slot. Consider how many slots you need for each group daily and weekly. Colour code the slots by group, making it easier for staff to book the right patient into the right appointment. This approach can be built into Choose and Book systems: the key is to make sure that each type of slot is easily recognisable.

Make sure the booking system templates are not making your capacity management more difficult. The system needs to fit what the procedure needs, not the other way around.

Improve the impact

This approach works best if resources are being pooled for non specialist activity or the most common procedures. Process templates for individual clinicians do improve their individual throughput, but aren't necessarily the most profitable use of this tool.



Improving workflow of the clinic

If you are looking for continuous improvement, there are some other tools and techniques you may find useful. For example, having simple visual cues so that everyone knows the patient has left the room and the next room is ready. Tools like [spaghetti diagram](#), [identifying frustrating problems](#) and [sort and shine](#) may also help to smooth the daily workflow of a clinic.

Additional resources

Improvement Leaders' Guides, NHS Institute for Innovation and Improvement

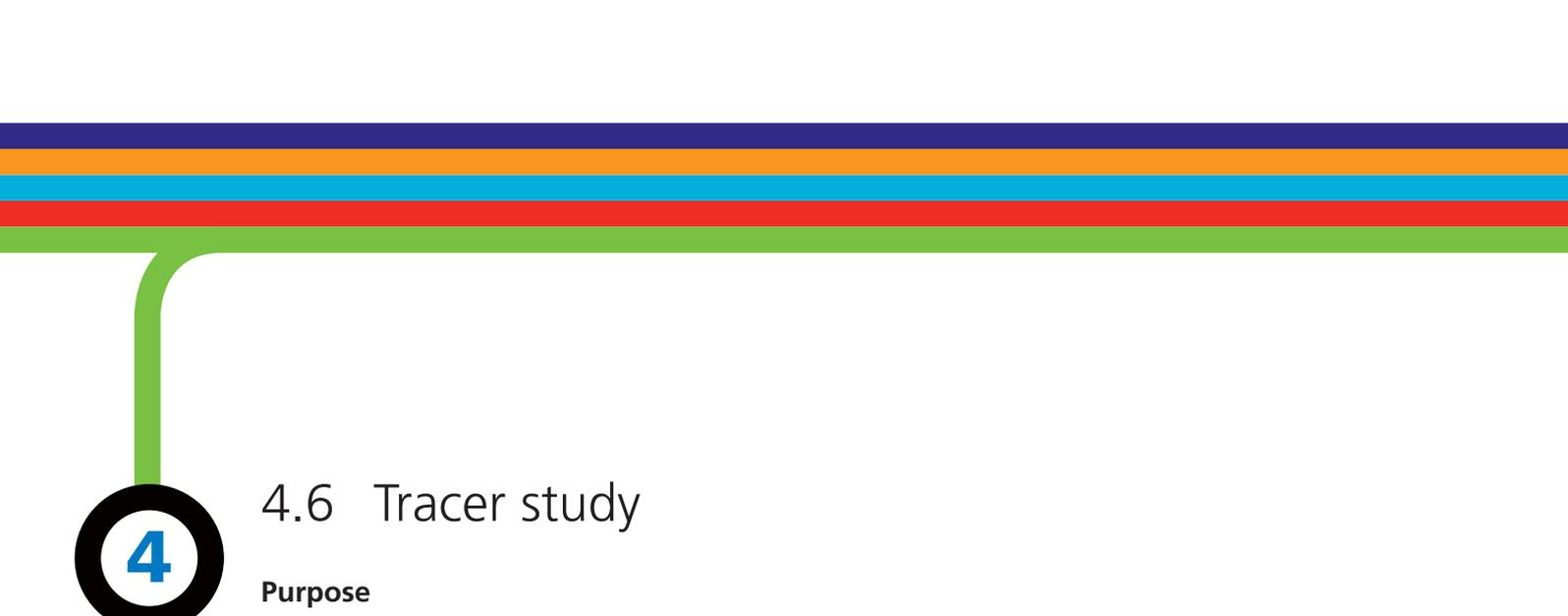
Background

This approach has its origins in the manufacturing industry where it was first used as a sensible way of scheduling work to take account of the resources required from start to finish.

As an approach, experts rate its significance in the organisation of healthcare services so highly that they identified it as one of the **10 High Impact Changes**. It also links to capacity and demand analyses.

Acknowledgements

Modernising Endoscopy Services: A Practical Guide to Redesign, NHS Modernisation Agency 2003



4

4.6 Tracer study

Purpose

A tracer study helps you to understand processes around paperwork and information flows. These processes are often a source of hidden delay.

Using this tool can help you to identify hidden bottlenecks in processes that run parallel to the main patient journey processes e.g. Choose and Book, listing patients for surgery and accessing patient notes.

It will reveal information to help you identify and reduce sources of unnecessary delay, time lost owing to duplication and work that does not make sense or add value to the patient experience.

When to use it

Use the tracer study when you want to understand the flow of information that supports clinical care processes. You can use this tool in addition to [conventional process mapping](#) to give a more detailed picture of what happens in real time within information processes and flow.

How to use it

The resources you will need include:

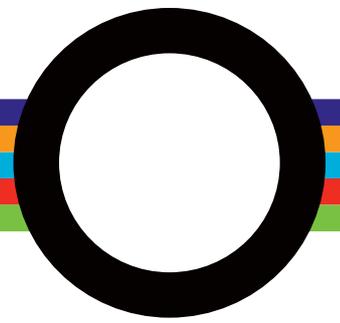
- Planning time and good communication (staff who are involved need to know what they need to do and why).
- A good form to capture information.
- Analysis time.
- Follow up time (meeting or possibly interviews).

Step one

Select the process and the paperwork (or electronic equivalent) that you would like to track. The most revealing ones will be those that cut across different departments.

Step two

Anticipate the start and end points for the paperwork so you know how to get hold of them at the end of the tracer study.



Step three

Make contact with the groups you expect to have contact over the paperwork. Explain to them what you are planning to do and why you are doing it. Stress the importance of understanding the patient experience in their journey and where it could be improved.

It's worth spending some time engaging people with the work. This will be time well spent when you get to the stage of looking for and making suggested improvements.

Step four

Start off with a small number of items to trace, perhaps ten consecutive records. Develop a tag - for example, a coloured sheet of paper or a pop-up for electronic records. On this tag, table the information you require each time the item changes hands. See example below:

* PLEASE READ THIS *

We are asking for your input in helping us understand the process of information flow in Name of Department or Area. To do this we are following a report form.

Please sign a new row each time you use the report form. You may be asked to take part in a short interview about the information on the report form.

Please complete the next empty row on the table below, thank you.

From where did you receive the report form?	Your details	To whom will you send the report form?
Name:	Name: Job title:	Name:
Name:		Name:
Name:		Name:
Name:		Name:

- Ask everyone coming into contact with the tagged document to sign and date the marker.
- Keep additional information requested simple – perhaps just have an ‘additional comments you wish to make’ column on the tag.
- When you have the tagged items back, map out the process for the ten consecutive tags on the same sheet of mapping paper.
- If you want more qualitative information you can always follow up with a discussion and ask the relevant people more detailed questions about the process. For example:
 - What do they do with the paperwork?
 - How well do they think the particular process works?
 - Any thoughts on the quality of the information?
 - Any thoughts about handovers?
 - Any thoughts about how things could be better?

The focus should be on what happens and what they actually do, in addition to what they think should happen. Sometimes people find it difficult to say what actually happens and you may need to let them talk about both what they do and what they should do.

It is helpful to get the people together who completed the tracker exercise to discuss what the map shows, identify where the delays are and any other problems.

A difference between what should happen and what does happen may suggest a problem that is worth exploring. Be sure to fully **scope** who should be involved: clinical and non clinical.

Look at opportunities to redesign the process, for example:

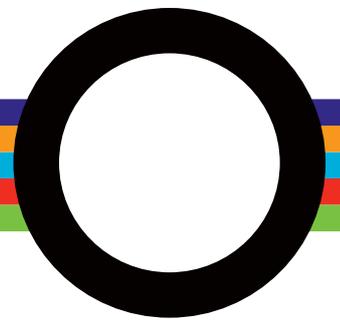
- Can the number of steps and the number of people who need to come in contact with the paperwork be reduced i.e. steps that don't add value to the patient or that can be combined.
- Look out for times when paperwork is grouped together and dealt with in batches.
- Look for times when paperwork is processed or decisions are being made out of order.

The important thing is to get people on board with both the causes of delays and the potential solutions.

What next?

You will need to test out the chosen suggested improvements. Use:

- The **model for improvement** to plan the tests.
- Do more tracer studies to see the impact of these and spot more opportunities to make more improvements.
- Use the **Plan, Do Study, Act** (PDSA) cycle to analyse the tests.
- It may be useful to do a **spaghetti diagram** to help understand movement of the paperwork and improve flow and/or the layout of a department.



Additional resources

Books

Tracer studies, P. Hornby and G. Symon, 1994 in *Qualitative Methods in Organisational Research*, C. Cassell and G. Symon (Eds.) (Sage, London)

Journals

The Co-ordination of Work Activities: Cooperation and Conflict in a Hospital Context, (*Computer Supported Co-operative Work*, 5, 1-31), G. Symon, K. Long and J. Ellis, 1996

Background

The tracer study is a research technique that has been adapted, based on process mapping methodology. It was developed for use in the NHS by Gillian Symon.

Acknowledgements

Gillian Symon

4

4.7 Sort and shine

Purpose

Sort and shine (or the 5S/6S) is a visual system for improvement that helps all relevant staff to create and maintain an organised, clean, high performance workplace. It forms the basis for standards work, which enables you to measure improvement.

In recent years, an additional 'S' has been introduced to the 5S, emphasising the importance of safety.

The 6S stands for:

1. **Sort:** clear out, clean up
2. **Set in order:** clean and check, arrange
3. **Shine:** configure, neatness
4. **Safety:** identify and prevent unsafe conditions
5. **Standardise:** conformity, discipline
6. **Sustain:** custom and practice, ongoing improvement

Using sort and shine will help you to reduce the opportunity for variability in activities by ensuring that everything needed at each step of the process is easily available. This means that any defect in a particular step is easier to see.

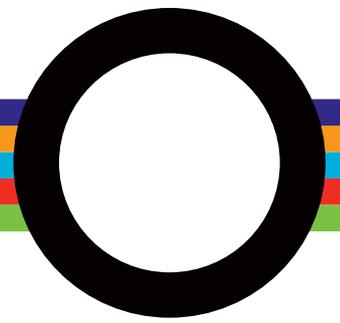
When to use it

If you want to focus on how the working environment affects services, this is a useful tool to use as it helps to identify where changes need to be made in addition to helping staff to create and maintain a safer environment for patients, staff and visitors.

How to use it

Start the process by communicating to the relevant staff what is going to happen (see [stakeholder analysis](#)). These may include trade unions, stores staff, management, health and safety, estates personnel, maintenance engineers etc. You may also want to include some of these groups in the activity as they bring [fresh eyes](#) to the project.

Before you start, take photos of the area. These will act as before and after measures of any improvement. It may also help to focus effort on the place that staff want to tackle first.



Step one - sort: clear out, clean up

This is a team based activity for all those who work in the area.

- Remove all items that are not used in any area, ward, cupboard, office, corridor, reception, theatre, etc. They could be outdated materials, broken equipment, redundant equipment or files on the computer that you no longer use.
- Ask staff to tag all items they don't think are needed. This improves understanding about need and use.
- Classify all equipment and materials by frequency of use to help decide if it should be removed. This is known as a red tag. Include the date when the tag is attached, as well as a date for completing any action. You should also record the quantity of material related to the tag and the reason for tagging it. It may be that the item is unnecessary, defective, non urgent, left over or held 'just in case'. Include a place to record what you intend to do with it e.g. dispose, store close by, store in area, send to main stores, hold for analysis.
- Keep a log of red tags to track activity.
- Establish a holding area for items that are difficult to classify. These items will be held for an allotted period to enable those who use the area but are not in the team to identify their use.

Step two - set in order: clean and check, arrange

Set in order classifies the remaining items. It is also when the team sets a standard for cleanliness. Unclean items can hinder day to day work or lead to a failure or breakdown of equipment.

- Put frequently used items close at hand.
- Arrange items visually in the best position for day to day work, for example arrange files so you can immediately see if a file is missing or has been replaced incorrectly. This step also applies to computer filing systems.
- The visual nature of the revised system is particularly important, so you may want to use colour coding. You should be able to see at a glance if something is not there. This reduces the opportunity for error and saves time locating missing items such as a patient's notes.

Step three - shine: configure, neatness

Once you have arranged the items in your work area, it is tempting to move onto another area and not look back. This step reminds us to maintain standards by setting aside time each day - a maximum of ten minutes at the end of each shift is usually enough. Decide who is responsible for what standard and who will do what; include a chart with signatures to show that maintenance has taken place.

Step four – safety: identify and prevent unsafe conditions

All too often we take safety for granted, but you should aim to build vigilance into the work area to continuously monitor any safety issues that might arise or could be prevented.

Step five - standardise: conformity, discipline

The next step is standardise, which means the organisation sets consistent standards so that staff who work in different areas are not expected to work to different standards. This saves time as it allows routine tasks to be done in a routine way.

Step six - sustain: custom and practice, ongoing improvement

The final step is maintaining the set work standards and actively removing any causes that obstruct the maintenance of these standards. This means you can consistently reduce the time needed on a daily basis. Make sure you identify the root causes for any problems to prevent them recurring. You can use [root cause analysis using five whys](#) and [cause and effect \(fishbone\)](#) diagrams to do this. You can also use small tests of change to work out the best way to solve any problems (see [PSDA](#)).

Examples

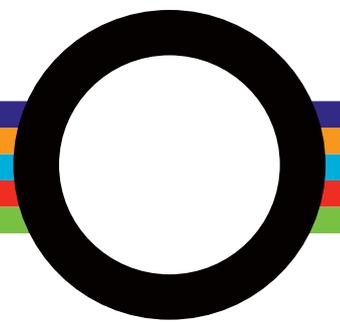
Before and after sort and shine

Before



After





The benefits of a visual system: photos on the outside of a cupboard to save staff time searching.



Visual management in the sorting area for specimens: the laminated blank form helps non pathology staff to sort specimens.



What next?

You could allot time to 'shine' on a daily basis. For example, include a routine to check stock. Compare your team's standards with organisational standards and aim to conform as this makes it easier for staff working in more than one area. Look out for problems that prevent you from sustaining the improvements you have made. If you do come across problems, try to identify the [root cause using five whys](#) and [cause and effect \(fishbone\)](#) diagrams. You can also use small tests of change to work out the best way to solve them ([PSDA](#)).

Additional resources

Books

The New Lean Tool Box, J. Bicheno, 2004 (PICSIE Books, Buckingham)

The 5S's Five Keys to a Total Quality Environment, T. Osada, 1991 (APO)

Lean Evolutions, N. Rich, N. Bateman, A. Esain, L. Massey and D. Samuel, 2006 (Cambridge University Press, Cambridge)

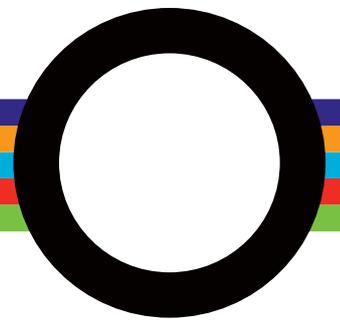
Journals

Total Productive Maintenance: the Lean Approach, N. Rich, 1999 (Liverpool Academic Press, Liverpool)

Background

Sort and shine is linked to what is seen as the foundation of Lean transformation - the '5Ss'. It originates from Japan where the five steps are called Seiri, Seiton, Seiso, Seiketsu and Suke (hence the name 5S adopted in the west). The technique is visible, apolitical and improves safety and improvement consciousness in the workplace.

Linked to organisational learning, the underlying approach is the need to understand the detail of all activities in the workplace in order to understand the whole system. It forms the discipline for Lean quality and safety.



5

Measurement for improvement

Measurement for improvement – an overview

Purpose

The tools in this section help organisations, directorates, teams and individuals understand the importance of measurement in enabling service improvement.

All too often, we are busy collecting data or formulating reports that don't give us the true picture in relation to service performance. In addition, we don't always connect this work to the key service deliverables and performance indicators.

These tools help you to use data to identify areas for improvement and, when used in tandem with the other tools in this guide ([mapping the process](#), [provocation to help solve problems](#) etc.), will support continuous service improvement.

When to use it

Clear, unambiguous and relevant measures should form the foundation of any improvement work. If you focus measures on an inappropriate area of work, any improvement action may be wasted or may even make matters worse. If measures are unreliable then people can challenge any actions they oppose and delay implementation until trustworthy data is obtained.

The following tools are particularly useful in ensuring that you make consistent decisions when working with groups or team leaders. Decisions will be based on fact, rather than 'gut feeling' or assumptions.

How to use it

The specific detail of how to use each of the tools can be found in the relevant sub sections. The tools available to support measurement for improvement are:

- 5.1 [Performance management and balanced scorecards](#)
- 5.2 [The model for improvement and plan, do, study, act \(PDSA\)](#)
- 5.3 [Performance measures sheet](#)
- 5.4 [Managing variation](#)
- 5.5 [Statistical process control \(SPC\)](#)
- 5.6 [Methodology for measuring benefits](#)
- 5.7 [Modelling and simulation](#)

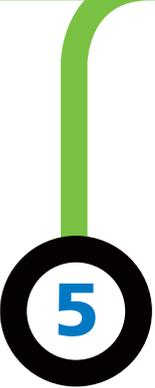
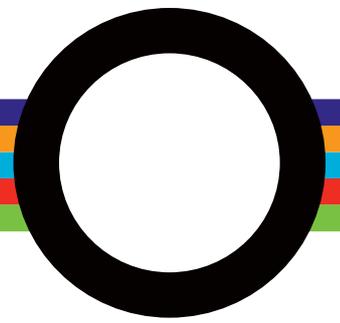


What next?

Consider your current service measures:

- Are they really helping you to identify the improvements you need to make or giving the true picture in relation to the improvements you are making?
- Is the information presented in an easy to understand format that demonstrates how well your work systems are performing?
- Is there clarity in the performance measures being collected and the reason for their importance?

Now look at the tools to see how they can help improve your information for service improvement.



5

5.1 Performance management and balanced scorecards

Purpose

Managing performance at all levels of healthcare helps to ensure the delivery of performance targets and agreed improvement plans. This needs to be facilitated by a balanced scorecard of key measures for success that you can use to monitor performance and progress.

Performance management should:

- Help to define performance targets across the key aspects of service delivery, including management of resources, customer service and financial viability.
- Provide a comprehensive picture of the organisation's progress towards achieving its performance targets.
- Provide an early indication of emerging issues / cost pressures that may require remedial action.
- Indicate where there is potential to improve the cost effectiveness of services through comparison with other organisations.
- Ensure that organisational activities are linked to overall strategy.

When to use it

Performance management should be used all the time as it enables organisations to articulate their business strategy, align their business to that strategy, identify their key performance indicators (KPIs) and track progress against the balanced scorecard of success measures. Good performance management is central to world class commissioning.

How to use it

Performance indicators are now commonly used to examine and compare performance across NHS organisations. These indicators focus on areas such as length of stay, costs per episode of patient care and number of staff employed. Many assess efficiency within the service, while others examine clinical quality and safety performance.

Performance management can help you establish a regular, rigorous system of data collection to indicate trends and measure the performance of NHS services.

Step one

Define your strategy and communicate it effectively to staff so there is a clear link between the strategic objectives and team / individuals within your organisation.

Step two

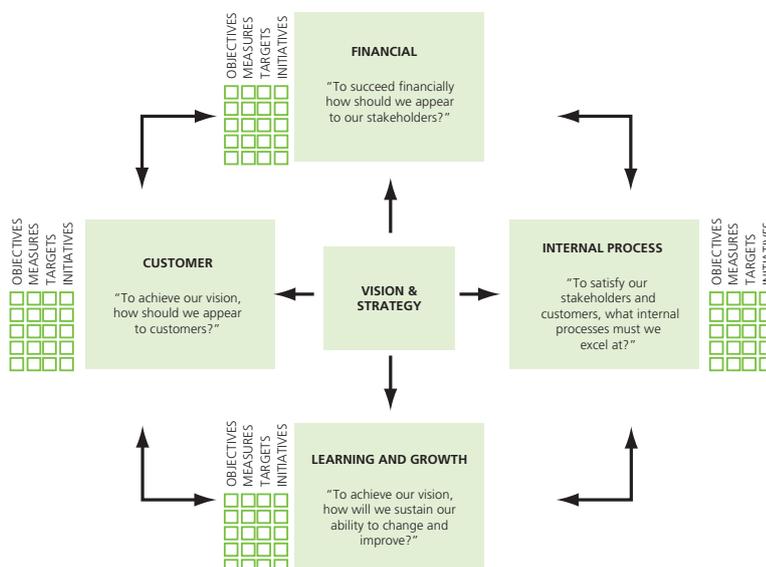
Take a holistic view of patient services and ensure that the following are in place:

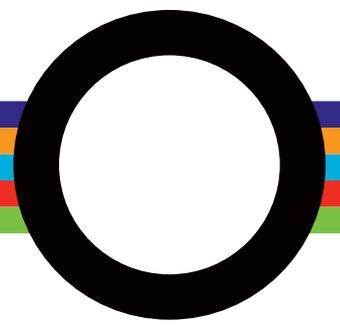
- *Key performance indicators (KPIs)* – help you define and measure progress towards organisational goals. As the primary means of communicating performance across the organisation, KPIs should focus on a range of areas. Once an organisation has analysed its mission, identified all its stakeholders and defined its goals, KPIs offer a way of measuring progress toward these goals.
- *Balanced scorecard of KPIs* - allow you to measure and monitor performance and assign KPIs, giving you the ability to track and optimise performance based on those indicators. A balanced scorecard is basically a set of measures that provide the framework for a strategic measurement and management system. The emphasis is on financial objectives and the factors that drive them. They help organisations focus on more than just the 'bottom line' so that customer service, employee satisfaction and sales and marketing are weighted appropriately.

You should aim to develop specific performance measures relating to the four areas described by authors Kaplan and Norton according to your needs and circumstances and by considering the following questions:

- *Financial* - to succeed financially, how should we appear to our stakeholders? In the public sector, the financial perspective tends to emphasise cost efficiency.
- *Customer* - to achieve our vision, how should we appear to the customers/patients/departments that we work with?
- *Internal business processes* - to satisfy our stakeholders and customers/patients/departments, which internal processes must we excel at?
- *Learning and growth* - to achieve our vision, how will we sustain our ability to change and improve?

Figure 1





You then analyse each area to identify the key processes and metrics. This is most effective when it involves a wide range of staff.

Further performance measures such as length of stay, mortality rates, readmission rates and day case rates can be analysed. For example, the length of stay for a particular procedure may be different from the national benchmark and may highlight where a process can be investigated and changed.

As well as looking at your trust's rates, it is also a good idea to consider peers and national performance. These figures are available online at www.hesonline.nhs.uk and from your strategic health authority.

Step three

Next you should complete a [performance measures sheet](#), which can help you understand the purpose of measuring a particular aspect of performance, define what performance measures are needed and which objectives they relate to. It also helps to identify the key performance measures.

Four column matrix

Most performance management takes a top-down approach. The organisation dictates the objectives and every work group fits around these. However, you can also ensure strategic objectives are linked with every work group by taking a bottom-up approach.

The [four column matrix](#) helps teams and projects link their objective to the organisational objectives for maximum impact and senior buy-in. By measuring the correct information, you are ensuring maximum impact on the organisation as a whole.

You may find that it also helps you refine some of the measures for improvement. For example, by reducing DNA rates by 50 per cent, we anticipate that our potential throughput would be 315 patients. We anticipate that this would reduce waiting times by eleven days at the end of the financial year.

An example of the four column matrix:

The established project aims	Project measures (How you know your project is progressing towards your aims)	Link project to the bigger picture (How you know your project is progressing towards your aims)	Link measures to organisational aims (How the project contributes to improving patient care, resource savings etc.)
"We guarantee that the results for all specimens will be available within..."	Pathology turnaround time. (e.g. time in minutes from receipt of specimen to results being available)*	70% of clinical decisions depend upon pathology	How do we measure the impact this project will have on speeding up clinical decision making and helping to achieve 18 weeks?

What next?

You should use performance monitoring in all aspects of redesigning services and understanding how an organisation is performing.

You should review the objectives and metrics in your organisation's balanced scorecard to identify where they:

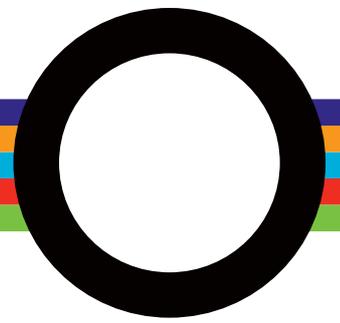
- are not explicit in a scorecard, but support the achievement of targets
- exist, but hinder achievement of targets
- are missing entirely from a scorecard.

For example, a pathology department might measure the request to reporting time to GPs, but its usefulness depends on the target time which triggers corrective action. If this has not been explicitly set, then the benefit is not made clear. On the other hand, the department may have a financial target to reduce costs by maintaining high vacancies to the detriment of waiting times. You will probably find it easier to spot supportive and hindering metrics and targets than missing targets.

As with all business tools, if you are to use it successfully, you need full buy-in from staff and managers. Some heads of department may have adopted a balanced scorecard approach for their department independently of the rest of the organisation. If you are involved in change management for service improvement, it is worth asking managers if this is the case. You can then work with them on this methodology.

Other useful tools and techniques:

- [Model for improvement and plan, do, study, act \(PDSA\)](#)
- [Performance measures sheet](#)



Additional resources

Books

The Balanced Scorecard: Translating Strategy into Action, R.S. Kaplan and D.P. Norton, 1996 (Harvard Business School Press)

The Balanced Scorecard for Public Sector Organisations, R.S. Kaplan, 2000 (Harvard Business School Press)

Balanced Scorecard Step-by-Step for Government and Not-for-Profit Agencies, P.R. Niven, 2003 (John Wiley and Sons Inc.)

Performance Drivers: A Practical Guide to Using the Balanced Scorecard, N.G. Olve, J. Roy and M. Wetter, 1999 (John Wiley and Sons Inc.)

Health Care in the UK 2000: The King's Fund Review of Health Policy, J. Appleby and A. Harrison (eds.), 2000 (London: King's Fund)

The Role and Application of the Balanced Scorecard in Healthcare Quality Management, K. Castaneda-Mendez et al., 1998 (Journal of Healthcare Quality, 20 (1), Jan/Feb 1998, pp 10-13)

The NHS Performance Assessment Framework: A Balanced Scorecard Approach, L. Chang et al., 2002 (Journal of Management in Medicine, 16 (5), 2002, pp 345-358)

NHS Performance Indicators, Department of Health, 2002 (British Journal of Healthcare Computing and Information Management, 19 (5), June 2002, pp 18-20)

Assessing the Performance of NHS Trusts: The Use of Hard and Soft Information, M. Goddard et al., 1999 (Health Policy 1999, 48, pp 119-34)

Using Performance Indicators to Improve Health Care Quality in the Public Sector: A Review of the Literature, T. Freeman, 2002 (Health Services Management Research, 15(2), 2002, pp 126-137)

Applying the Balanced Scorecard in Healthcare Provider Organisations, N. Inamdar et al., 2002 (Journal of Healthcare Management, 47 (3), May/Jun 2002, pp 179-195)

The Balanced Scorecard: An Integrative Approach to Performance Evaluation, J. Oliveira, 2001 (Healthcare Financial Management, 55 (5), May 2001, pp 42-46)

Websites

<http://qshc.bmj.com/> - Quality and Safety in Healthcare

www.balancedscorecard.org - The Balanced Scorecard Institute

Background

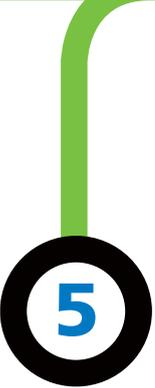
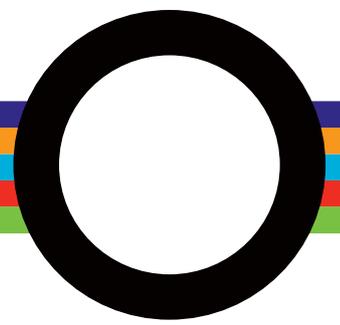
The balanced scorecard was developed in the early 1990s by Robert Kaplan and David Norton as an approach to strategic performance management and measurement. Norton and Kaplan observed that traditional performance measures based on financial accounts gave an incomplete picture of an organisation's performance. They created the balanced scorecard to provide a more rounded view.

In 1998, *A First Class Service: Quality in the new NHS* highlighted the need for a performance framework that would support the drive for higher quality standards and would assess the things which counted most to patients and the public.

The NHS Performance Assessment Framework (PAF) was published in 1999 to address this need. Based on the balanced scorecard, it introduced a new, broader based approach to assessing performance in the NHS. The framework, initially aimed at health authorities, highlighted six areas of performance:

- health improvement
- fair access to services
- effective delivery of appropriate health care
- efficiency
- patient/carer experience and
- health outcomes of NHS care.

Since then, the framework has been further developed, based on requirements set out in *The NHS Plan*. As a result, it now applies to all NHS organisations. An NHS trust based version of the framework has been developed based on a four element model with key targets and three balanced scorecard areas, which vary depending on the type of trust. The framework is supported by a set of NHS performance indicators which, from summer 2002, were published as part of the annual NHS performance ratings.



5

5.2 The model for improvement and plan, do, study, act (PDSA)

Purpose

The model for improvement provides a framework for developing, testing and implementing changes leading to improvement. It is based in scientific method and moderates the impulse to take immediate action with the wisdom of careful study.

Using PDSA cycles enables you to test out changes on a small scale, building on the learning from these test cycles in a structured way before wholesale implementation. This gives stakeholders the opportunity to see if the proposed change will succeed and is a powerful tool for learning from ideas that do and don't work. This way, the process of change is safer and less disruptive for patients and staff.

When to use it

When planning any improvement or change to work processes, it is essential to know what you want to achieve, how you will measure improvement and to be explicit about the idea to be tested. You may not get the results you expect so it is safer and more effective to test out improvements on a small scale before implementing them across the board.

How to use it

The framework includes three key questions to answer before testing an improvement concept and a process for testing change ideas.

Key questions

1. What are we trying to accomplish? (The aims statement).
2. How will we know if the change is an improvement? What measures of success will we use?
3. What changes can we make that will result in improvement? (The change concepts to be tested).

Figure one – model for improvement



This approach has been unusual in a healthcare setting because traditionally, new ideas are often introduced without sufficient testing.

The four stages of the PDSA cycle are:

Plan - the change to be tested or implemented

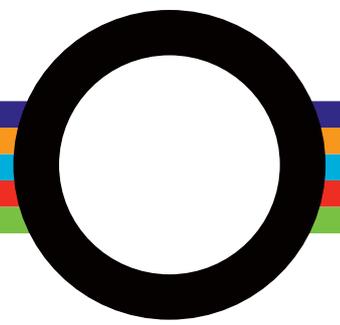
Do - carry out the test or change

Study – based on the measurable outcomes agreed before starting out, collect data before and after the change and reflect on the impact of the change and what was learned

Act - plan the next change cycle or full implementation

Figure two – PDSA cycle





As with any change, ownership is key to implementing the improvement successfully. If you involve a range of colleagues in trying something out on a small scale before it is fully operational, you will reduce the barriers to change.

Step one

Start by answering the three essential questions.

1. What we trying to accomplish?

Teams need to set clear and focused goals with measurable targets. These goals require clinical leadership and should focus on problems that cause concern, as well as on patients and staff.

They should be relevant to the length of the project and be bold in aspiration.

An example of an aims statement from cancer services:

To improve access, speed of diagnosis, speed of starting treatment and patient care for people who are suspected of having bowel cancer. This will be achieved by:

- *Introducing booked admissions and appointments. Target: more than 95 per cent of patients.*
- *Reducing the time from GP referral to first definitive treatment to less than 15 weeks.*
- *Ensuring that over 80 per cent of patients are discussed by the multidisciplinary team.*

2. How do we know if the change is an improvement?

In order to answer this question, you will need to measure outcomes such as reduction in waiting time. If we make a change, this should affect the measures and demonstrate over time whether the change has led to sustainable improvement. The measures in this model are tools for learning and demonstrating improvement, not for judgement.

Each project team should collect data to demonstrate whether changes result in improvement, reporting progress monthly on time series graphs known as run charts or [statistical process control \(SPC\)](#) charts.

You may also want to undertake a qualitative analysis through patient questionnaires.

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

There are many potential changes your team could make. However, evidence from scientific literature and previous improvement programmes suggests that a small number of changes are most likely to result in improvement.

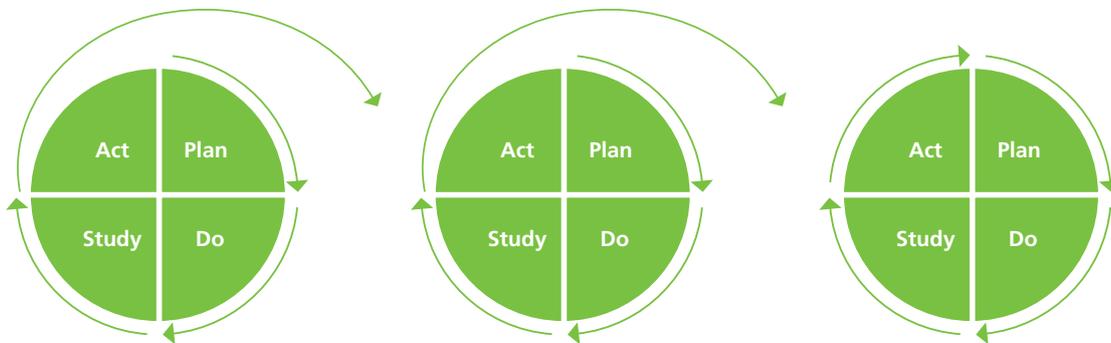
The Cancer Service Collaborative has identified twenty eight change principles grouped into four areas.

1. Connect up the patient journey.
2. Develop the team around the patient journey.
3. Make the patient and care experience central to every stage of the journey.
4. Make sure there is capacity to meet patients' needs at every stage of the journey.

Step two

You should now start the PDSA cycle. There may be several PDSA cycles running sequentially (figure three), or even simultaneously (figure four). Sequential cycles are common when the study reveals results that suggest a different approach is needed.

Figure three – sequential PDSA cycles



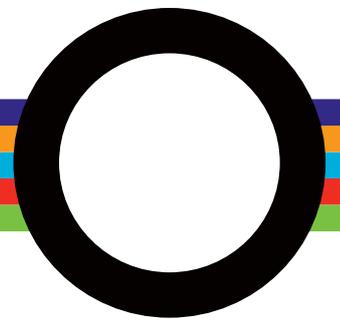
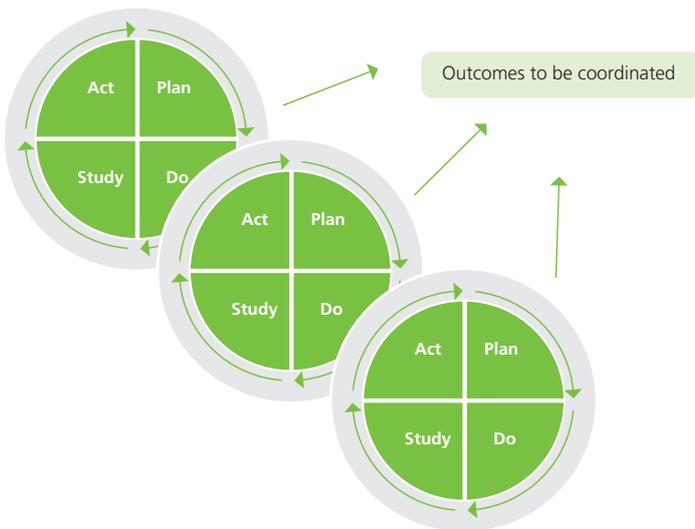


Figure four – simultaneous PDSA cycles



Simultaneous cycles may occur when the changes are more complex, possibly involving several departments. It is important that you identify any interactions between simultaneous cycles, as a change in method in one cycle may alter the impact of another somewhere else.

Step three

Record your PDSAs over time to capture the learning and to demonstrate the improvement journey, which is often lost or not recorded. You could use the template below.

Cycle	Date	Plan	Do	Study	Act
No. 1					
No. 2					
Etc.					

Tips

- Plan multiple cycles to test ideas. You can adapt these from the Service Improvement Guide so there is already evidence that the change works.
- Test on a really small scale. For example, start with one patient or one clinician at one afternoon clinic and increase the numbers as you refine the ideas.
- Test the proposed change with people who believe in the improvement. Don't try to convert people into accepting the change at this stage.
- Only implement the idea when you're confident you have considered and tested all the possible ways of achieving the change.

What next?

Continue with new PDSA cycles and continuous service improvement.

Having identified the changes with the greatest benefits, the next stage is to fully implement the change. This will require a [stakeholder analysis](#). You will possibly need to use aspects of [project management](#) and [benefits realisation](#).

Additional resources

Books

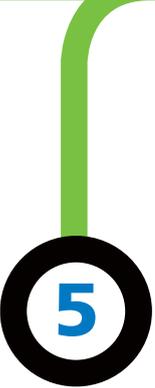
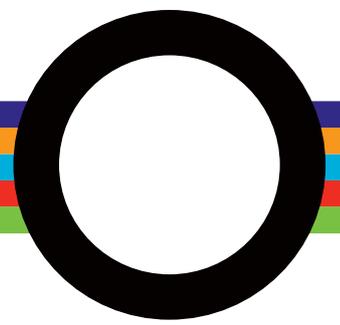
The Improvement Guide: A Practical Approach to Enhancing Organisational Performance, G. Langley, K. Nolan, T. Nolan et al., 1996 (San Francisco, Jossey-Bass)

Websites

www.ihl.org – includes information on improvement models and PDSA cycles.

Background

The Plan, Do, Study, Act (PDSA) cycle started out as the Plan, Do, Check, Act cycle and was introduced by Walter Shewart in the 1920s. It formed the basis of Dr W.E. Deming's approach to organisational development and leadership.



5

5.3 Performance measures sheet

Purpose

It is important to have clear and pertinent measures in place to underpin your service improvement work. If you focus measures within the wrong area, the changes that you introduce may be fruitless, or could even make the situation worse. Reliable measures provide valuable evidence of progress and prevent valid challenges from opponents of change.

This tool defines the required features of any measurement strategy that you may be using, plus the next steps you should take. It is also a valuable way of checking the quality of any measures currently in use.

When to use it

This tool is particularly useful in ensuring that you make consistent decisions when working with groups or team leaders. You can use it in a workshop setting to help identify the metrics currently in use, as well as agreeing what the measures do and how they are calculated.

If you are deciding on the features of a measurement system, use this template to help you design the processes for the collection of organisation metrics. It is also helpful if you are constructing a balanced scorecard or local measurements.

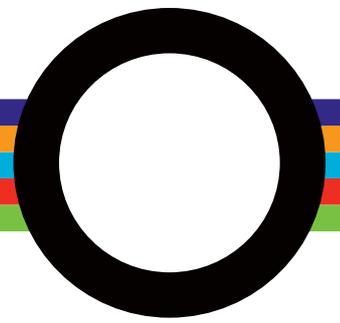
When you start an improvement project, it enables you to set up measures that will help to influence other people. Once you define the problem, use the tool to help others understand your thinking and reasons for action. When you monitor the effects of any changes, the tool also ensures a correct and full process.

You should aim to carry out a regular check on your measures, at least annually, to ensure that they are still relevant.

How to use it

Figure one - measures record sheet

Title The title should summarise what is being measured.	
Purpose Consider the purpose of measuring this aspect of performance. If there is no good reason, do you really need to measure it?	
Relates to Which trust objective does the measure relate to? Design measures to support their achievement. By completing this section you ensure the link is made.	
Target Which performance targets should you set and by when? This communicates precisely what you are trying to achieve.	
Formula How do you calculate the performance measure? Be precise: the formula must include exactly what you are measuring to avoid any confusion.	
Frequency Decide how often you will measure and how often you will review the measure itself.	
Who measures? Identify the person responsible for the measure.	
Source of data Specify the source of data so you can use the measure consistently. This way you can compare performance between periods accurately.	
Who takes action? Who is responsible for taking action on the measure?	
What do they do? Specify the types of action people should take to improve the performance of the measure.	



Examples

A clinical coding department wanted to be clear about the way in which its performance was assessed and monitored. Staff felt there was a confusing mixture of statistics collected by different people (finance department, internal audit clinical audit etc.) and that they were being pulled in different directions.

The manager collected a list of all the measures currently being used and opened a file of measures record sheets. Individual staff members were given a few of the sheets to describe the purpose of each measure and how it related to trust objectives etc.

The manager and a small group of staff then reviewed the collated information to rationalise the list for approval by the senior management team. The approved list was used to redesign processes to ensure the necessary data was collected automatically and summarised appropriately.

The measures record sheet now forms part of the department's standard operating procedures (SOP) and is reviewed annually to ensure that all measures are still required and relevant.

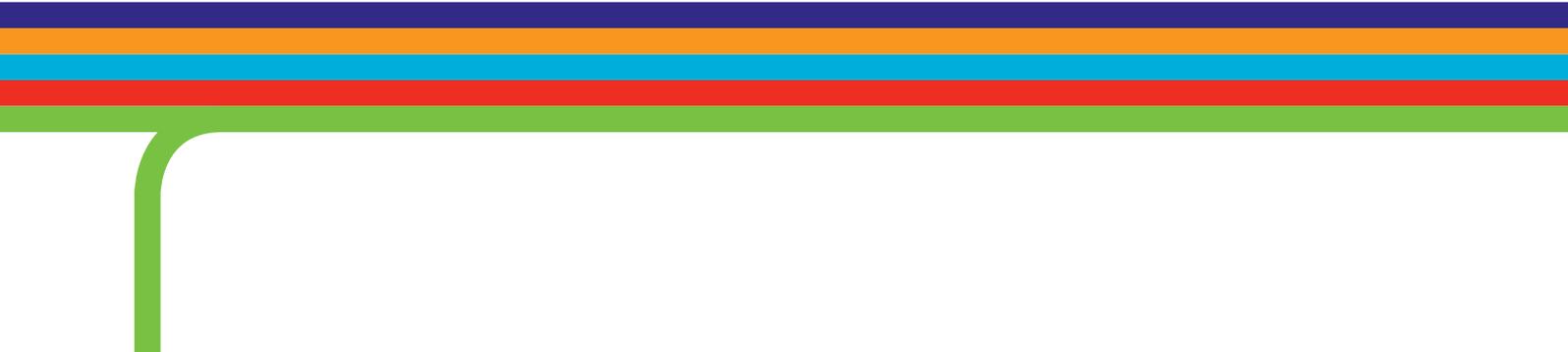
What next?

Having identified appropriate measures, it is crucial that you provide enough resources for collection and analysis. Data collection must be accurate and sustained if you want to track and analyse trend data.

You should present data collected from the various measures to people who are in a position to improve the system. Store the measures you define using the template in a central archive so you have a comprehensive performance management library.

Acknowledgements

From the Clinical Systems Improvement SKILL programme, source: Warwick Business School Performance Management Module


5

5.4 Managing variation

Purpose

There are many sources of variation in healthcare that can affect the flow of patients through care systems, as well as the quality and safety of the systems. Reducing and managing variation enables these systems to become more predictable and easier to administer. To effect successful service improvements, you need to understand the source of variation and use a range of tools to reduce and manage it.

When to use it

Reducing and managing variation are essential approaches to reducing delays in services and increasing the quality of the patient experience.

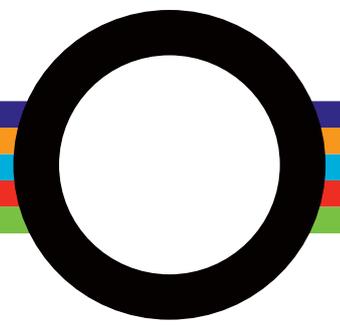
There are two reasons for this:

1. Waiting lists can build up because demand for work exceeds capacity. The mismatch is due to variation in both demand for work and in our capacity to deal with it. Evidence suggests that our capacity varies more than our demand.
2. Variation in the way we work, such as dealing with paperwork and the timing of decision making along a clinical pathway all impact the pace of patient progress and the number and length of unnecessary delays.

How to use it

There are two main types of variation: natural and artificial. Natural variation is an inevitable feature of healthcare systems. Sources of natural variation include:

- differences in symptoms and diseases that patients present with
- the times of day that emergency patients arrive
- the socio-economic or demographic differences between patients
- staff skills, motivation etc.



Artificial variation is created by the way the system is set up and managed. Sources of artificial variation include:

- the way we schedule services
- the working hours of staff and how leave is planned
- the order in which we see and treat patients
- how much work we group and deal with in batches
- how we manage clinics to deal with priority or urgent cases.

There are two further categories of variation, known as common cause and special cause variation.

Common cause describes variation that is predictable and expected. Special cause describes variation that is unusual or unexpected, such as extreme weather conditions or flu epidemics.

	Common cause Predicted or expected variation	Special cause Unusual or unexpected variation
Source of variation is natural	Patient's age, gender, disease, condition, personal circumstances.	An exceptionally underweight child turns up at a health clinic triggering social welfare concerns. It's the first time the clinic has seen this child.
Source of variation is artificial (i.e. comes from the systems we develop)	<p>Some doctors make decisions weekly while others do this daily.</p> <p>Ordering different tests for the same clinical presentation.</p> <p>Different systems to manage consultant to consultant referrals from referrals from GPs.</p> <p>Patients or tests being seen / dealt with out of turn.</p>	<p>A series of things go wrong, the patient is 'lost' in the system and waits for three years.</p> <p>Someone coded in the wrong number.</p> <p>The patient's surname was Smith.</p> <p>The test results were put in the wrong pile.</p> <p>The paperwork couldn't be found, the patient moved GP.</p>

[Statistical process control](#) (SPC) is a complementary tool that looks at variation using a statistical methodology to help you identify and tackle predictable and unpredictable variation.

Step one

Identify the service area in which you want to understand the variation. This might be referrals to a service (the number of appointments available to meet the demand and the actual activity that takes place) or the variation in specific hospital acquired infections by procedure.

Step two

Undertake a data collection, either through your hospital information systems or using check sheets.

Step three

Using run charts, plot the information on a graph.

Step four

Use [statistical process control](#) (SPC) to help understand the variation.

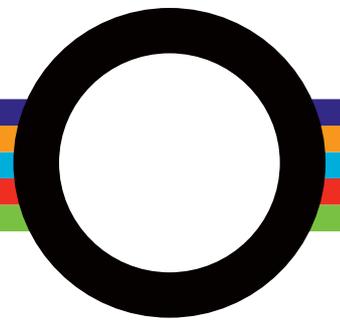
Step five

Analyse variation in capacity and demand.

Questions you should ask include:

Is the source of the variation mainly natural?

- Identify patient characteristics - age, gender, clinical presentation - to find patterns that may be associated with delays or resources being wasted (e.g. patients not attending). Seasonal patterns may be relevant.
- Identify patient characteristics that may be associated with procedure or care pathways. For example, in one hospital a study showed that six procedures made up 52 per cent of the work. If you are able to link specific patient characteristics to these procedures, you are using natural variation to your advantage. Some people call this segmentation (see the [demand and capacity management](#) and [identifying problems](#) sections).
- Present what you find graphically. You may wish to involve your information department in this.



Is the source of the variation mainly artificial?

Select a patient journey, procedure or administrative process and map it out to identify sources of variation. Some techniques you could use include:

- [Process mapping](#) techniques that involve the team. These will help you collectively spot opportunities for improvement and redesign to reduce variation along the pathway.
- Comparison of journey times using case files, a source of information along key stages of the last ten patients who received treatment (see example) or shadow a patient ([see patient perspectives](#)) to collect information.
- Comparison of pathway time for ten items of paperwork / ten case files using a [tracer study](#) approach – a form people fill in whenever they ‘touch’ a patient’s notes (see [process mapping](#)).

Take a complementary approach to looking at variation in capacity and demand. To identify variation in demand, look at patterns in the time of day, day of the week, weekly and monthly demand. How much does it vary?

To identify variation in capacity, look at patterns in annual leave, staff sickness, skill mix and rooms / equipment. The key here is to look at mismatches in demand and capacity and link this to the activity, which is the actual work done in a day, week or month.

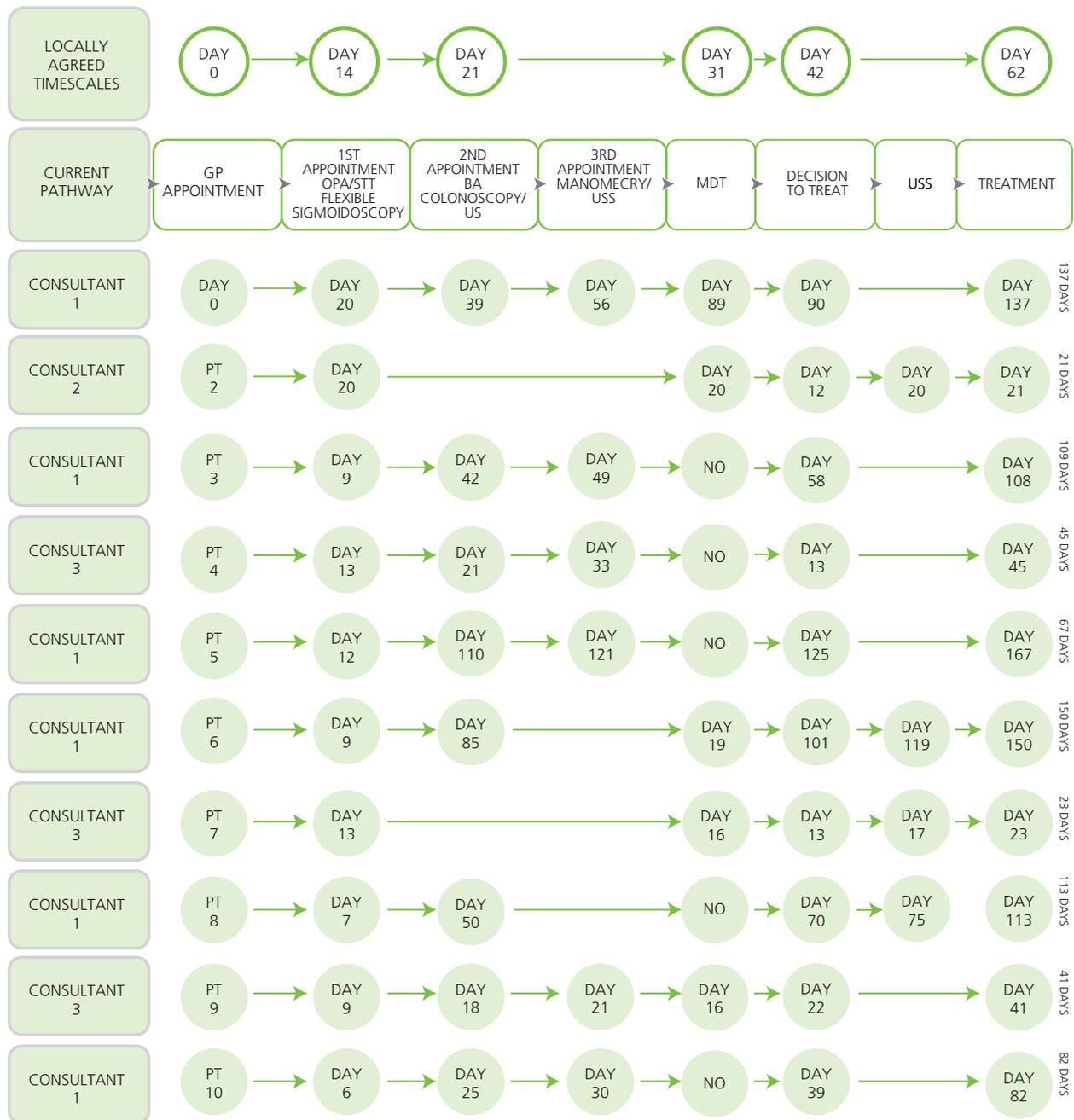
Present what you find graphically. Your information department may be able to help you to do this.

You are aiming to understand the real cause of variation - the why and not the what. [Root cause analysis using five whys](#) and [cause and effect \(fishbone\)](#) are just two of the tools available to help you to identify the root cause of artificial variation.

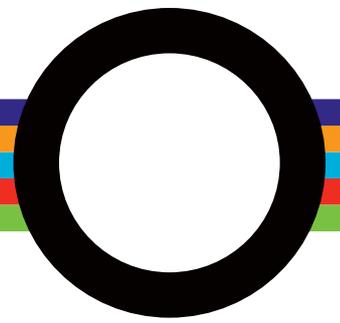
Examples

Mapping what happens to patients’ test results paperwork against key stages can highlight differences. The diagram on the following page shows the locally agreed timescales for the current colonic pathway, accompanied by an illustration for the last ten patients who went through this pathway under the care of three consultants. It shows variation from referral to treatment of 21 to 167 days.

This is enough to have a useful discussion to try and understand the causes of the differences and identify potential solutions.

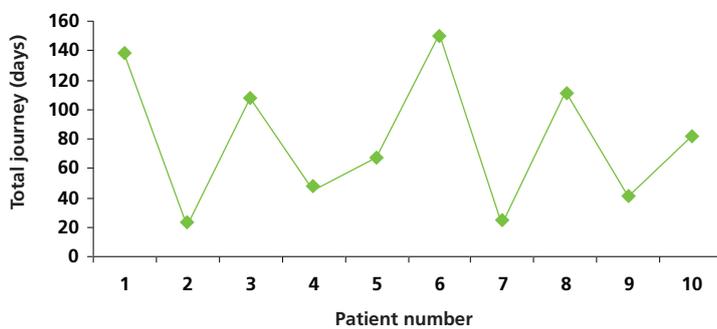


10 LAST PATIENTS TREATED THROUGH PATHWAY



Taking the information from the mapping exercise, the next step is to plot the total journey time in days on a run chart (see graph). A run chart is a great way of creating a visual picture of variation. If you have more than 25 data points you could use a [statistical process control \(SPC\)](#) chart. This draws in lines to demonstrate how much variation there is in the system.

Colonic Pathway - The Last 10 Patients



Source: Cancer Services Collaborative Improvement Partnership How to Achieve Cancer Waiting Times, 2006.

What next?

If you are to reduce or manage variation, you need to engage other members of staff. The [clinical engagement](#) and [staff perceptions](#) tools may help you do this.

The source of variation is important: we should aim to reduce artificial variation and manage natural variation.

Sometimes there is so much variation - say in referral to treatment times - that things seem chaotic. Spend a bit of time understanding why. It is possible you are looking at two or more very different clinical pathways. If so, look at the pathways separately to understand where you should focus improvement efforts. An alternative explanation is that there is no set agreement for the way things are done - one improvement focus could be to show staff the impact this has on patient care.

Other useful tools and techniques that may help you

- [Statistical process control](#) looks at variation using a statistical methodology to help you to identify and tackle predictable and unpredictable variation.
- [Reliable design](#) shows how reducing variation is key to higher reliability.

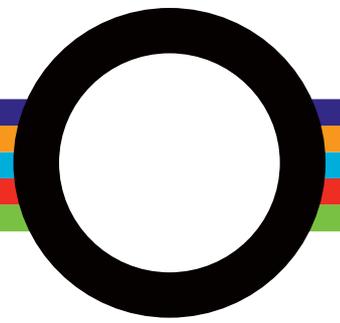


Background

The principle of looking at variation and keeping a steady flow of work originates from Deming. Many improvement methodologies have reducing variation at their core, for example Lean, Six Sigma, clinical systems improvement and reliable design.

Acknowledgements

Improvement Leaders' Guide: Improving Flow, NHS Institute for Innovation and Improvement



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5.5 Statistical process control (SPC)

Purpose

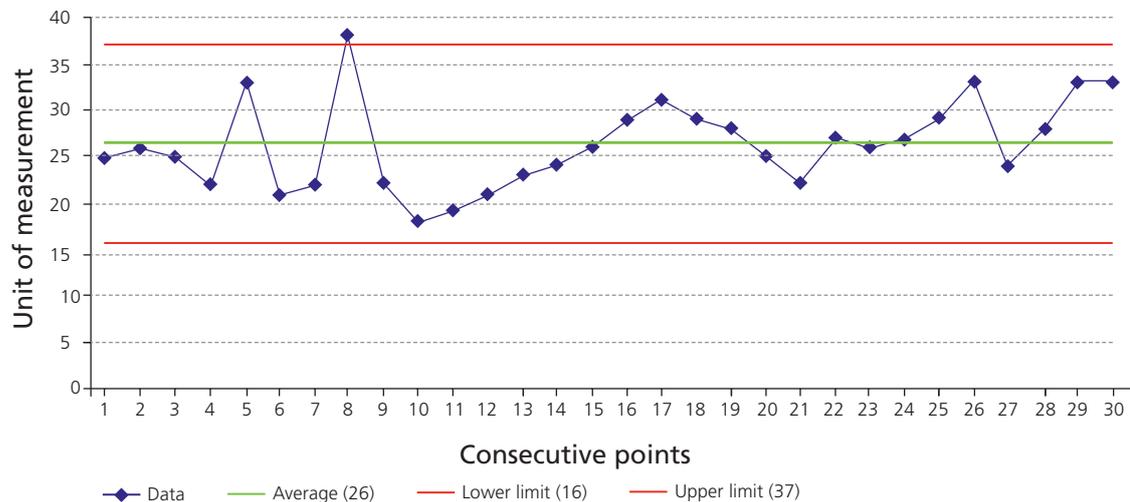
Statistical process control (SPC) is a practical statistical approach to resolving problems. It can help you understand the scale of any problem, gather information and identify possible causes when used in conjunction with other investigative tools e.g. [process mapping](#) and [spaghetti diagram](#). You will then be able to measure the impact of any improvement and evaluate its worth.

When to use it

SPC should be used throughout the life cycle of the project to help you identify a project, get a baseline and evaluate how you are currently operating. SPC will also help you to assess whether the project has made a sustainable difference.

How to use it

An SPC chart looks like this:

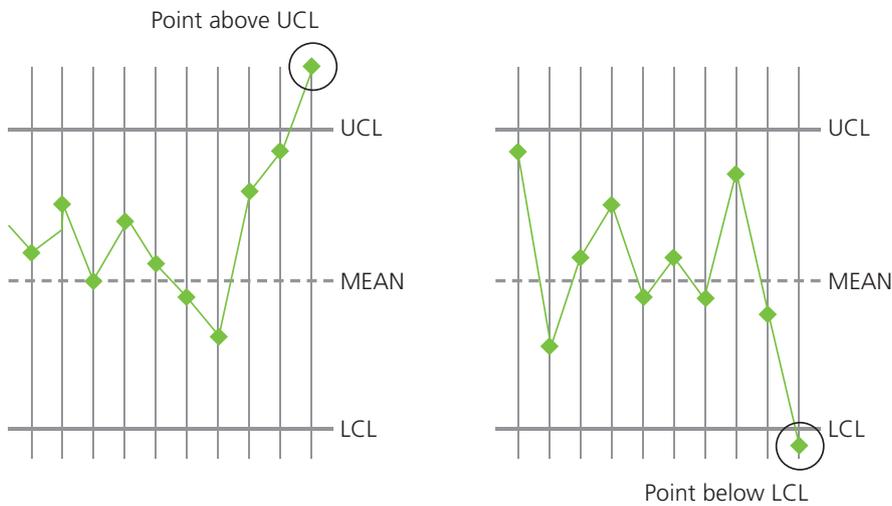


SPC tells us about the variation that exists in the systems that we are looking to improve.
S - statistical because we use some statistical concepts to help us understand processes.
P - process because we deliver our work through processes i.e. how we do things.
C - control, by this we mean predictable.

When interpreting SPC charts, there are four rules that help you identify what the system is doing. If one of the rules has been broken, this means that special cause variation is present in the system. It is also perfectly normal for a process to show no signs of special cause. This means that only common cause variation is present.

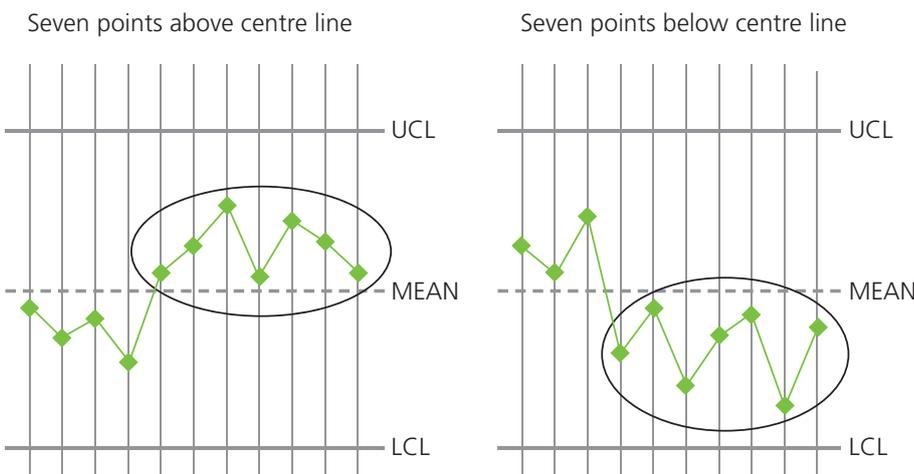
Rule one

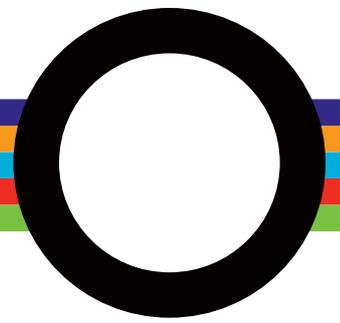
Any point outside one of the control limits:



Rule two

A run of seven points all above or all below the centre line, or all increasing or decreasing:

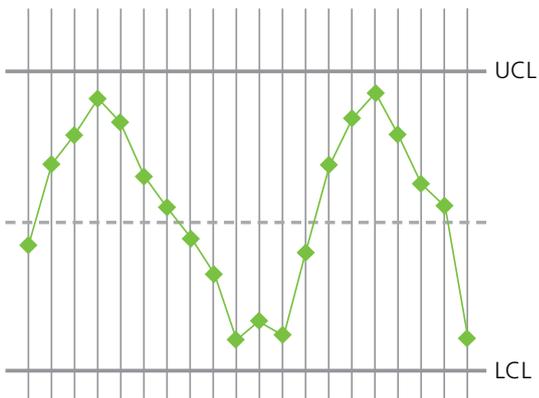




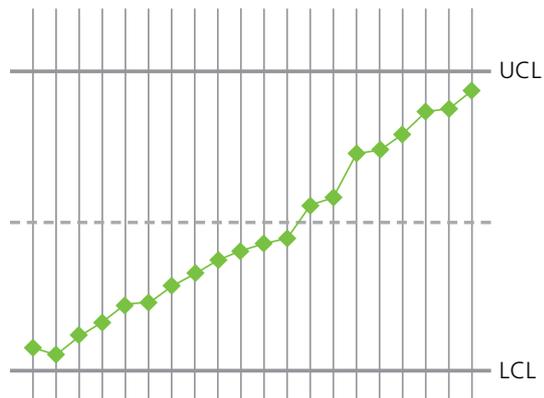
Rule three

Any unusual pattern or trends within the control limits:

Cyclic pattern



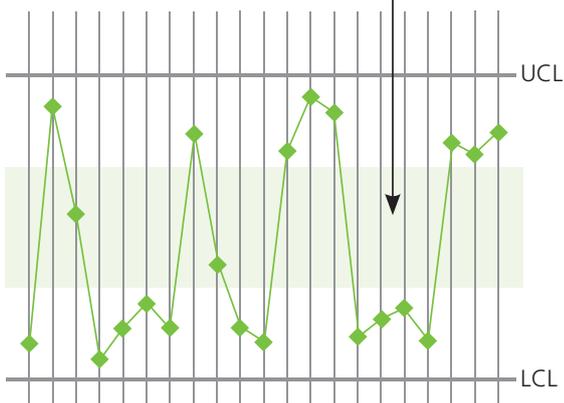
Trend pattern



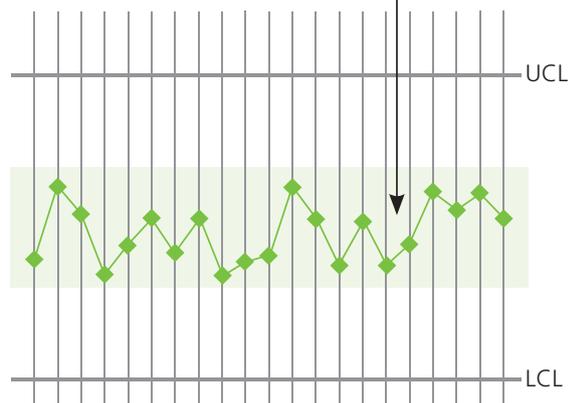
Rule four

The number of points within the middle third of the region between the control limits differs markedly from two thirds of the total number of points:

Considerably less than 2/3 of all the points fall in this zone



Considerably more than 2/3 of all the points fall in this zone



If you want a more efficient system, you need to reduce the variation. Common causes and special causes of variation indicate the need for two different types of improvement. If controlled variation (common cause) is displayed in the SPC chart, the process is stable and predictable, which means that the variation is inherent in the process.

If you want to improve the process, you will have to change the whole system. If uncontrolled variation (special cause) is displayed in the SPC chart, the process is unstable and unpredictable. Variation may be caused by factors outside the process. In this case, you need to identify these sources and resolve them, rather than change the system itself.

There are three issues that you should be aware of when using SPC charts to improve a process:

1. You should not react to special cause variation by changing the process, as it may not be the system at fault.
2. You should not ignore special cause variation by assuming that it is part of the process. It is usually caused by outside factors, which you need to understand in order to reduce.
3. You should ensure that the chart is not comparing more than one process and displaying false signals. An example of this would be data covering two hospital sites, or two procedures that are very different.

Tips

- You may need to collect the data for analysis as it may not be available. To be statistically rigorous, the more frequently you record your observations the better: daily or weekly is better than monthly.
- Aggregate data is discouraged (i.e. the use of percentages, as this often hides the pattern of the data).
- The problem you are observing may be the means by which you are measuring, not what is really happening. Sometimes it is better not to act if you're not sure; investigate further instead.
- Remember that when you change something in the process, the data points after the change will be from a new system. When you have a run of points that break a rule, you will need to recalculate the SPC control limits to show an improvement (showing the control limits of the new system).

What next?

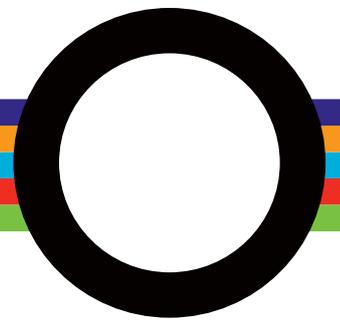
The following tools will be helpful:

[PDSA cycles](#) - measuring the impact of a PDSA cycle is best done with SPC.

[Managing variation](#) - essential reading for using SPC charts.

[Process mapping](#) - useful for understanding variation revealed by SPC charts.

[Root cause analysis using five whys](#) - useful for understanding variation revealed by SPC charts.



Additional resources

Books

Six Sigma and the Total Quality Toolbox, Bicheno and Catherwood, 2005 (Picsie Books)

Understanding Variation, D. Wheeler, 1995 (Knoxville: SPC Press Inc.)

Making Sense of Data: SPC for the Service Sector, D. Wheeler, 2003 (Knoxville, SPC Press Inc.)

Economic Control of Quality of Manufactured Product, W.A. Shewhart, 1931 (New York, D Van Nostrand)

Out of the Crisis, W.E. Deming, 1986 (Massachusetts: MIT)

Controlling Variation in Health Care: A Consultation from Walter Shewhart, D.M. Berwick, 1991 (Med Care 1991; 29: 1212 -25)

Problem Solving, TQM and Six Sigma, A. Esain, 2006 in Rich, Batemen, Esain, Massey and Samuel

Lean Evolution: Lessons from the Workplace, Cambridge University Press

Background

The method of SPC was created by Walter Shewhart during the 1920s when he was investigating the production of faulty telephones for Bell Telephones.

He found that the company continually changed the production line when faulty handsets were produced. This resulted in the production of different formats of handset – telephones that wouldn't talk to each other!

Through Shewhart's work, Bell Telephones understood the importance of reducing the variation in the manufacturing process to ensure Lean production. Shewhart framed problems as 'assignable cause' and 'chance cause' and introduced the SPC chart to differentiate between the two.

1920s: First control charts developed by the communications industry.

1930s: Adopted by other industries.

POST WAR: America ignored the principles of SPC.

1950s: Japan began to widely use the principles of SPC in industry.

1980s: Ford Motor Company adopted SPC principles due to pressure on the US market from Japanese imports.

2000s: SPC adopted in the NHS.



Data should always be presented in a way that preserves the evidence. Walter Shewhart (1931) suggested that displaying data using averages and aggregates loses the richness of the individual data points. SPC displays the individual data points (in the NHS these are often individual patients), then provides analysis to interpret what the user sees.

SPC and PDSAs were created by the same person, intended to be used together. PDSA improvement cycles should only be implemented in a system that displays common cause variation. If special cause variation is present, then the system is not stable enough to ensure that the information is a result of the PDSA change.

**5**

5.6 Methodology for measuring benefits

Purpose

This tool can give you a comprehensive list of the benefits that a project has for patients and the NHS. Demonstrating benefits helps make the case for reform and is a useful mechanism for gaining the support of patients and other stakeholders.

Benefits will not necessarily relate to lower budgets, but may indicate an improved working environment, more time for staff training and ongoing improvements to the quality of service.

When to use it

When carrying out any service improvement, it is important that you are able to measure and demonstrate the benefits. It is advisable to decide upon a methodology prior to beginning a change project. You can also attach costs to these benefits, but you may need input from an accountant or economist to do this.

How to use it

Going through the list of questions in conjunction with the methodology flowchart will give you a comprehensive list of your project's benefits.

Step one - identifying NHS benefits

Inputs

- a) Any changes to the use of staff: medical staff / clinicians, laboratory staff, support staff e.g. secretaries, receptionists and organisational support functions e.g. personnel or finance?
- b) Any changes to the use of equipment?
 - Are we using equipment more / less intensively?
 - Used for more hours during the day?
 - Used at full capacity for more of the time or standing idle?
 - Can we share with others?
 - Is any equipment surplus or irrelevant?
 - Is any equipment mothballed or replaced by newer technology?

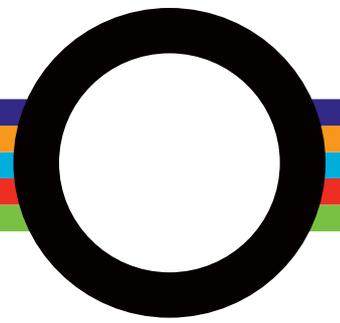
- c) Any changes to the use of buildings and beds?
 - Have we saved any beds by reducing waiting?
 - Are patients being discharged earlier or more quickly and if so, how many bed days are we saving per patient?
 - Is there some space we no longer need because of less waiting?
 - Smaller reception area and fewer chairs?

Processes

- a) How much quicker is throughput of outpatients from arrival to leaving? Would this allow us to see more patients? If so, how many (what percentage) more?
- b) Do patients require fewer outpatient visits along the care pathway? If so, how many fewer on average and what is the reduction in the average pathway?
- c) How much quicker is throughput of inpatients from arrival to leaving?
 - Are they discharged more quickly or earlier in the day?
 - How many bed days are saved on average?
 - Would this allow us to see more patients? If so, how many (what percentage) more?
- d) How much quicker are tests e.g. bloods, scan, ultrasound?
 - Would this allow us to throughput more tests? If so, how many (what percentage) more?
 - How much time does this shave off the patient journey?
- e) How much quicker is throughput of follow ups from arrival to leaving? Would this allow us to see more patients? If so, how many (what percentage) more?

Outputs

- a) Volume unchanged?
 - Have outputs stayed the same?
 - Service was meeting relatively static demand?
 - Same outputs with less inputs means greater efficiency – what percentage increase?
- b) Volume up?
 - Even though patients are seen more quickly and less often, demand exceeds supply.
 - Waiting times will have reduced – by how much on average?



c) Volume down?

- Have output volumes gone down e.g. because fewer outpatient appointments are needed?
- Can we shorten wait times?

d) Quality of outputs improved?

- How has the quality of outputs improved?
- Are tests more accurate, are there fewer recalls and re-tests?
- Lower readmissions?

Step two - identifying benefits for patients

Waiting benefits

a) Reducing waits before referral

- Quicker outpatient appointments? If so, how much quicker (in days or percentage)?

b) Reducing patient journey

- Less time in outpatients
- Fewer outpatient visits and fewer cancelled visits

c) Reducing patient journey from treatment and beyond

- Fewer cancelled operations
- Earlier discharge e.g. because of quicker and more accurate tests
- Quicker follow ups and fewer cancelled follow ups
- By how much is the patient journey reduced overall?

Quality benefits

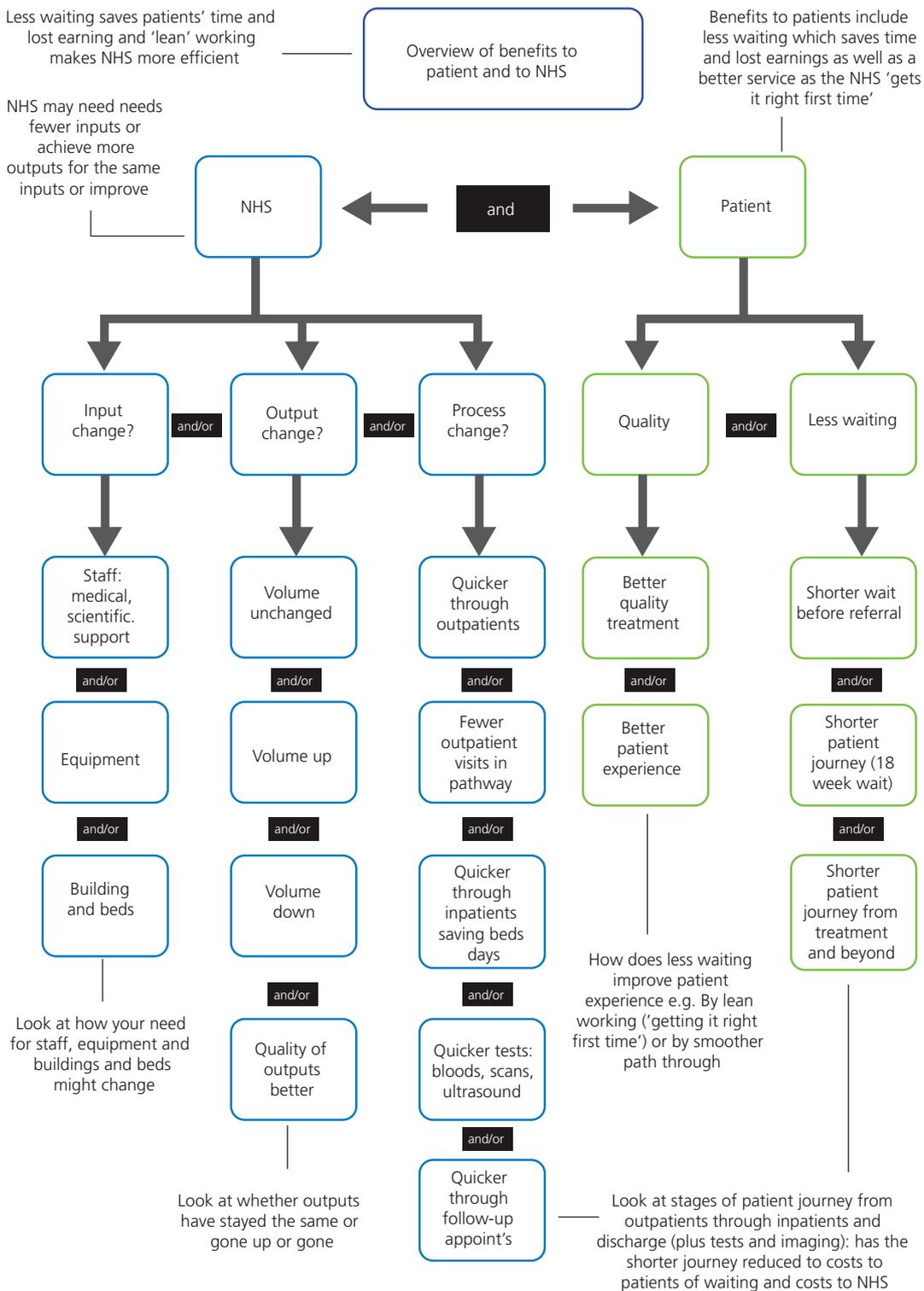
a) Better quality treatment

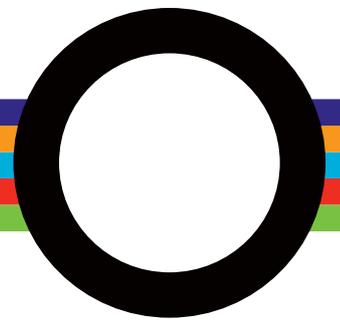
- Getting it right first time
- More timely treatment may avert morbidity or mortality

b) Better patient experience

- Patients appreciate shorter waiting times
- Quantify patient satisfaction before and after programme. How great (percentage on scale) an improvement?

Figure one - methodology flow chart





What next?

You should now have firm evidence of the benefits for the patients, your trust and the NHS. Make sure you communicate this information widely to gain support for further reform. Communication tools including the [communications matrix](#), [clinical engagement](#) and [stakeholder analysis](#) will help you. Other useful tools and techniques include [benefits realisation](#) and [performance management and balanced scorecard](#).

Acknowledgements

Helen Roberts, Health Economist



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5.7 Modelling and simulation

Purpose

Modelling and simulation tools give you a range of options for testing and experimenting with prospective improvements. They provide a safe environment to evaluate the potential impact of change. This helps to reduce wasted resources and identify possible unforeseen results.

By using these tools to predict short term and significant variations in healthcare, hospitals can also balance their emergency and elective workloads more effectively.

When to use it

These tools are particularly useful if you are considering making long term or major changes, the impact of which can be difficult to predict. Using modelling and simulation tools before you initiate change will help you to plan and carry out more effective service improvement.

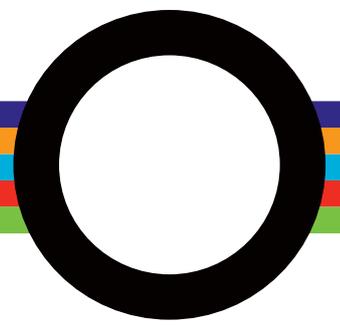
Using forecasting software to predict peaks in emergency care workload can also help to avoid cancelling elective workload during the winter months.

How to use it

Forecasting software works in two ways. Firstly, IT systems mathematically model trends in historical data and show the impact of these trends continuing. Secondly, some systems incorporate data from other sources e.g. weather forecasts and flu watching (where there are known links to healthcare demand) using changes in these to predict a variation in demand for healthcare.

Different types of tools are appropriate for different situations.

1. Health system simulation tools can develop a virtual health system that allows new systems of care to be tested in a simulated context. You can use this to evaluate the potential impact of changes in population, demand and the burden of disease.
2. Care pathway analysis tools allow health systems to map out the patient's healthcare journey as a process map. You can then modify it to show the potential impact of new ways of working or the effects of new technology and practice.
3. Benchmarking tools allow you to compare the current performance of a health system with the performance of similar health systems. When combined with simulation, you can also test the impact of changing performance to that of another health system or group of health systems.



4. Forecasting tools allow operational and strategic service planners to predict short and long term changes in healthcare demand. This means they can put service changes in place to meet any variations in demand. Many systems provide a single point forecast with a reliable picture of how demand will change over hours and days. If used in conjunction with simulations to model a range of future scenarios, this provides a powerful decision support tool for the health service planner who is forecasting over longer timescales.

Examples

Health simulation tools

Many off the shelf simulation packages have been used within the NHS to test future service changes, model the impact of disease outbreaks or forecast the impact of population growth.

- The NHS Institute for Innovation and Improvement funded a bespoke simulation package called Scenario Generator. This package has 100 modelled care pathways, with the links to whole health systems already in place. Populations are built up from GP practice level information, so any health system, from local to national, can be simulated.
- Simulation software was used by the NHS in Ayrshire and Arun to model the benefits of different options for acute reconfiguration. This process highlighted some major potential problems with the existing configuration's ability to cope with clinical shortages, changes in working times and the requirements of new technology. It also helped inform the decision on the best option for reconfiguration. During public consultation, the sponsors of change were able to demonstrate the impact of different models of care live to public audiences.

Care pathway analysis tools

- Map of Medicine is available through the NHS Connecting for Health programme and is free to the NHS. Designed for the practitioner, it identifies the most appropriate route for the patient from diagnosis to treatment. Comparing local pathways of care with those in Map of Medicine can help you identify potential inefficiency, duplication or constraints in the local pathway.

Benchmarking tools

- NHS Comparators provides comparative data to enable commissioners and providers to investigate aspects of local activity, costs and outcomes. This includes activity and costed data through the payment by results (PbR) tariff from the Secondary Uses Service (SUS), together with Quality and Outcomes Framework (QOF) information, GP practice demographic population profile data and prescribing data.
- NHS Better Care, Better Value indicators use benchmarking techniques to identify potential areas for improvement in efficiency via 15 high level indicators. The indicators are primarily aimed at commissioners (PCTs) and acute hospital providers (AHTs).

- The NHS has developed its own web based benchmarking software known as SHAPE (Strategic Health Assets and Performance Evaluation). The software allows providers and commissioners to compare costs and activity by condition to look at length of stay, day surgery and outpatient rates. They can then identify future service and asset requirements, based on the top quartile performance.

The system also links to a geographical information system, allowing you to compare performance with the demographic trends of the local population and to test whether different service configurations could improve performance.

Forecasting tools

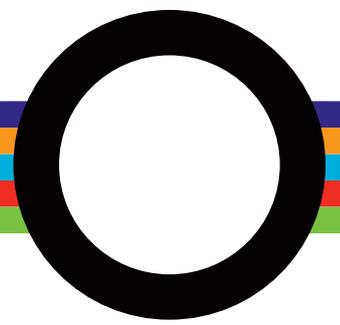
Some hospitals have used forecasting software for an overview of their operations by measuring the following across the organisation or health system:

- Patient flow – a precise measure of pressure in the system. If the flow of patients in is not matched by the flow of patients out, this increases pressure on the system.
- Length of stay – one of the main causes of pressure in a hospital.
- Inpatient occupancy – the number of patients that are currently in the hospital and the number forecast.
- Real-time status – shows the current operational status of the hospital so managers have an understanding of the pressures that the hospital is subject to.

What next?

In January 2008, the NHS Institute for Innovation and Improvement completed a desktop study into the software available for modelling pathways. The NHS Institute makes no recommendations, but sets out how each type of software can help with modelling to improve provision of patient pathways.

Use the table to assess which tool or technique may be suited to the improvement initiative that you are working on.



Type of software	Example	Patient outcomes	Service improvement and redesign	Demand, capacity and activity modelling	Pathway performance monitoring	Planned versus unplanned care
Process mapping	Microsoft Visio	◐	◐	○	○	○
Forecasting and demand modelling	Forecaster	○	○	◐	○	◐
Balanced scorecard systems	QPR	◐	◐	◐	◐	○
Six Sigma and Lean software	SigmaFlow	●	●	●	○	○
System dynamics software	WSP Simulator Isee/Ithink	◐	◐	●	○	●
Scenario planning software	Scenario Generator	◐	◐	◐	◐	●
Benchmarking	Shape	○	○	○	◐	○

KEY	
○	No relevant functionality
◐	Some helpful functions or helpful but not user friendly
●	Helpful and user friendly



Additional resources

Websites

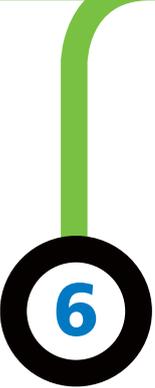
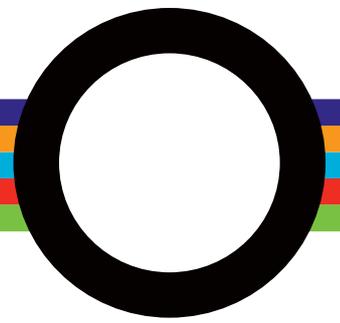
www.productivity.nhs.uk – for Better Care, Better Value Indicators

www.ic.nhs.uk/nhscomparators – for NHS Comparators

Background

Simulation has its origins in the early development of aircraft testing and flight simulation and the expansion of role play. By the mid 1980s, role play exercises were being supported by computer models as part of strategic planning and training in the military, aeronautical and oil industries.

Simulation software is now a routine planning tool in most industries and many parts of the public sector e.g. aeronautics, logistics, criminal justice, education, housing, private healthcare and pharmaceuticals.



6

Demand and capacity management

Demand and capacity management – an overview

Purpose

It is important that you understand the whole patient pathway in order to make the most of patient flow through a healthcare system and improve the patient experience. Understanding and managing demand and capacity is a key approach to removing some of the visible and hidden backlogs along the patient pathway.

A disruption in flow often presents as a queue (more than one person waiting for a service) or as a waiting list (backlog). These usually develop as a result of variation between capacity and demand. You need to understand and be able to measure and compare demand, capacity, activity and backlog to manage queues.

This will enable you to identify bottlenecks, which can be defined as the smallest capacity in the patient pathway relative to the demand. It is essential that bottlenecks are managed so that you can make the necessary improvements to maintain the flow of patients and prevent queues forming.

By implementing proven good practice approaches to managing healthcare services, you will be able to minimise wasted appointments and bed capacity. This will ensure patients are seen in a timely manner and receive a safe, high quality service.

When to use it

Demand and capacity management should be routinely undertaken as part of the day to day management of any service. In particular, you should focus on services that have queues or the longest waits so you can identify and manage the backlog, maintaining patient flow.

It is important to recognise that the bottleneck is not always the area of care with the longest queues, hence the need to understand the whole patient journey. Making changes without understanding the complete pathway and identifying the root cause of the disruption in flow may make matters worse.

How to use it

There are a number of proven approaches that you can use to manage the patient pathway, to optimise the use of available capacity to meet demand and improve the patient experience.



Most of these good practice approaches are well established in healthcare organisations today.

The following tools are particularly useful in helping you to manage demand and capacity. The specific detail of how to use each of the tools can be found in the relevant sub sections:

- 6.1 [Demand and capacity – a comprehensive guide](#)
- 6.2 [Theory of constraints](#)
- 6.3 [Flow – reduce unnecessary waits](#)
- 6.4 [See and treat patients in order](#)
- 6.5 [Clinically prioritise and treat](#)
- 6.6 [Glenday Sieve \(runners, repeaters, strangers\)](#)
- 6.7 [Reliable design](#)
- 6.8 [Role redesign](#)
- 6.9 [Lean – Ohno’s eight wastes](#)
- 6.10 [Reducing cancelled operations](#)
- 6.11 [Reducing did not attends \(DNAs\)](#)
- 6.12 [Reducing length of stay](#)
- 6.13 [Discharge planning](#)
- 6.14 [Day surgery – treat day surgery as a norm](#)
- 6.15 [Enhanced recovery programme](#)
- 6.16 [Patient information](#)
- 6.17 [SBAR – situation, background, assessment, recommendation](#)



6

6.1 Demand and capacity - a comprehensive guide

Purpose

Analysis has indicated that most waiting lists or backlog of works within the NHS are relatively stable, suggesting that they are caused by a mismatch in capacity and demand resulting from variation.

In order to maximise patient flow through a healthcare system, you need to address the entire patient process. This guide helps you get to the root of the mismatch problem, to understand why waiting lists and backlogs form and what you can do about it.

If you are able to identify the bottleneck and its constraint where delays occur, it will enable you to:

- Manage and plan work in all teams
- Increase throughput by reducing variation and / or matching variations in capacity and demand at the bottleneck
- Focus improvement efforts on the place (bottleneck) where throughput can be increased
- Shift capacity to the bottleneck or manage demand to the bottleneck
- Protect the bottleneck and constraint as the implications of reduced capacity affect throughput along the whole pathway
- Plan work around the bottleneck

When to use it

Delays occur when flow into a service is unequal to the flow out. When this happens, you need to undertake a demand and capacity analysis. Conversely, some services respond only to demand e.g. district nursing capacity sometimes equals demand. This demand fluctuates, so there may be opportunities for increased productivity on low demand days. An example of this could be planning a proactive visit to a patient with a long term condition to support admission avoidance.

If you want to know how well services are performing, you need to have reliable measurements for demand, capacity, activity and backlog in place. It is good management practice and should be routinely and systematically carried out.

By analysing the patterns that emerge from the data collected, you can start predicting demand and managing capacity to work in synchronisation, to reduce and remove the backlog or waiting list.

How to use it

Step one

Start by defining demand, capacity, activity and backlog.

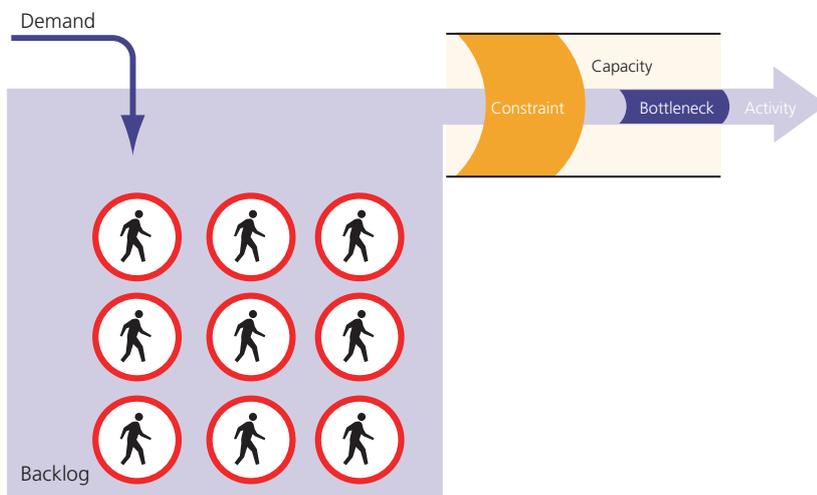
Demand - all the requests / referrals coming in from all sources and what resources they need (equipment time, staff time, room time) to be dealt with.

Capacity - the resources available to do work - for example, the number of pieces of equipment available multiplied by the hours of staff time available to run it.

Activity - all the work done. This does not necessarily reflect capacity or demand on a day to day basis. The activity or work done on a Monday may be the result of some of Monday's demand (i.e. emergency) and the previous week. The capacity is that which is available on the Monday, but activity is often less than available capacity (ideally 80 per cent of available capacity).

Backlog - previous demand that has not yet been dealt with, showing itself as a backlog of work or a waiting list. In a community setting, backlog includes all patients waiting to be assessed by the occupational therapist: both those on waiting lists and new patients in the system.

Figure one



Step two

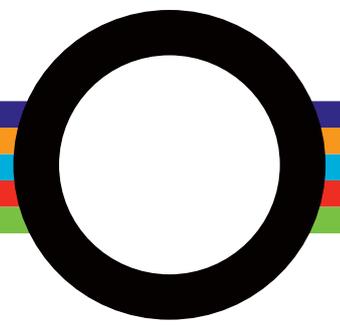
Map out the processes or patient pathways at a high level (see [process mapping](#)).

Step three

Identify the steps or parts of the process where there are the longest delays for patients.

Step four

Map this part of the process or the patient journey in more detail so you really understand what is going on. Map to the level of what one person does, in one place, with one piece of equipment, at one time. We also recommend that you look at the [process templates](#) tool at this stage.



Step five

Look carefully for the true constraint. The constraint is often a lack of availability of a specific skill or piece of equipment. Waiting lists or backlogs of work tend to occur before the constraint in the patient journey and clear after the patient has gone past the stage with the constraint. [Process templates](#) identify the constraint visually.

Step six

Keep asking 'why?' to try and discover the real reason for the delay (see [root cause analysis using five whys](#)). For example, the clinic always overruns and patients have to wait for a long time. Why? Because the consultant does not have time to see all her patients in clinic. Why? Because she has to see everyone who attends (including first visit assessments and follow up patients). Why? It is what she has always done.

Step seven

Building on your detailed map, move on to measurement of demand, capacity, backlog and activity. For comparison purposes, they should all be measured in the same units for the same period of time i.e. hourly, over a 24 hour period, weekly or monthly. It is also important to compare the four measures on a single graph.

7.1 How to measure demand

Predicting demand can be difficult as historical activity data is frequently used but often shows only the number of patients seen or the number of procedures carried out on a specific day. This tends to reflect the supply of services at that time rather than the true demand.

To measure demand at the bottleneck step, multiply the number of patients referred by the time in minutes it takes to process a patient. Include all demand sources i.e. orthopaedics, physiotherapy referrals, pain clinic and direct orthopaedic referrals in order to produce a complete picture of the true demand.

For example, four referrals x consultation time of 45 minutes each = 180 minutes (three hours) of demand each day. The illustration below shows how to measure demand.

Figure two – how to measure demand

Type of software	Minutes Taken to Complete Task	Requests Monday	Monday total	Requests Tuesday	Tuesday total	Requests Wednesday	Wednesday total	Requests Thursday	Thursday total	Requests Friday	Friday total	Total Requests	Total Demand (Minutes)	Total Demand (Hours)
Endoscopy	30	2	60	4	120	5	150	6	180	1	30	18	540	9.0
Colonoscopy	45	4	180	5	225	6	270	7	315	8	360	30	1350	22.6
New Consultation	30	2	60	7	210	5	150	3	90	2	60	19	570	9.5
Follow Up Consultation	20	1	20	3	60	5	100	6	120	4	80	19	380	6.3
CT Head	20	7	140	2	40	4	80	1	20	5	100	19	380	6.3
MRI Knee	20	4	80	3	60	4	80	4	80	9	180	24	480	8.0
Total	0	20	540	24	715	29	830	27	805	29	810	129	3700	61.6

7.2 How to measure capacity

Multiply the number of pieces of equipment by the time in minutes available to people with the necessary skills to use it.

For example, two treatment machines x 480 minutes (eight hours) of session time = 960 minutes (16 hours) of capacity each day. The following example shows how to measure capacity.

Figure three – how to measure capacity

Name of operator	Mins available (Monday)	Mins available (Tuesday)	Mins available (Wednesday)	Mins available (Thursday)	Mins available (Friday)	Mins available (Saturday)	Mins available (Sunday)	Total
A	240	0	180	0	0	60	0	480
B	0	240	240	0	60	120	0	660
C	180	0	300	0	0	0	240	720
D	0	300	0	300	320	180	0	1100
E	240	0	0	420	0	0	300	960
Daily capacity	660	540	720	720	380	360	540	3920

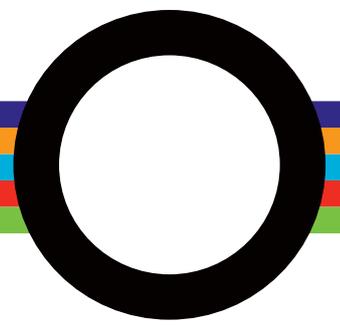
You can then convert capacity into the number of patients that could be seen.

So, if a patient takes 20 minutes to process, then the capacity is $960/20$, which equates to 48 patients.

Ensure that you measure all available capacity. Many people do lots of different things, so make sure that you measure any hidden capacity. For example, if you want to calculate the capacity for a pharmacist dispensing or preparing chemical substances, you would need to know all the activities they currently do and understand the proportion of their time devoted to each task.

Determining the true capacity of a system is often easier than predicting true demand. There are four steps:

- i. Determine the overall supply of the service - how much capacity is available, for example minutes in outpatient clinic time?
- ii. Consider how supply changes over differing weeks and months (e.g. staff leave) - it is important to understand actual capacity as opposed to potential capacity and then to look at ways of bringing the two closer together (e.g. co-ordinating consultant leave may result in fewer clinic cancellations).
- iii. Identify how the supply is provided over shorter time periods - it should be deployed evenly against predicted demand because the closer demand and supply can be matched, the better the system will run.
- iv. Is the service provided what is really required to meet the patient's needs? For example, the provision of radiology services for the management of DVT may be provided in a more efficient way.



7.3 How to measure activity

Multiply the number of patients processed through the bottleneck by the time in minutes it took to process each patient.

For example, 100 patients processed x 20 minutes each = 2,000 minutes (33.5 hours) of work done each day.

Warning: measures of activity numbers are misleading as this does not necessarily reflect demand or capacity. For example, activity in June may well include demand carried over from May, April or even March.

In addition, staff may have not been fully utilised. They may have been kept waiting for the patient, specialised pieces of equipment or test results. The following example shows how to measure activity.

Figure four – how to measure activity

Sum of minutes to complete task	Day					
	Monday	Tuesday	Wednesday	Thursday	Friday	Grand Total
Type of Request						
Colonsocopy	160	180	250	160	90	840
CT	150	70	50	125	40	435
Endoscopy	140	120	200	120	90	670
MRI	90	75	70	150	60	445
Grand Total	540	445	570	555	280	2390

7.4 How to measure the backlog

Multiply the number of patients waiting by the time in minutes it will take to process a patient through the bottleneck.

For example, 100 patients on the waiting list x 20 minute treatment time each = 2,000 minutes (33.5 hours) backlog.

Ensure that you don't count the same patient more than once; there may be patients on waiting lists at different parts of the same process, e.g. patients requiring radiotherapy treatment can be on waiting lists or backlogs of work for their pre-treatment, planning and simulation at the same time. Only count them in the earliest stage to avoid recounting them later in the process. In the radiotherapy example given, it will be at the planning stage.

The following example demonstrates how to calculate backlog.

Figure five – how to calculate backlog

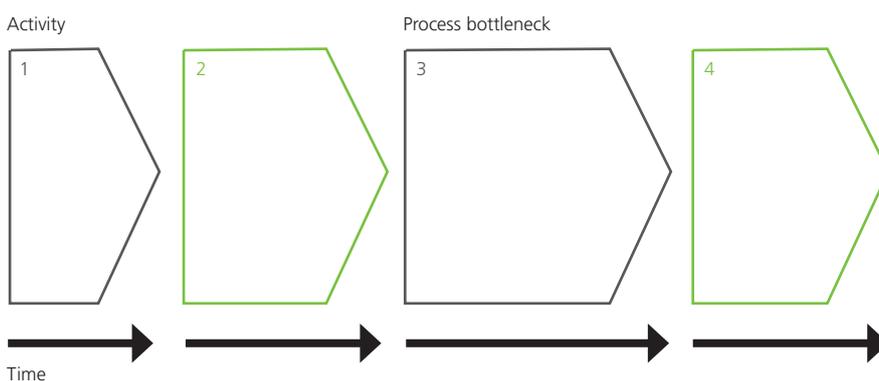
Type of request	Number waiting	Minutes taken to complete task	Minutes taken to clear backlog
CT Head	3	20	60
MRI Knee	15	20	300
Endoscopy	4	30	120
Total Backlog			480

7.5 Identifying a bottleneck

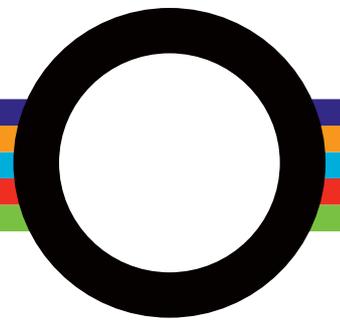
A bottleneck is any part of the system where patient flow is obstructed causing waits and delays. It interrupts the natural flow and hinders movement along the care pathway, determining the pace at which the whole process works. They have the smallest capacity relative to demand. There are two different types of bottleneck.

- Process bottlenecks - the stage in a process that takes the longest time to complete, often referred to as the rate limiting step or task in a process.

Process bottleneck

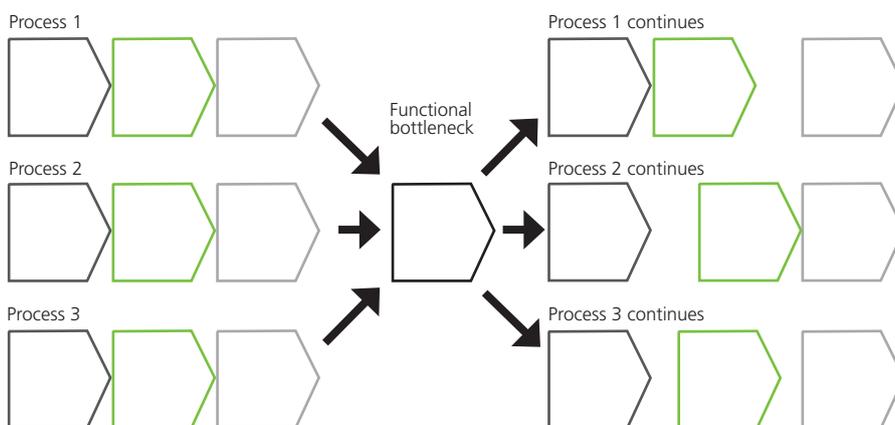


- Functional bottlenecks - caused by services that have to cope with demand from several sources. Radiology, pathology, radiotherapy and physiotherapy are often functional bottlenecks. They cause waits and delays for patients because one process, such as ENT surgery, might share a function with other processes, or a surgeon may be called to theatre when he is also needed in outpatients.



This type of bottleneck causes a disruption to the flow of all patient processes. They act like a set of traffic lights, stopping the flow of patients in one process whilst allowing the patients in another process to flow unhindered.

Functional bottleneck



You cannot make changes to improve the care process if you don't tackle the bottleneck. Any service improvement is unlikely to succeed because the patient will be accelerated into the queue, only to be halted further along the pathway by the bottleneck.

Once the flow into a service is known on a day by day and week by week basis, you need to manage capacity to match it, so flow out of a service is the same. Once you reach this equilibrium, you can work down the backlog and eliminate it.

Your next aim is to ensure that demand and supply remain in equilibrium. This requires you to match and manage supply and demand on a daily basis. This way, the clinical team can avoid backlogs of work building up and the restriction of patient access. It is important to flex capacity as much as possible to meet demand.

Examples

A GP practice situated in an area with some challenging health problems had an average waiting time of 4.79 days to see a GP. The practice reviewed its demand (the number of appointments requested daily) and its capacity (the number of appointments available daily).

This information allowed the practice to change the appointment system to match demand and to introduce different ways of accessing care e.g. telephone consultations and access to repeat prescriptions.

Based on the demand and capacity information, a skill mix approach was introduced. For example, a phlebotomist was appointed to ensure patients were seeing the most appropriate member of the healthcare team. The practice now has a waiting time of 0.32 days - an improvement of 93 per cent.

What next?

Think about reducing demand.

- Should we see all these patients? Implement protocols.
- Who is appropriate to see them? Provide alternatives.
- Can the patient pathway or the process at the bottleneck be streamlined? (Do we need to do all these steps?)
- Reduce waiting lists - reduce the demands they create.
- Prevention, patient education.

Think about increasing capacity.

- Use scheduling to find and ease the constraint.
- Reduce the number of appointment types to reduce complexity and carve- out.
- Work differently – flexible hours, weekends, pre-plan and cover annual leave, extended roles etc.
- Bid for resources only when the constraint is equipment or staff and working differently will not help.

Other useful tools and techniques

[Process templates](#)

[Process mapping](#)

[Theory of constraints](#)

[Root cause analysis using five whys](#)

[Statistical process control \(SPC\)](#)

[Managing variation](#)

[Discharge planning](#)

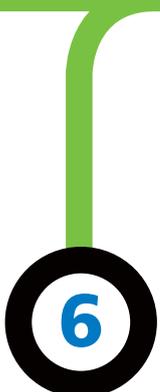
Additional resources

Books

Improvement Leaders' Guide – Matching Capacity and Demand, NHS Institute for Innovation and Improvement

Background

The theory behind capacity and demand originates from the [theory of constraints](#).



6

6.2 Theory of constraints

Purpose

Theory of constraints is an approach that demonstrates 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.

Just as the strength of a chain is determined by its weakest link, the limiting step and its constraint determine the throughput or work rate of a team, process or hospital. Knowing where the constraints are enables you to focus improvement efforts and employ specific operational management techniques to increase and maintain throughput.

When to use it

In complex systems like healthcare, there will always be rate limiting steps along pathways. National information suggests that specific hot spots include diagnostic capacity for some diagnostic tests and theatre capacity.

How to use it

The theory of constraints identifies a five step process to achieve continuous flow and improve throughput.

Step one - identify the system's constraint

Map out the processes or patient pathways at a high level (see [process mapping](#)). Identify the steps or parts of the process where there are the longest delays for patients.

Next, map this part of the process or the patient journey in more detail so you really understand what is going on. Do this to the level of what one person does, in one place, with one piece of equipment, at one time. Look at the process templates tool at this stage, in conjunction with [demand and capacity management](#).

Look carefully for the true constraint: it is often a lack of availability of a specific skill or piece of equipment. Waiting lists or backlogs of work tend to occur before the bottleneck in the patient journey and clear after the patient has gone past the stage with the constraint.

Keep asking 'why?' to try to discover the real reason for the delay (see [root cause analysis using five whys](#)). For example, the clinic always overruns and patients have to wait for a long time. Why? Because the consultant does not have time to see all her patients in clinic. Why? Because she has to see everyone who attends, including first visit assessments and follow up patients. Why? It is what she has always done.

Step two - get the most out of the constraint – exploit it

The constraint must always be managed as it determines the rate at which patients go through the system. It is therefore important to ensure there is no idle or wasted time at this point in the process.

For example, if a radiologist is found to be the constraint in a given process, any time the radiologist is waiting for patients or equipment would be considered wasted time - this in turn affects the overall throughput.

It is also important to always work this part of the process. Firstly, see if time can be released by improving the organisation of work processes and work environments.

Other examples that may help to ensure maximum utilisation are multi-skilling staff as well as assisting with set up and paperwork activities to enable trained staff to concentrate on the use of the machinery itself.

Where the constraint is equipment, it is important to ensure that it is always in use. Routine servicing of radiotherapy machines (a frequent constraint in the radiotherapy process) during the working week, will impact on throughput.

At the same time, see if processes can be improved. For example, if theatres are the constraint, try prepping patients outside of theatre to release theatre time.

Detailed [process templates](#) will help identify opportunities and help with the operational management of constraints. This information will help you develop careful schedules around the constraint to reduce wasted time.

Once you get the most out of a constraint, the bottleneck may move to another step in the process.

Step three - support the system's constraint

It is here that the organisation needs to ensure that its own policies, resources, behaviours, measurements etc. support the constraint to ensure that it is always working. This may require behaviour change in the organisation.

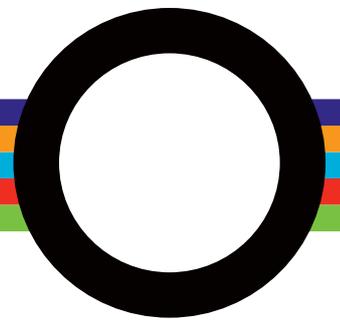
The theory of constraints recommends putting a buffer (a small queue) in front of the constraint to ensure it is always fed and there is no down time. An example might be that patients are scheduled to arrive so there is an average of two or three patients in the waiting room at all times.

Step four - elevate the system's constraint

If the constraint still exists after exploiting and subordinating everything else to it, then you can now elevate it and break it by investing resources in it.

This may require capital expenditure, overtime and increased bed or theatre capacity. This step is only necessary if the constraint is a true bottleneck. If you break the bottleneck, the constraint will move – and it is not easy to predict where to.

However, knowing the constraint may be sufficient to help improve the process and to help its operational management.



Step five - go back to step one

This ensures that you don't allow inertia to become the system's constraint. When the constraint is broken, go back to step one. This step highlights the need to focus on continuous improvement.

Examples

1. Staff at the Oxford Radcliffe Infirmary carried out a theory of constraints workshop, prompted by 64 elective neuro-surgical cancellations in a three month period, combined with increased sickness levels.

The neurosurgeon and anaesthetists all believed they were the constraint in the process, although on examination the problem was found to be bed capacity.

Changes introduced included one member of staff being given the role of bed manager, while the maximum daily number of elective patients was reduced from eleven to six.

Although initially these changes seemed counterproductive, the overall impact included reductions in patient cancellations, a drastic cut in out of hours operations and an increase in throughput of 16 per cent. (*A Story of Success, Hitting the Bottom* – Health Management, February 1999).

2. A study conducted in 2005 (*The Impact of Theory of Constraints in an NHS Trust*, Journal of Management Development, Vol. 24 No.2) investigated the impact of the theory of constraints on three NHS trust departments - neurosurgery, ophthalmology and ear, nose and throat (ENT) - in relation to reducing waiting lists and improving throughput of patients.

Significant improvements were made in ENT and ophthalmology, but not in neurology due to the size of the system, its complexity and its heavy reliance on support services. The authors of this study recommend that an organisation's social environment is taken into account in order to maximise the benefits of the theory of constraints.

What next?

Theory of constraints has an overlap with [Lean](#) thinking. Whichever approach is the main driving philosophy of your organisation, understanding where the rate limiting step is in the patient pathway can help you to understand how to improve throughput. This understanding will complement other improvement strategies.

Leadership, [stakeholder and user involvement](#) and using [project management](#) will support your improvement efforts. A structured approach applying small tests of change ([plan, do, study, act](#) – [PDSA](#)) with measurement will help you to make sure that any change results in an improvement.

Additional resources

Books

The Goal: A Process of Ongoing Improvement, E.M. Goldratt and J. Cox, 1993 (Gower)

The Improvement Leaders' Guide: Matching Demand and Capacity, NHS Institute for Innovation and Improvement

Using Industrial Processes to Improve Patient Care, T. Young, S. Brailsford, C. Connell, R. Davis, P. Harper J. and Klein, 2004 (BMJ, Vol.328)

The New Lean Tool Box, J. Bicheno, 2004 (PICSIE Books, Buckingham)

The Theory of Constraints, E. Goldratt, 1990 (North River Press, New York)

Factory Physics, W. Hopp and M. Spearman, 2000 (McGraw Hill, Boston)

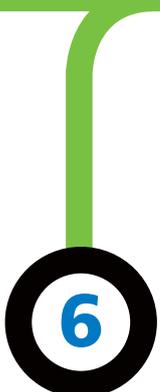
Websites

www.goldratt.com - The Goldratt Institute, birthplace of the theory of constraints

Background

The theory of constraints began with a simple concept about production lines, similar to the idea that a chain is only as strong as its weakest link (in Dr Goldratt's book). It can also be used to describe a business philosophy and an improvement methodology.

The theory of constraints has been developed over the last 20 years, predominately in the manufacturing industry. It has most recently been applied to healthcare with regard to reducing waiting times and increasing throughput. Its application alongside Lean thinking is now well recognised in the NHS.



6

6.3 Flow - reduce unnecessary waits

Purpose

Reducing unnecessary waiting along a patient journey and diagnostic pathways will shorten referral to treatment time and reduce **variation** in different teams' demand along the patient pathway.

Grouping work to do later, either by time or by type, causes peaks and troughs in demand for the next step in the process - like mini rush hours in the system. This can be difficult for some departments (e.g. diagnostics) which have requests for work from many different sources.

When to use it

Piles of work to do later, infrequent decision making and batching work and lists all represent a wait in a patient journey or diagnostic pathway. When delays or batching are causing unnecessary waiting, you need to look at ways of organising work differently.

To reduce unnecessary waits, you need to reduce piles of paperwork, ensure frequent decision making and reduce batching or batch sizes in diagnostics and waiting lists.

Examples of piles, batches and grouping include:

- A particular diagnostic test is only carried out once a week
- Letters are typed up once every three days
- Multi-disciplinary teams meet fortnightly
- Delays and time spent by a consultant to justify GP requests for ultrasound / other diagnostic tests (when 'wrong' referral rates are low)

How to use it

Step one

To understand if unnecessary delays and batching are a problem, start by identifying patterns of work that contribute to delays and where work is routinely piled up or batched together. You should also gather evidence of how they contribute to delays.

You will need to understand different perspectives: **clinical engagement** and **staff perceptions** can help with this as sometimes evidence alone isn't enough. For example, a consultant reverts back to her original behaviour of weekly decision making despite evidence that patients wait less if she reports on the same day as the CT exam because it is easier for her to report in one big group in a dedicated time slot.

Understanding the impact of change on individuals and developing systems to make the default easier is a critical way of thinking. Consider 'what's in it for me?' on behalf of your patients.

Watching how people work may give you ideas about which changes would work for them. For example, making sure that a surgeon is allocated extra time to write reports.

Next, identify the patterns of work and where unnecessary delays occur. Map out the process with your team:

- In a group, use [value stream mapping](#) (delay in patient pathway or other clinical pathways).
- If paperwork seems to be a big cause of delay, [a tracer study](#) (delay in paperwork) may be useful.
- Walk through the processes and / or the patient journey looking out for delays and batching (evidence like piles of paper). See [process mapping](#) for more information.
- Examples of batching will give you ideas about where it can occur along a patient's pathway.

Use these comparisons to discuss and understand the difference in journey times for different patients on the same pathway. This will highlight the scope of opportunities for improvement and generate discussion. Use case files to highlight differences between different consultants to open up conversations.

Which approach you use will depend upon your team and focus. It is better to include and involve people as early as possible so they can identify the solutions themselves.

Step two

Build up evidence of the impact of delays on patients. Lots of small delays add up but big delays are more obvious.

Identify a simple measure that you can collect easily to help you monitor progress. For example, the total pathway or process time using clock in time and clock out time (and date if necessary). You can then plot these on graph paper or electronically. Your information department may be able to help you and may also have some useful information already.

Step three

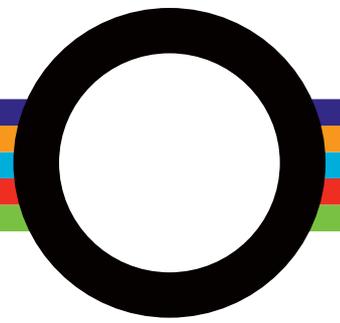
Identify options for improvement. Many solutions will become obvious to people when they see the process maps and have an opportunity to discuss what is going on.

Make a change in the process

- Reduce the number of steps in the patient pathway / diagnostic pathways: this reduces the opportunities for grouping, piling and batching work.

People make changes in the way they work

- Increase frequency of times when decisions are made / work is done.
- Shift habits and patterns e.g. do today's work today.



Support the changes

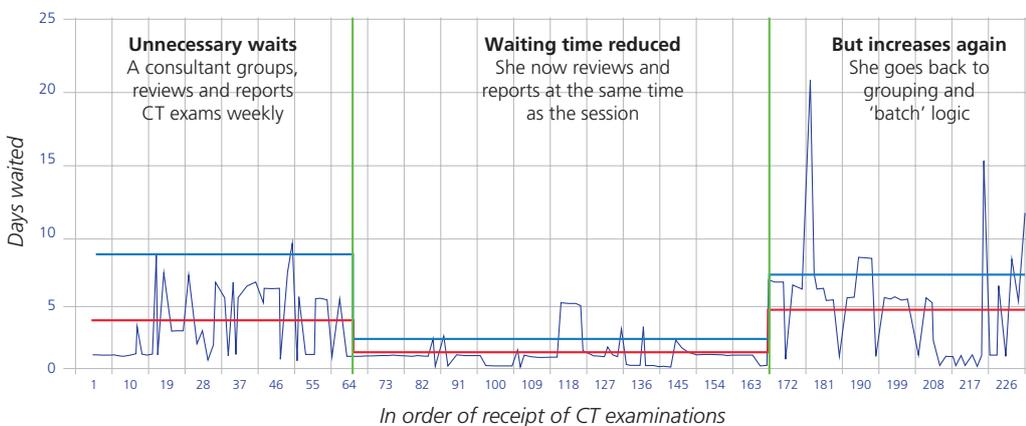
- Make sure there is time allocated for the change e.g. paperwork (it should be included in capacity and demand analysis).
- Look at changing behaviour and make it easier to batch less.

System change

- Schedule referrals or work as it comes in (the scheduling systems need to be in line with capacity and demand for the work).

Examples

A consultant groups and reviews her CT examination results once a week. This is because she believes her efficiency is important - by grouping them, she spends less time on each CT exam. This increases waiting. Her patients wait anywhere between one and nine days for their diagnostic assessment. However, when she tried reporting at the same time as the exam, waiting times were consistently less than two and a half days. However, when she went back to grouping and reporting weekly, waiting times increased again.



Imagine you are this consultant's patient. You could wait up to nine days for a CT scan report just because she doesn't review and report on the day of your scan. This is only one stage in your journey.

What next?

Start improvements at the end of the patient journey and the diagnostic pathway otherwise you may get a wave of demand for work. This is because, as all the mini waiting lists and piles of work are done, they move onto the next stage i.e. your backlog becomes someone else's to do list.



If you know where the bottleneck is along the patient or diagnostic pathway, you can use this to plan your improvements.

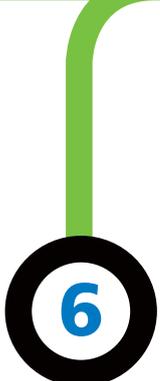
- Improvements before a bottleneck are likely to result in increased waiting just before the bottleneck.
- Improvements at the bottleneck may result in increased throughput of patients along the pathway.
- Improvements after the bottleneck are likely to result in decreased patient journey times but not increased number of patients seen along the pathway.

You also need to take additional steps to increase the number of patients or tests that can be dealt with. This releases existing capacity or adds additional capacity. Once you have decided on the steps you will undertake, you can use small tests of change (see [plan, do, study, act – PDSA](#)) to test and implement these steps.

Monitoring change is also very important, so build up evidence of your improvement. This will enable you to use your simple measures to show how delays have been reduced and to observe if the change has been sustained.

Background

The principles originate from [Lean](#) thinking and a focus on improving flow. The idea is to keep things moving as waiting is one of [Ohno's eight wastes](#) in systems. Having a steady, routine flow of work makes things predictable and manageable. Many peaks and troughs in work are caused by our way of working (see [managing variation](#)).



6

6.4 See and treat patients in order

Purpose

Seeing patients and doing things in turn reduces the differences (variation) in waiting times between patients, thereby reducing the maximum wait that some patients experience. It also reduces the effort of managing the queue and time spent prioritising. Using this tool will help you to improve flow and ensure all patients are seen in a timely manner.

Examples of when things aren't done in order include:

- Blood samples getting trapped at the bottom of the 'drop off' bucket until it's emptied
- Seeing patients in the order that a report is written, rather than in order of referral
- A consultant picks out a case that is interesting and brings it forward
- A GP has five different priorities for his patient letters to be typed
- One consultant has longer waiting list times than her colleagues

When to use it

You should use this tool all the time as it is the main way of ensuring that all patients are seen in a timely and equitable way.

How to use it

The underlying issues here relate to patterns and work habits, as well as mindsets. You will need to spend time talking and listening to [staff perceptions](#) and work out ways to challenge mindsets. In order to make your point, you may need to demonstrate the impact of doing things out of turn.

To evidence the impact of doing things out of order:

- Use the [clinically prioritise and treat](#) waiting list analysis method
- Show variation in referral to treatment times by consultant for the same HRG
- Conduct [tracer studies](#) to see if paperwork, samples etc. are managed in order
- Watch how people work to see if things are done out of order

The steps to seeing and treating people in order are:

1. Undertake a demand and capacity study on a day by day, month by month basis.
2. Work with the team to look at ways to bring demand and capacity into equilibrium.
3. Emphasise working down the backlog, minimising the number of queues and moving to as many Choose and Book appointments as possible.

Examples

This example illustrates the impact of one patient jumping the queue (where one patient is treated daily). The table shows how long patient five would have waited if she had not jumped the queue (five days) and how long she waits after jumping the queue (one day).

Patients one to four now all wait one extra day. The figures show that this does not have an impact on the average waiting time, but does increase the maximum number of days patients can expect to wait by one day. It also increases the variation in waiting times.

What difference does a day make?

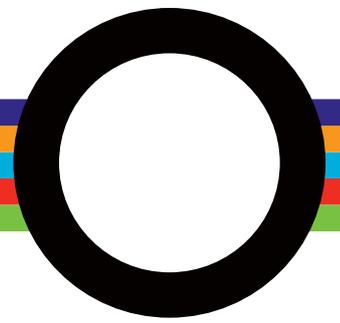
Patients treated in order of referral		Patient 5 jumps the queue	
Patient	Waiting time	Patient	Waiting time
1	5 days	5	1 days
2	6 days	1	6 days
3	5 days	2	7 days
4	6 days	3	6 days
5	5 days	4	7 days
6	6 days	6	6 days
7	5 days	7	5 days
8	6 days	8	6 days
Average	5.5 days	Average	5.5 days

What next?

Do other things that help patients to be treated in order:

- Pool similar work together and share staff resources (see www.institute.nhs.uk/qualitytools) – this is best done at referral and in line with capacity and demand. It reduces the chance that patients are treated out of turn because of variations in waiting time between different consultants.
- Reduce cancellations.
- **Reduce unnecessary waits.** This reduces the opportunity for things being done out of turn. Any pile of work, waiting list or queue increases the chance that something is done out of turn. For example, in Hereford, staff observed that samples were placed in a 'receiving bucket' to be dealt with. This meant that some samples waited longer because they were placed at the bottom. Staff reduced waiting times for the samples and the number in the bucket at any one time. This way, things were done in turn, reducing the variation in waiting times.

There is a range of examples from the [clinically prioritise and treat](#) programme from Hull and East Yorkshire Hospital Trust where they implemented a hospital wide approach to ensure patients were seen and treated in order.



In many departments, this resulted in unforeseen improvements including:

- A significant reduction in variation from 14 months to five months resulting in a reduction in the maximum waiting time from 14 months to eight months (cardio thoracic).
- A significant reduction in variation in average waiting times from 19 months to eight months and a reduction in maximum waiting time from 19 months to 14 months (ENT).
- A significant reduction in variation in average waiting times from 16 months to six months and a reduction in maximum waiting time from 16 months to 11 months (general surgery).
- A significant reduction in variation from seven months to three months with a reduction in maximum waiting time from eight months to three months (plastic surgery).
- A significant reduction in variation from 20 months to 12 months (trauma and orthopaedics).

What is unusual and significant about Hull and East Yorkshire Hospital is that they made the decision to have a hospital wide approach.

Background

The rule of first in first out originates from queuing theory and is an underlying principle in improving patient flow. This principle has been applied quite widely in health services in the UK through [clinically prioritise and treat](#), a former national programme to reduce variation in waiting times.

This programme demonstrated that there were endemic inequalities in the management of waiting lists - for example, patients who were prepared to complain about waiting times were more likely to be seen before other patients.

Evidence suggests that the first in first out principle has not been applied to all clinical areas in hospitals.

Acknowledgements / sources

Clinically Prioritise and Treat Programme, NHS Modernisation Agency and Hull and East Yorkshire Hospital Trust



6

6.5 Clinically prioritise and treat

Purpose

Clinically prioritise and treat is a simple approach that provides detailed information that trusts can use to understand how their waiting lists are managed. It includes techniques for promoting shared understanding by clinicians, managers and administrative staff. It can also help you to identify ways of improving the management of waiting lists by introducing more systematic processes for the selection of patients, helping to reduce overall waiting times.

This enables patients to be seen in accordance with clinical priority and facilitates the introduction of consistent booking systems. The higher the proportion of priority patients, the longer routine patients will have to wait for treatment.

Patients categorised as routine are not always seen in waiting time order as some may be displaced by queue jumping. However, if seen broadly in turn, the maximum waiting time for all patients will fall.

The toolkit will assist trusts in reducing waiting times by:

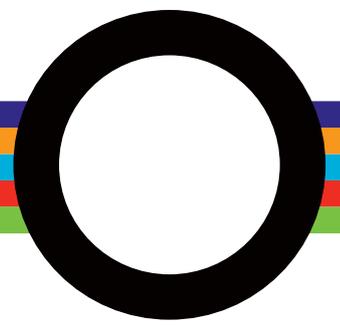
- Indicating waiting list variation at specialty and consultant level
- Demonstrating how staff are managing waiting lists
- Indicating if patients could potentially DNA or cancel
- Removing variation from waiting lists
- Reducing waiting lists
- Suggesting ways to improve waiting list management and introduce transparent, systematic processes that are fairer to patients
- Optimising the use of capacity

When to use it

You can use clinically prioritise and treat to measure whether patients are being seen in chronological order by looking at variation in waiting time between the original decision to admit and the date of admission for treatment.

The tool is most beneficial for:

- high volume procedures
- relatively predictable rate of clinical deterioration
- long maximum waiting times
- significant variation.



How to use it

Where routine patients are not seen in waiting time order, the variation is greater. You can then use the clinically prioritise and treat toolkit to promote discussion, pinpointing the cause of variation in waiting times at trust, site, specialty, sub specialty and procedure level.

Once you have identified these causes, clinically prioritise and treat suggests how to address them to reduce maximum waiting times. It can be used for:

- diagnosis
- to demonstrate potential improvement
- as evidence of actual improvement
- as evidence of sustained improvement.

There are three key steps to managing waiting lists.

Step one

All trusts should use waiting list validation as a first step to check if patients still require an outpatient or inpatient appointment.

Step two

Follow this with a primary targeting list type (PTL) approach. PTL makes sure that those with the most urgent needs are seen as a priority, while the remainder are seen within the maximum waiting time standard.

Step three

Clinically prioritise and treat is the next logical step. It enables local clinicians to apply clinically agreed definitions of priority and routine patients to the mechanism for managing waiting lists.

Use clinically prioritise and treat in conjunction with validation, primary targeting lists and Choose and Book, which complement each other to produce transparent systems.

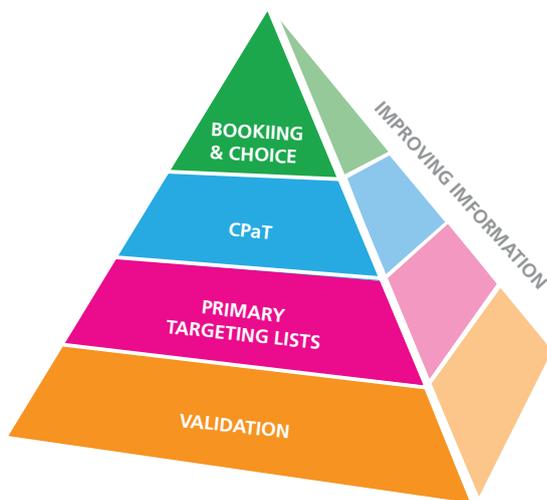
Examples

Case study detail	How does the case study link?
Hull and East Yorkshire: (i) Colonoscopy. The consultant surgeon took an active part in reviewing capacity and working with his surgical and medical colleagues to develop a timetable that provided sufficient capacity to bring down waiting times. (ii) Cardio thoracic. A significant reduction in variation from 14 months to 5 months resulting in a reduction in the maximum waiting time from 14 months to 8 months. (iii) ENT. A significant reduction in variation from 19 months to 8 months and a reduction in maximum waiting time from 19 months to 14 months. (iv) Trauma and orthopaedics. A significant reduction in variation from 20 months to 12 months.	The case study examples demonstrate a reduction in waiting times by treating patients in order and by clinical priority.

What next?

Using validation, PTL and clinically prioritise and treat will help you manage waiting lists more systematically, providing a foundation for trusts to adopt fully booked systems such as Choose and Book.

Choose and Book is an electronic method of giving patients a choice in when and where they have their first outpatient appointment and then booking it. It contributes positively to the patient experience and reduces [reducing did not attends \(DNAs\)](#).



Other useful tools and techniques that may help:

[Statistical process control \(SPC\)](#)

[Protocol based care \(see \[www.institute.nhs.uk/qualitytools\]\(http://www.institute.nhs.uk/qualitytools\)\)](http://www.institute.nhs.uk/qualitytools)

[Clinical engagement](#)

[Managing variation](#)

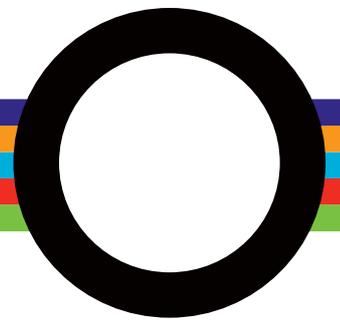
[Reducing did not attends \(DNAs\)](#)

Background

Clinically prioritise and treat was developed by the Modernisation Agency with clinicians in 2004.

Acknowledgements

Nicholas Oughtibridge



6

6.6 Glenday Sieve – runners, repeaters and strangers

Purpose

The Glenday Sieve is an approach to identifying common groups of procedures, conditions or activities in healthcare. These processes are grouped by volume of activity in the first instance, helping you to identify specific improvement and management strategies. Focusing improvement on a few, high volume activities will help you to prioritise efforts to improve patient [flow and reduce unnecessary waits](#).

The approach has its origins in the [Pareto](#) principle, but has a stronger operational focus. It was originally developed by Ian Glenday.

When to use it

The Glenday Sieve gives you a practical starting point for improving patient flow, helping to prioritise efforts to reduce referral to treatment times.

How to use it

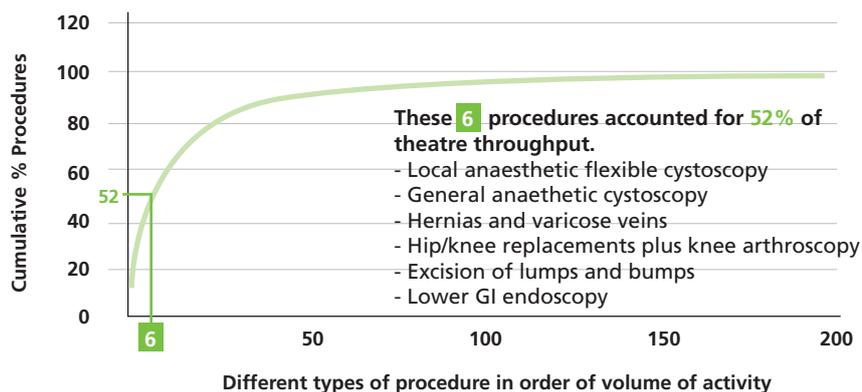
The Glenday Sieve separates procedures, conditions or activities, initially through the analysis of current volumes. You can apply this approach to hospitals, departments or wards, to enable you to identify those few procedures that make up the greatest volume of activity. The results shown in the table below are typical.

Cumulative % of volume	Cumulative % of procedures	Colour code
50%	6%	Green
95%	50%	Yellow
99%	70%	Blue
Last 1%	30%	Red

The results of this process can be quite surprising, as many people insist it is impossible for such a small percentage of procedures to account for 50 per cent of the volume in their organisations.

Green procedures tend to be a few high volume procedures that are predictable in terms of how long they take and overall levels of demand. They are not necessarily short and simple procedures. For example, Wirral Hospital looked at the number of procedures carried out through a surgical ward.

Identify High Volume Procedures
(which therefore have the potential for pooling)



As the example illustrates, some procedures are high volume, long and complex. However, they are generally predictable in terms of how long they take, the sequence of activities required for them to take place and the volume of week in and week out demand.

Experience from Wirral Hospital suggests that these procedures are a good place to start when implementing service improvement, improving patient flow and ensuring quality.

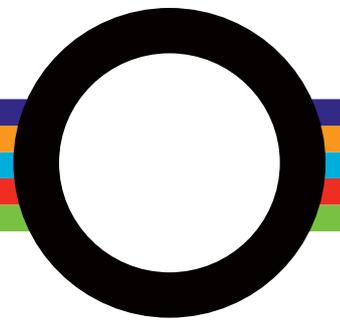
The next 45 per cent of volume of activities are described as the yellow procedures. These are fairly high volume procedures, which are more diverse in range than those in the green stream. When combined with the green procedures, they account for 95 per cent of the total volume of activity.

If you are looking at clinical codes, for example the Classification of Surgical and Operational Procedures (OPCS), as a source of information, the first step is to identify the yellow procedures that are equivalent to green procedures from a clinical perspective. For example, Wirral Hospital grouped together hips and knees - although these have separate OPCS codes (from an operational perspective, Wirral viewed them as similar enough). Your aim at this stage is to group those procedures that logically fit together.

Both the blue and red streams describe less commonly performed procedures. Again, it is helpful to identify those procedures that are similar to yellow and green streams from a clinical procedures perspective. For the other procedures there is an opportunity to challenge: at what level of frequency does a procedure need to be carried out from a clinical quality perspective?

What next?

Make sure that work patterns (shifts, operating theatre capacity and processes supporting these procedures) facilitate the meeting of demand and variation in demand from patients. You could start by taking one of the key procedures and examining it in detail.



For example:

- [Value stream mapping / process mapping](#) to identify flows.
- Identify different patterns of working between consultants. You may use [a tracer study](#) for this.
- [Process templates](#) will help you to identify all the steps required around a particular procedure and to identify bottlenecks. This can help you to ensure that patients are booked in at the right time with the necessary resources available along all the steps of a procedure.
- [Demand and capacity management](#) will help you to understand both the capacity to do the work and the demand.

Other tools and techniques that will help you

- [Flow – reduce unnecessary waits](#)
- Pool similar work together (see www.institute.nhs.uk/qualitytools)
- [Managing variation](#)

Additional resources

Books

Breaking Through to Flow: Banish Fire Fighting and Produce to Customer Demand, Lean Enterprise Academy

Websites

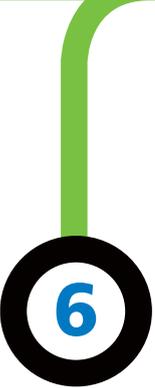
www.leanuk.org - for information and thought leadership on Lean thinking

Background

This approach was developed in the manufacturing industry as an alternative to traditional 'campaign' scheduling. It helped the industry to adopt Lean thinking and has been applied successfully in many different environments, including healthcare.

Acknowledgements

This technique was developed by Ian Glenday. More detail can be found in his workbook *Breaking Through to Flow: Banish Fire Fighting and Produce to Customer Demand*.



6

6.7 Reliable design

Purpose

Patients receiving the right care, in the right place, at the right time is one way of describing reliability in healthcare services.

Reliable design will help you to ensure that staff are getting things right first time. This can reduce delays for patients, save staff and equipment time, improve safety and quality of care and free up resources.

Another approach is to focus on the reliability of a clinical pathway to ensure referral to treatment times within an agreed timescale. This focus helps to promote the mindset of providing a 'guarantee' for patients. A reliable pathway means resources aren't spent tracking and pushing patients through the pathway so they don't breach. This has many parallels with reducing variation.

A useful technical definition of reliability is provided in the *Handbook of Reliability Engineering*. It defines reliability as '...the measurable capability of something to perform its intended function in the required time under specified conditions.'

When to use it

If you feel that there is ambiguity in the definition of reliable service, you need to take steps so that staff have a common understanding and definition. Only when you have reached a consensus on this issue are you in a position to determine if there is an acceptable level of reliability in the service.

How to use it

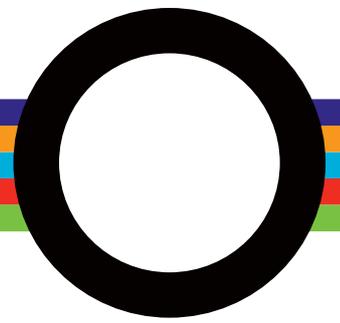
This guide describes a staged approach to developing more reliable services. There is a strong emphasis on providing reliable clinical care, but you can apply the principles to any aspect of service.

There are three stages to improving the reliability of a service:

1. Have a common agreement across a team (this could be single or core elements of the service or around patient outcomes).
2. Measure how often the common agreement happens.
3. Make improvements – your approach will depend on how often everything is right.

Step one

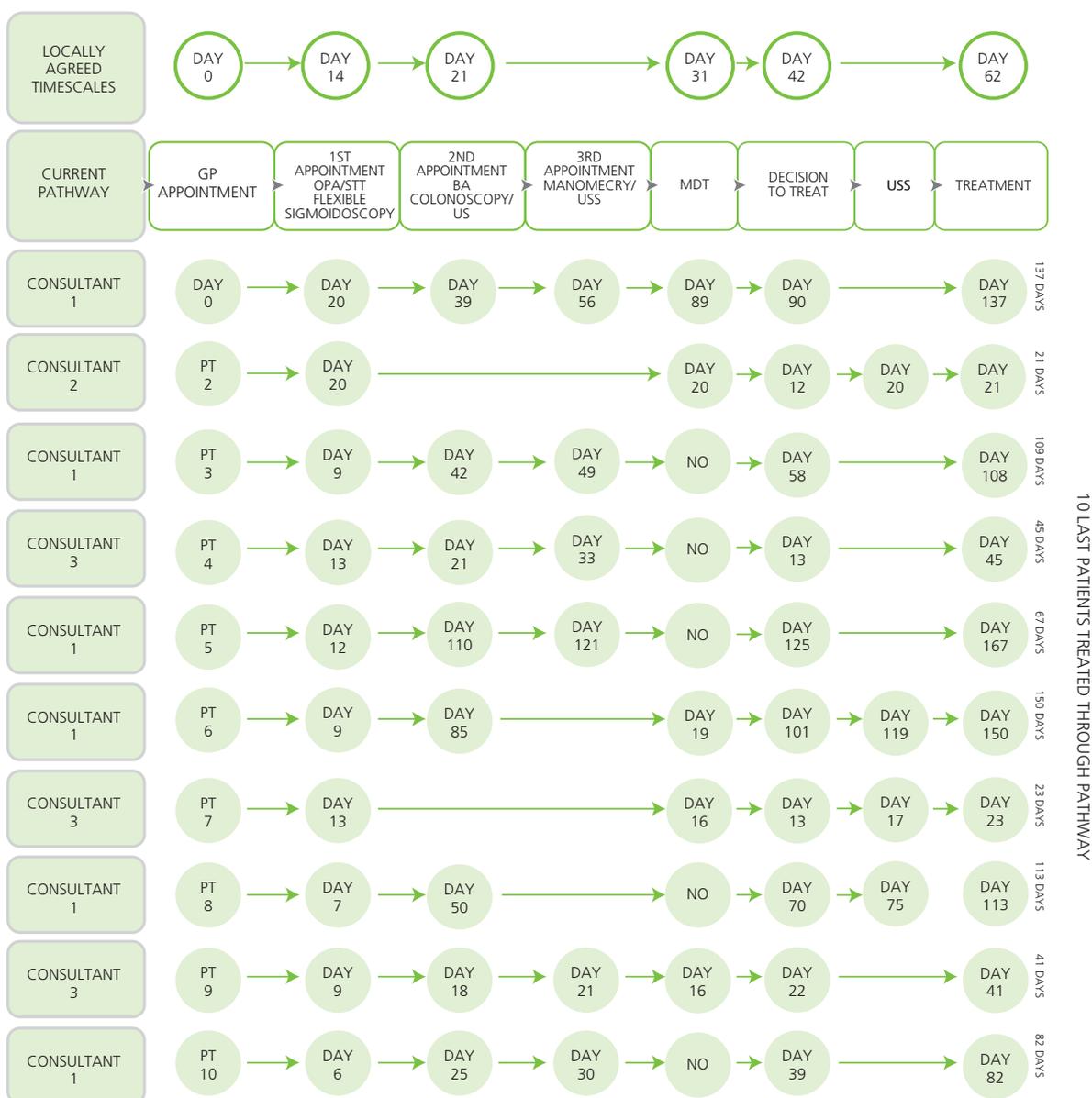
Work towards a common agreement on right care, right place, right time. Any discussion should include the core elements of care that the majority of patients receive and key aspects that ensure patients' safety.



So, for example, if a team has agreed an integrated care pathway, how often do patients follow the most important parts of the pathway?

If your team is starting from uncommon or unspoken agreements, it may take a while to develop. Try looking at the reliability of administrative and other support processes, as well as equipment management.

The example below describes common agreements along a clinical pathway, both in terms of anticipated stages and timescales. In the example, four out of ten patients met the agreed pathway.



When dealing with reliability in patient safety, the common agreement needs to be for all patients: no patients will be harmed, all will have right place surgery, there will be no avoidable deaths and so on.

As you are focusing on making something measurable, it is easy to be caught up in discussions about definitions. Remember, your purpose is to make services more reliable for patients and ensure quality of care that is evidence based (where the evidence exists) and appropriate to their clinical needs. As a result, care will be more timely and more cost effective.

Build on what feels doable and ensure that staff making the changes have regular feedback on progress.

The following improvement strategies will help:

- Protocol based care – protocols are about developing common agreements.
- Developing care bundles – to pick up on the core elements of care that are evidence based and the measurement side of things.
- Using process mapping to uncover differences in clinical practice.

Step two

The next stage is measuring how often the right care happens. An approach to reliability tends to focus on how often the wrong thing happens as a rate or percentage. The Institute for Healthcare Improvement in America, which has developed this approach, has also developed some specific notation as shorthand to indicate if something is highly reliable.

- Reliability = number of actions that lead to the intended results ÷ total number of actions.
- Unreliability = 1 minus reliability, then repeat.

For example, in critical care, the following elements of care can improve outcomes for patients on a ventilator:

- (a) Prophylaxis against peptic ulceration.
- (b) Prophylaxis against deep vein thrombosis.
- (c) Daily cessation of sedation.
- (d) Elevation of the patient's head and chest to at least 30 degrees at a horizontal level.

A reliability measure would be 93 per cent success, or three failures out of 100 opportunities.

Step three - make improvements depending on how often care is right

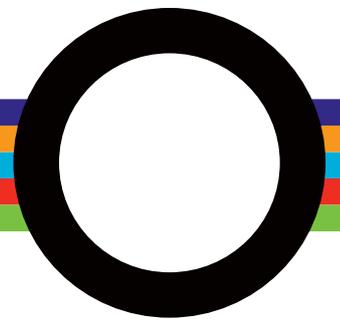
There are four levels of reliability:

Level 1: basic level of reliability (also known as 10-1)

- 80 to 90 per cent success - or one or two failures out of 10 based on the common definition of success / failure.

Level 2: standard level of reliability (also known as 10-2)

- Less than 95 per cent success - or five failures or fewer out of 100 opportunities.



Level 3: high level reliability (also known as 10-3)

- Five failures or fewer out of 1,000 opportunities.

Level 4: highly reliable (also known as 10-4)

- Five failures or fewer out of 10,000 opportunities.

Examples

In Torbay Hospital, staff gave patients their own care plans after colon surgery. This meant that patients knew what they needed to do and what to expect for their five day post surgery recovery.

Not only did this act as a reminder for patients about what they needed to do (for example mobilisation – how far they should aim to go) but one member of staff commented, ‘sometimes patients remind us – isn’t my catheter supposed to come out today?’ Patients therefore acted as an independent reminder to make sure they were following their care pathway.

Patients who are re-admitted to hospital within 28 days are an indicator of unreliability. A study in the United States identified by the Institute for Healthcare Improvement suggested that for 6,712 patients, the success rate in terms of patients receiving scientifically indicated or evidence based care was in the region of 55 per cent.

The Institute for Healthcare Improvement concluded that almost all studies that investigate the rate of failure to apply the appropriate clinical evidence in healthcare find that the success rate is less than 90 per cent. This suggests that focusing on ensuring a basic level of reliability in all areas of healthcare, and higher levels of reliability where there is a potential to harm patients, should significantly improve patient outcomes.

What next?

If you have identified which elements of care are ideal and which can be measured by their reliability, you now need to compare the reliability of what you have measured to the different levels.

If you have a reliability of less than 90 per cent (which is quite probable), there is unlikely to be common agreement within the team or across the care pathway about what constitutes ideal elements of care. Look at:

- Protocol based care (see www.institute.nhs.uk/qualitytools)
- Uncovering differences in clinical practice using [process mapping](#) techniques
- Discussing what elements of care the team believe all patients should receive and how to know when that happens
- What people say and what people do can be quite different, so make sure you really do listen. See [listening – importance of this skill](#) and [clinical engagement](#).

Move from level one to level two to achieve 90-95% success or less than five failures in 100 opportunities.

This is achieved through intent, vigilance and hard work as well as beginning to standardise some elements of practice as an agreed way of doing things. Interventions include:

- Common equipment
- Standard order sheets - the doctor only needs to tick a box to confirm standard pain relief prescription
- Personal checklists
- Feedback of information to staff on the rates of success – daily, weekly
- Awareness and training (about the agreed way of doing things around here and using the above interventions)

Move from level two to level three to achieve less than five failures in 1,000 opportunities.

This requires a more deliberate focus on systems and processes to improve reliability.

- Decision aids and reminders built into the system
- Desired action is the default
- Having an independent backup: for example, the patient knows what to expect and when so can act as a reminder to what should happen on day one after their operation
- Scheduling and planning
- Taking advantage of people's habits and patterns
- Standardisation of processes
- Care bundles for a few things that have very strong evidence. Measure if patients receive them as an all or nothing

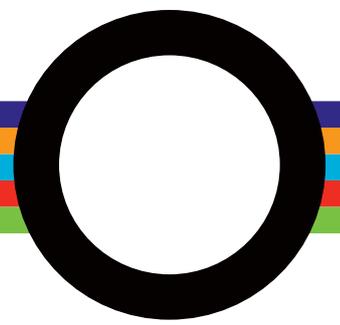
A care bundle has a different measurement system: it measures care from a patient's perspective. This focus changes the mindset of teams. For example, the critical care community has found that it increases the vigilance of teams so that everyone questions patients who are an exception, or automatically rectifies obvious omissions. The key is to have no more than around six things for a team to really focus on.

Move from level three to level four to achieve less than five failures in 10,000 opportunities.

You should only focus on this stage of reliability improvement if a system or process has achieved this level of reliability.

There is a three level design: prevent, identify and mitigate.

Prevent – is about designing the system to prevent failure. You should aim to have steps in a process that act independently of each other, so failures can be picked up.



Identify – is about designing procedures and relationships to make failures visible when they do occur so that they may be intercepted before causing harm.

Mitigate – is about designing procedures and building capabilities for fixing failures when they are identified or mitigating the harm caused by failures when they are not detected and intercepted.

Here is an illustration. Patients identified for fast track cancer referral have a well designed pathway, which as a rule means they have a referral to treatment time well within target.

Sometimes there is an error: for example, a form may be mislaid. However, there is a patient tracking system (PTL) that everyone uses to record patient information. This has been set up to take account of the normal variation for timings at each stage and only triggers an alarm – a flag next to the patient's name - if it is predicted a patient is likely to breach (the anticipated failure rate is around 1 in 100 patients). Everyone knows what this flag means and what to do about it.

Additional resources

Websites

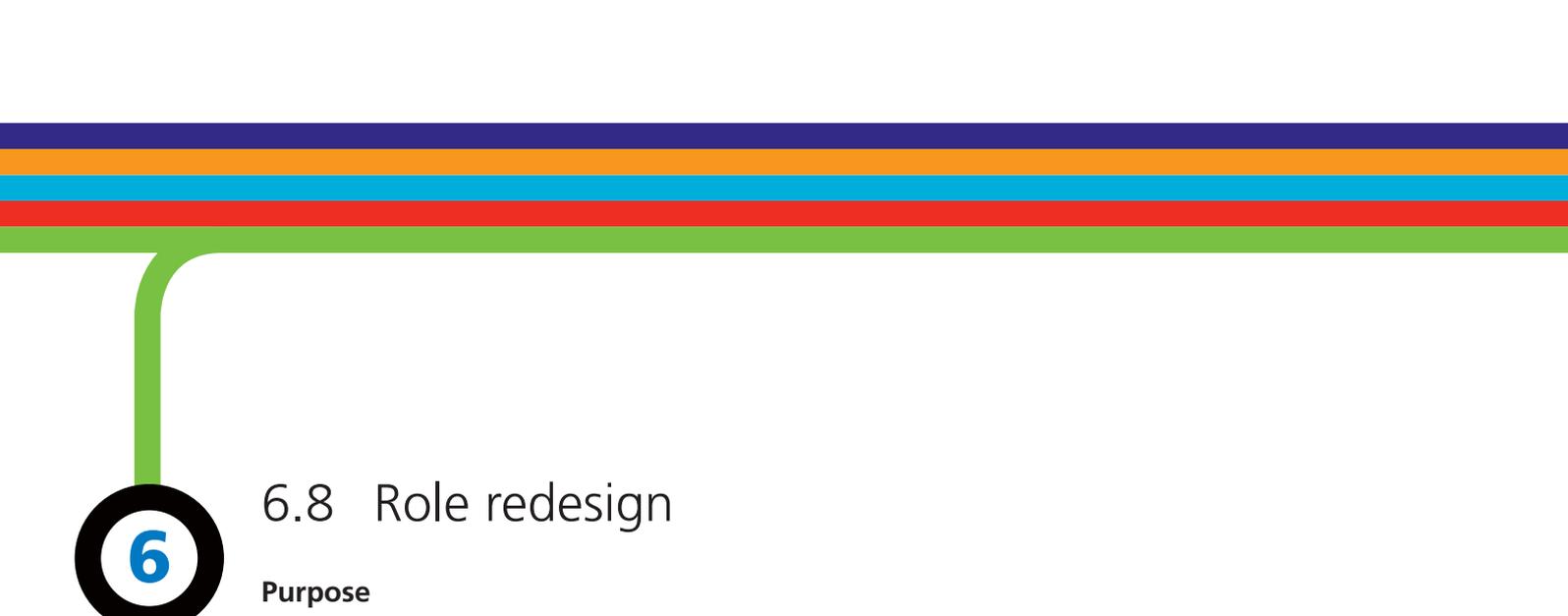
www.ihl.org - for information and a white paper on reliability

Background

The Institute for Healthcare Improvement developed this approach based on research and practice in mainly US hospitals. The approach is based on engineering science.

Acknowledgements

This approach is a summary of the Institute for Healthcare Improvement's work on reliability. A white paper outlines their work in detail.



6

6.8 Role redesign

Purpose

Role redesign is a workforce improvement tool that can help you improve patient services, tackle staff shortages and increase job satisfaction through the development of new and amended roles. It is the tenth high impact change and suggests that optimising roles along an agreed pathway of care leads to significant improvements for staff and patients in key areas, including reducing delays and waits for procedures.

By challenging and changing the set patterns of working, role redesign can benefit the entire healthcare team, from support workers to the medical workforce. There are many examples of role redesign improving the quality and flow of the patient journey and experience of the NHS.

When to use it

If you answer no to any of the following questions, role redesign may be able to help you make improvements to your service or department. Do you feel that:

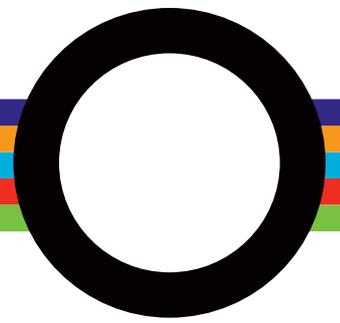
- Your team fully use all their training and skills?
- Your team give enough time to patient care?
- There are enough staff to provide safe, timely and effective care?
- Roles are designed around patient needs?
- You and your colleagues use all the technology available?

How to use it

When you implement role redesign, it may not be necessary to create entirely new roles. Instead, you could extend an existing role so it has the capability to undertake an identified task.

Sometimes the task moves between different levels of skill and sometimes the individual moves to take on new duties. A task in this context is an element of the workload that an individual undertakes, however complex.

You can apply role redesign to a variety of service problems, for example, where there is variation in capacity caused by skills shortages, or problems with implementing the working time directive (WTD). Examples from emergency services, primary care, intermediate care, mental health and acute services demonstrate that role redesign helps place staff with the right skills, in the right place, at the right time.



There are three categories of role redesign, which make a significant difference for patients and staff:

- Administrative and clerical roles – extending these roles releases caregivers from administrative duties and improves communication between providers and patients.
- Assistant practitioners - healthcare workers with a level of knowledge and skill beyond that of the traditional healthcare assistant or support worker. They deliver care and undertake tasks that were previously within the remit of registered professional staff.
- Advanced practitioners - experienced clinical professionals who have developed their theoretical knowledge and skill to a very high standard. They can make some decisions and often have their own caseload. They carry out tasks that would previously have been performed by another professional. For example, nurses and allied health professionals undertaking tasks previously assigned to doctors.

Significant role redesign is a long term activity. It takes time to fully implement roles that require training or re-training, so don't assume immediate like for like capacity from someone taking on a new role.

You will also need the support of your human resources team, so make sure you engage them early in the process.

Step one

Identify and define the service problem or constraint that can be solved by new or amended roles.

Step two

Assess the workforce: identify who does what in the current process.

Step three

Agree opportunities for new or redesigned roles with additional skills or training.

Step four

Define protocols and guidelines that will allow a wider range of professionals with the appropriate skills to provide care for patients.

Step five

Agree a training and development plan.

Step six

Write a business case for sustainability.

Step seven

Agree an action plan for testing and/or implementation.

Step eight

Undertake recruitment process into new role.

The NHS Institute's *Improvement Leaders' Guide: Redesigning Roles* is a generic guide to role redesign, which can help. It includes:

- introduction to role redesign
- think about your own team
- how are redesigned roles different?
- getting started
- important considerations when redesigning roles
- role profile and person specification
- preparing a business case
- case studies
- activities
- frequently asked questions.

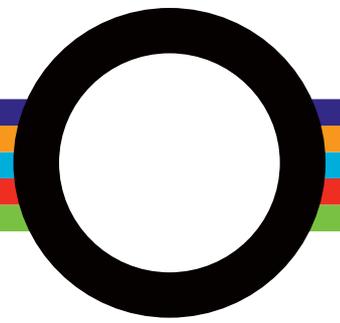
Below are the most common tools used within role redesign, available from the Large Scale Workforce Change Team at NHS Employers.

Problem analysis - advanced thoughts work card

This activity gives staff an opportunity to reflect on the service they are working in. It consists of a card that can be easily carried around in a bag or pocket. Each member of the staff group working on solving a problem keeps the work card with them in the workplace for two weeks. During this time, they consider and note the following:

- What works well within the service?
- Why does it work well?
- What troubles them at night?
- What are the things they would like to put right?
- What do they think is the problem?
- What has been tried in the past? Did it work? If not, why not?
- What ideas do they have for improvement?

This provides excellent material for discussion and deciding where to take action for improving flow through the patient journey.



Problem analysis

The root of the problem is not always obvious, especially where current working practices are based on local custom, tradition or habit. This tool helps you to analyse service issues to identify the root of the issue and look for possible workforce solutions. It takes you through a process to identify how changes to an existing role or the development of a new role may solve the problem.

Time plotting patient journeys activity record

This tool provides a picture of time spent by staff undertaking patient related activities. It facilitates the removal of inappropriate tasks and the appropriate reallocation of tasks from one worker to another. It consists of time plotting activity cards and composite profile sheets.

- It can be used by individuals or by groups.
- It helps identify opportunities for task reallocation, removal of unnecessary steps, promoting team working, skills escalator and development of new roles.

In pursuit of our workforce

This tool is an activity designed for healthcare staff to stimulate thoughts and discussion within a group, as well as pointing out some of the key issues that may be overlooked when creating new or amended roles. It should be used during the final stages of role redesign.

The responses in this activity further inform the development and implementation of a new or amended role. It helps tackle management aspects of the new or amended ways of working and is useful when working with a large group.

This tool guides you in writing a clear competence based job description and associated person specification. It should be used once a role has been developed and the tasks of the post holder clearly identified. It consists of a template for a role profile, which helps to develop an explicit description of what the post holder would do by considering the purpose, responsibilities, physical and social environment of the role, training and education required and development opportunities. The role profile clarifies desired level of knowledge, skills, qualifications, previous experience and personal attributes.

Education and training plan

This tool should be used by groups of staff or individuals to identify the necessary skills for the role, plus the associated education and training necessary to achieve competence in each skill. It encourages you to:

- Consider how easily the plan can be transferred to other roles or organisations.
- Seek external education, assessment and validation to increase the transferability of the plan.
- Work with neighbouring organisations to develop common education and training plans.

Managing practical issues

This tool can be used early in the role redesign process to refine roles that have been developed. You can approach it as a role play activity or use it to guide your thinking.

It consists of a job interview scenario where the candidate asks the panel a series of practical questions relating to the new role or new way of working that they are being interviewed for.

The tool contains a question card for the candidate to use and a worksheet for the interview panel to complete listing the issues they need to take action on before the role can be implemented.

Developing a business case

This tool outlines how to write a persuasive, robust business case for role redesign to outline the changes you are proposing. It tells you what you need to do, how to prepare a business case and how to get it approved. Although it is a generic tool, the guidance is a useful checklist that you can amend to fit your internal processes.

Adventure enterprises

This tool takes participants away from the healthcare environment, puts them in a different context and helps them to consider role redesign without professional constraints.

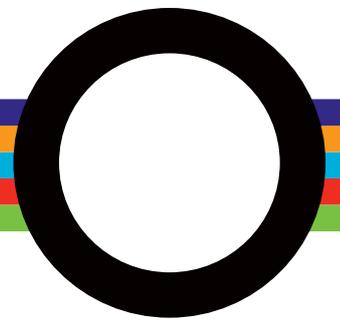
It is a small business scenario designed so that all participants are able to contribute to the discussion. The tool can be worked through as a tabletop exercise in which the group consider themselves to be the managing director and have to develop a new way of working. Alternatively, it can be conducted as a role play in which the managing director has called a staff meeting to discuss the findings of the evaluations and work together to determine a way forward.

The tool encourages participants to discuss issues relating to implementing a new role outside healthcare, thinking creatively to answer trigger questions. The responses can then be used to inspire and encourage new ways of working to address service issues.

Videos

Videos are available from the Changing Workforce Programme resource. These provide an excellent method of learning, including the benefits of role redesign and the views of medical secretaries and administrative staff who have first hand experience of role redesign.

Case study videos cover physical health, mental health and children's services. They emphasise the need for role redesign in aspects of the NHS and encourage lateral thinking about patient and staff perspectives.



Additional resources

Workforce Matters publications introduce role redesign, explain how to assess service needs, how to write a new role definition and develop a business case. They outline service and workforce redesign initiatives that were happening nationally as the report was written, give examples of innovative practice, sources of support and provide references and further reading.

The documents give an overview of good practice and workforce redesign initiatives, highlighting the benefits of new ways of working. Examples are given of new and amended roles, focusing on a range of roles in different care pathways, including guides to role redesign in:

- Cancer services (January 2005)
- Neonatal services (December 2004)
- Staff caring for older people (September 2003)
- Emergency care (August 2003)
- Staff in the wider healthcare team (2002)
- Diabetes care (2002)
- Primary care (2002)

Background

Role redesign tools for the NHS were developed by the Changing Workforce Programme at the NHS Modernisation Agency. A wide range of these tools are now available from the Large Scale Workforce Change Team at NHS Employers.



6

6.9 Lean – Ohno's eight wastes

Purpose

Waste is anything that doesn't add value to a product or service. In a healthcare context, value is defined as the provision of patient service and satisfaction. Any activity that does not contribute to this is classified as waste.

The eight wastes can help to achieve improvement in healthcare by enabling staff to examine their own workplace and eliminate wasteful activity. This improves the patient experience, as well as giving frontline staff more time to reinvest in services.

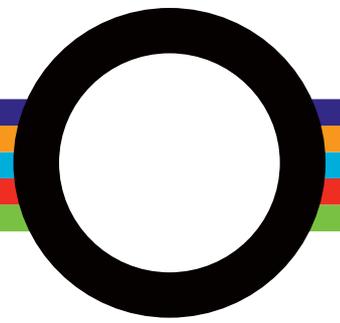
When to use it

As waste is a symptom rather than the root cause of problem, it indicates problems within the system or organisation. You can use the eight wastes if you are embarking on a project to ensure that activity and resources are being used to optimal efficiency.

How to use it

The eight wastes are defined and can be translated into a healthcare context as follows:

1. **Overproduction** – undertaking activity 'just in case' and / or in a batch. This also contributes to constraining steps in the patient pathway by feeding in inappropriate work or the wrong batch size. Examples include requesting tests and referrals to outpatient clinics 'just in case'.
2. **Inventory** – this refers to materials but can be translated as the patient. Holding inventory works against quality and effectiveness, making it hard to identify problems. Examples include using inpatient beds for patients who are waiting for tests but could be discharged safely, or ordering excess material because the supply is unreliable.
3. **Waiting** – refers to a patient or material waiting, instead of moving at the pace of customer demand. Waiting can be a result of variation in the process. Examples are waiting in queues at the surgery, waiting for tests or making sure all the equipment is ready for an operating list.
4. **Transportation** – any movement of a patient or material is wasteful. Although you can't fully eliminate transport, you should aim to reduce it over time. When process steps are located next to one another, it's easier for you to visualise, identify and resolve quality issues. Examples include moving a patient to an inpatient bed for review at postoperative ward round and then to another ward for discharge, moving the patient for tests or to see the physiotherapist.
5. **Defects** – a defect that is passed along the process can escalate the impact of the initial defect. Aim for zero defects.



6. **Staff movement** – unnecessary movement in the workplace relates to layout and organisation. How far do you move to get to a computer to input discharge information? Is there a better way, which will minimise your wasted time?
7. **Unnecessary processing** – using complex equipment to undertake simple tasks. Often the equipment is large and inflexible i.e. a robot in the pharmacy. While it can take hours for a patient to receive their prescription, the task of dispensing takes a matter of seconds.
8. **Injuries** – damage to people. For example, stress in staff or a patient's condition deteriorating through delay and untoward incidents. With better process design we can reduce the incidence of potential for harm and create a less stressful working environment for staff.

What next?

Once you have succeeded in eliminating the waste, your next step should be waste prevention. Ensure you design new services without inherently wasteful steps.

Eliminating waste is not the only way to become a Lean organisation, but it is a valuable learning experience, which brings all the team together to understand problems that they are then encouraged to solve.

Additional resources

Books

The New Lean Tool Box, J. Bicheno, 2004 (PICSIE Books, Buckingham)

Lean Evolutions, N. Rich, N. Bateman, A. Esain, L. Massey and D. Samuel, 2006 (Cambridge University Press, Cambridge)

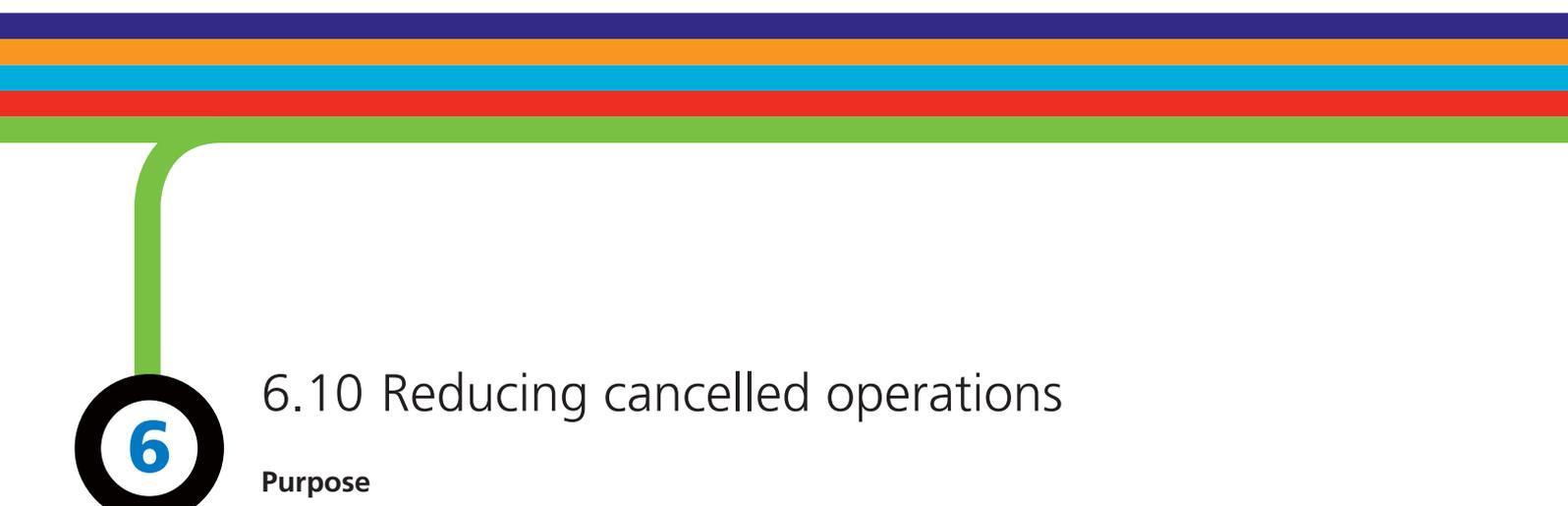
Lean Thinking, J. Womack and D. Jones, 1996 (Simon and Schuster, New York)

Lean Solutions, J. Womack and D. Jones, 2005 (Simon and Schuster, New York)

Background

Taiichi Ohno, who is credited with being the architect of the Toyota production system, originally classified the eight wastes. He was said to expect new managers to go to the workplace, draw a chalk circle and spend several hours identifying waste. Deming also emphasised waste reduction in the 1950s whilst in Japan.

Waste is translated as 'muda' in Japanese. Womack and Jones talk of 'muda glasses', which asserts that this process is about seeing your own organisation differently.



6

6.10 Reducing cancelled operations

Purpose

Cancelled operations are a waste of time and resources and are distressing and inconvenient for patients. Using this tool will help you identify the different types of cancellation and understand the reasons for them. This will then enable you to tackle cancellations appropriately and improve the throughput of patients along the pathway.

Eliminating cancellations reduces rework and increases the flow of patients through the referral to treatment pathway.

When to use it

If you notice that you have a high number of cancelled operations, you should use this tool to help you pinpoint problems in the patient pathway well before the point of operation.

[Lean](#) thinking describes eight types of waste. A cancelled operation counts as two of types of waste in terms of rework and idle time.

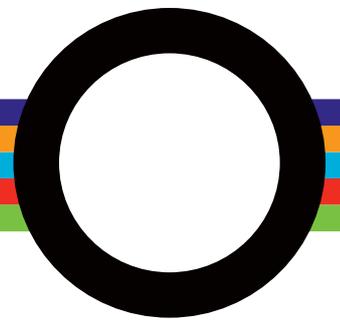
Department of Health guidelines say that patients who have their operation cancelled (for a non clinical reason) on the day of surgery should be readmitted within 28 days.

How to use it

Tackling Cancelled Operations and the *Theatre Programme Step Guide* were produced by the NHS Modernisation Agency's National Theatre Programme. These documents draw on the findings of pilot sites to identify good practice within NHS trusts and list existing guidance available from organisations. They also provide information on how to diagnose and interpret cancelled operation information followed by actions to help reduce cancellations.

The *Theatre Programme Step Guide* identifies three types of cancellations:

1. Hospital non clinical: ward beds unavailable, consultant unavailable, emergencies / trauma, list overrun, equipment failure / unavailable, theatre staff unavailable, ICU / HDU beds unavailable and administrative error.
2. Hospital clinical: operation unnecessary, preoperative guidance not followed, patient arrived with illness and pre-existing medical condition.
3. Patient: DNA, operation not required, unfit for surgery and appointment inconvenient.



Tackling Cancelled Operations identifies causes of cancellation, actions and possible ways forward, including:

- tackling operating list overruns
- looking into consultant and theatre staff availability
- scheduling emergencies and trauma
- dealing with equipment failure and availability
- understanding and reducing patient cancellations.

The Modernisation Agency's step guide identifies a four stage approach that you should use to understand and tackle cancellations.

1. Planning and management

Set up management structures: agree information requirements, management policies and procedures.

2. Diagnosis and analysis

Monitor performance using key performance indicators (KPIs) and diagnose and analyse problems using diagnostic tools i.e. [process mapping](#) and [statistical process control \(SPC\)](#).

3. Improving operating theatre performance

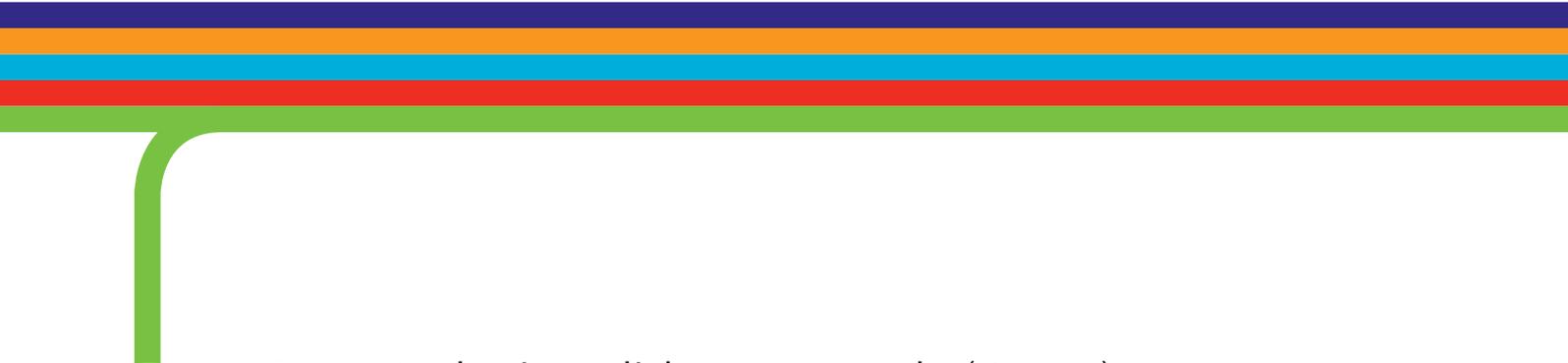
Redesign services to improve the patient experience, optimising human resources and improving elective and emergency surgery.

4. Scheduling

Schedule operations to make optimum use of resources and reduce the risk of cancelled operations.

What next?

Preoperative assessment and planning (see www.institute.nhs.uk/qualitytools) will help you reduce cancellations as many are due to preoperative systems that need improving. [Root cause analysis using five whys](#) will help you find the root cause of cancellations.




6.11 Reducing did not attends (DNAs)

Purpose

This tool examines the causes for patient non attendance and gives guidance on what you can do to reduce the level of did not attends (DNAs) at your hospital.

DNAs have an enormous impact on the healthcare system in terms of cost and waiting time, significantly adding to delays along the patient pathway. You may already have some strategies in place, such as overbooking slots, but if you have a higher than acceptable rate of DNAs, you may wish look at ways of reducing them.

When to use it

You can use this tool if you have a higher than average rate of DNAs and when you want to:

- reduce costs
- allow for efficient running of clinics
- reduce variation
- enable more effective booking
- reduce mismatch between demand and capacity
- increase productivity.

How to use it

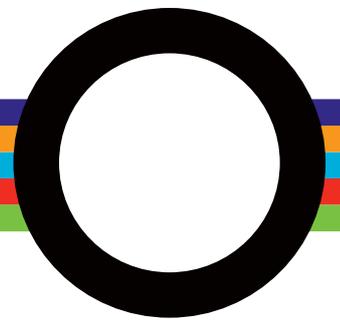
Step one

First, you need to determine whether you have a higher than acceptable rate of DNAs. You can assess this by looking at the level of DNAs over the past two years as a percentage of total appointments. Consider what is too high, what level you want to reduce it to and what level is acceptable.

To place the figures in context, look at the trust average, strategic health authority averages and the NHS Institute's delivering quality and value publications.

Step two

You now need to determine the causes of DNAs. The two most commonly cited reasons are patients forgetting and clerical errors or communication failures, which mean that the patient was unaware of the appointment.



Other causal factors include:

Socio-demographic factors:

- age and gender
- distance from hospital, GP/ PCT
- deprivation.

Patient factors:

- no longer need to attend
- too unwell to attend
- employment
- previous experience
- seriousness of illness
- nature of illness
- childcare
- cost of travel prohibitive, difficult to organise or public transport difficult to access.

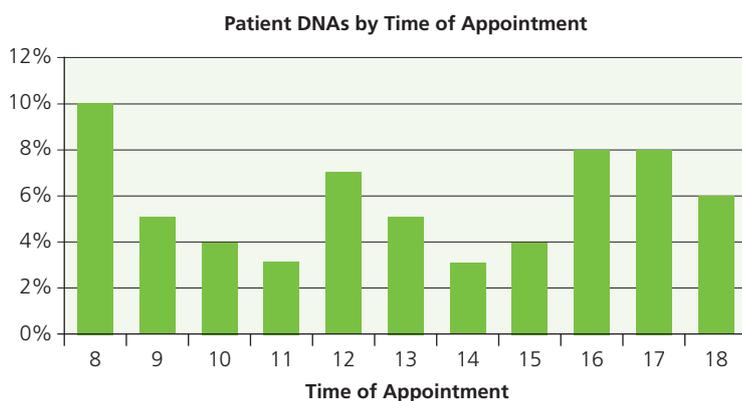
Hospital factors:

- difficulty in cancelling appointments
- incorrect recording
- poor appointment card design
- lack of notification or short notification
- organisation of clinics
- booking (partial booking)
- time or day of appointment may be inconvenient
- appointment types - new or follow up
- urgency of appointment
- transport / parking.

Other factors:

- GP / patient communication.

Some of these causal factors, for example booking figures and appointment times, may be stored on your hospital computer systems. This enables you to identify whether patients DNA at certain times of the day. The following chart indicates that patients at this hospital tend to DNA in the early morning, at lunch and after 4pm.



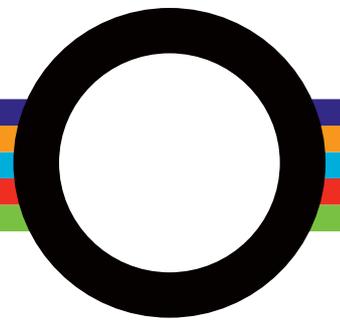
With this information, you can look deeper and find out if these people are of a certain age, for example parents who may be taking children to school. The main aim is to understand the patient profile so that you can make attending the appointment as easy as possible.

Other causal factors, such as difficulty in understanding appointment cards or transport and parking problems, may be harder to diagnose. You could consider some analysis - a telephone or postal questionnaire which may uncover factors that you hadn't previously thought of.

Step three

Once you have identified the key causes of DNAs, you can try some of the following strategies. Remember that you are tackling the causes and not just the symptoms.

- Make sure the appointment is necessary - reducing the number of inappropriate follow ups not only frees up time, it also reduces the number of patients who don't attend because they feel the appointment is unnecessary.
- Reduce patient anxiety - reassure the patient by ensuring that they know what is going to happen and when. Clear information is the key e.g. through preoperative assessment.
- Communication - appointment cards / letters should be easy to read and understand (see [patient information](#)).
- Aim for consistency of style by consulting receptionists, booking clerks, nurses and doctors. Tear off confirmation slips and freepost envelopes make it easier for patients to respond.
- Consider redesigning your appointment letters and cards - canvas a cross section of patients on a range of designs.



Consider how easy it is for patients to contact the hospital or department to cancel an appointment. You might consider dedicated telephone lines, 24 hour answering machines and/or freephone numbers. Bear in mind that your staff may need training so they are able to record cancellations and reschedule appointments on a computer.

Send reminders to patients 2-3 weeks prior to their appointment, especially in specialties with high rates of non attendance or for patients who receive appointments a long time in advance. These could be in letter form or via text message (more useful for some groups of patients than others).

Generally, the higher the rate of DNA, the greater the impact of reminders, so always check communication procedures and ensure that appointments are made at a convenient time for both the patient and the hospital.

- Your receptionists play a key role in communicating but this doesn't always come naturally and they may need training or guidance.
- Make sure your receptionists reconfirm an appointment verbally and make eye contact with the patient.
- It can be useful to ask the patient to repeat the information back to ensure that they have understood.

Contact GPs as a matter of course if a new patient does not attend. GPs or consultants should then follow up to find out the reason why. Only request re-referrals if necessary.

Remember, all improvement is change, but not all change is improvement - so make sure you test your changes on a small scale before you roll them out. See [plan, do, study, act \(PDSA\)](#).

What next?

To see the impact of any changes, make sure you know the DNA rate for your service then compare the results. One of the easiest ways to monitor change is through the use of [statistical process control \(SPC\)](#) charts.

It is also important to understand who has the responsibility for why a patient didn't turn up. The following example demonstrates who is responsible for the decision:

Individual	Mani	Jo	Lou	Matt
Decision	Information	Reception	Nurse	Doctor
Do we find out why patient didn't turn up?				
Do we make another appointment?		Informed	Consulted	Responsible
Do we monitor?	Responsible			
Do we make any changes to our systems?	Informed	Consulted	Responsible	



For more information see [responsibility charting](#).

The findings of the investigation must be shared with patients, management and clinicians. In this way other departments can learn and benefit from the conclusions.

At all stages of your changes keep the following informed:

- patients
- user groups
- other operational managers
- clinicians
- administration staff
- person responsible for managing DNAs.

Other useful tools and techniques that may help you

[Patient information](#)

[Statistical process control \(SPC\)](#)

[Demand and capacity management](#)

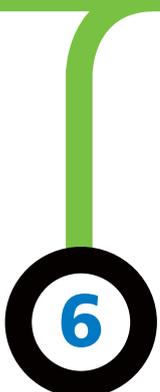
[Responsibility charting](#)

[Plan, do, study, act \(PDSA\)](#)

[Reducing cancelled operations](#)

Acknowledgements

Jenny Moss - Derby Hospitals NHS Foundation Trust



6

6.12 Reducing length of stay

Purpose

Hospitals usually experience far more variation in patterns of patient discharge than in patterns of admission. The main reason for this is the way we manage processes such as ward rounds, inpatient tests and pharmacy, which results in highly variable and unpredictable length of stay (LoS), even among patients admitted with similar conditions.

Reducing length of stay releases capacity in the system, including beds and staff time. A greater focus on [treating day surgery as the norm](#) (rather than inpatient surgery) could also release nearly half a million inpatient bed days each year.

This tool will help you to proactively plan the whole process of care, as well as active discharge planning. It can help you to achieve a clear pathway of care through the system for specific conditions.

When to use it

You should use this tool when you suspect that you have length of stay issues. Generally, discharges peak on Fridays, with a trough over the weekend. The situation is made worse by the fact that patients are admitted seven days a week (emergencies), but typically discharged five days a week. However, we can control the discharge process (and therefore variations in LoS).

Many trusts have also found it helpful to focus on the time of day when discharges occur. Moving discharges to the morning before peak arrival times helps keep the flow through an organisation.

How to use it

Step one – diagnosis

- Map the process, identify bottlenecks and the main causes of delay (see [process mapping](#)).
- Map the information flows and responsibility for direct patient care at all points in the patient journey.
- Measure and analyse current patterns of discharge by day of week, hour of day, specialty etc.
- Analyse all inpatient stays by LoS to identify where improvements in the discharge process will have the greatest impact. The 80:20 rule will help here, (80 per cent of patients have a much shorter LoS than the remaining 20 per cent so you should address the 80 per cent of shorter waits. See [Pareto](#)).
- Consider how long patients are spending in a bed before they have an operation.

Step two- problem solving

- Use predictive discharge methods to reduce variation and help eliminate delays.
- Attempt to smooth demand from surgeons across the week (even the demand for HDU beds).
- Set a planned date for discharge on the day of admission or at pre-admission, if possible, using protocols / pathways for common conditions.
- Involve patients and their families or carers in discharge planning so that they are prepared and can make their own arrangements.
- Use visual triggers, e.g. visible expected date of discharge.
- Involve social services early if required.

Step three - orchestrating discharge

- Establish regular discharge, making ward rounds at least once a day.
- Consider nurse led discharge (see protocol based care at www.institute.nhs.uk/qualitytools).
- Identify the lead in times required, e.g. test and test result availability, medicines, transport etc. Ensure that they don't hold up discharge.
- Plan around the lead in times.
- Match the time of discharge with the time beds are required on an hourly basis.

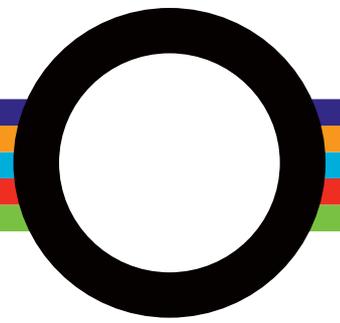
Examples

1. The enhanced recovery programme at South Devon Healthcare NHS Trust is a structured, evidence based approach to prepare patients for surgery and reduce its physical impact. This means that patients recover more quickly, enabling early discharge.

2. Northumbria Healthcare NHS Foundation Trust changed to a system where day case cholecystectomy was the norm, unless there were good clinical or social reasons to admit a patient. The trust's day case rate rose from 20 per cent to 50 per cent, with consistently high patient satisfaction.

The average length of stay for laparoscopic cholecystectomy is 2.6 days (ranging from 1.2 to 6 days). If the average length of stay was reduced by one day, there would be an annual saving for the NHS of approximately 35,400 bed days (£8 million, based on a bed day cost of £225).

3. The majority of patient care at the North West London Hospital NHS Trust is proactively managed by agreed multi-disciplinary protocols of care. This includes mapping out the processes, streamlining them, extending staff roles and agreeing and auditing length of stay. Over the last ten years, the predicted duration of stay for total knee replacement has been reduced from 13 days to 5.



What next?

The key to reducing length of stay is [managing variation](#). A number of other tools in this handbook can help you achieve this.

Concentrate on the high volume pathways. Identify these by using the [Pareto](#) principle.

Ensure a date for discharge is made at, or before, the point of admission and encourage your organisation to proactively manage care using agreed protocols or pathways. This will enable staff to address the key questions of what should be done, when, where and by whom at a local level and help reduce length of stay.

Length of stay can also be influenced by not admitting some patients at all, for example, using day surgery more appropriately. Reducing LoS is about change and so it is crucial to get [clinical engagement](#).

If this high impact change was implemented across the NHS to existing best practice rates, you could expect that:

- Ten per cent of total bed days would be released for other activity
- Average length of stay would be the same regardless of admission
- Patients would be given a predicted day of discharge at admission or pre-admission
- A similar percentage of patients would be discharged every day

Additional resources

Websites

www.productivity.nhs.uk - for the NHS Better Care, Better Value Indicators, which can help you understand more about your organisation's position regarding length of stay. Use the length of stay and preoperative bed days reports.

www.bads.co.uk - for the British Association of Day Surgery's directory of procedures.

www.reducinglengthofstay.org.uk - for facts and figures on length of stay and suggestions for improvement.

www.institute.nhs.uk - see the Quality and Value section for high impact changes and focus on high volume care.

6

6.13 Discharge planning

Purpose

Planning for discharge with clear dates and times reduces a patient’s length of stay, emergency readmissions and pressure on hospital beds. This is true for all patients, both day surgery patients and those who have more complex needs.

If inpatient beds are a bottleneck, reducing pressure on beds will help you increase throughput and therefore reduce referral to treatment times.

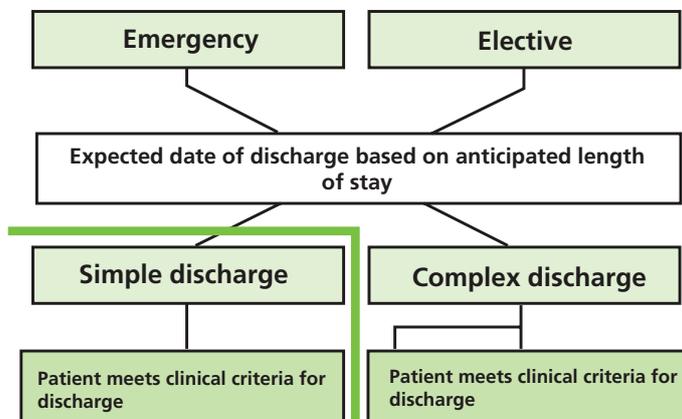
When to use it

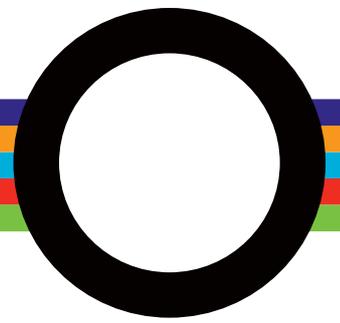
With elective care, you should start discharge planning prior to admission. This allows everyone to focus on a clear endpoint in the patient’s care. It also reduces errors and unnecessary delays along the patient pathway.

How to use it

There are some common key elements when planning for discharge, regardless of whether a patient is receiving emergency or elective (inpatient or day case) care. These are:

- Specifying a date and / or time of discharge as early as possible.
- Identifying whether a patient has simple (80 per cent of all patients) or complex discharge planning needs.
- Identifying what these needs are and how they will be met.
- Deciding the identifiable clinical criteria that a patient must meet for discharge.





This guide focuses on the key elements of planning for elective discharge for simple discharges. (The approach is similar for day case and simple inpatient discharge.)

Simple discharge (inpatient / day case)

1. *Plan the date and time of discharge early*

Plan discharge at preoperative assessment so that everyone, including patients and carers, knows what needs to happen and when the patient will be discharged. It also means patients/carers know what arrangements they need to make to help the patient get back home.

'To achieve a high quality service, discharge planning in day surgery should begin before the adult or child is admitted to the unit.' Royal College of Nursing (*Discharge Planning for Day Surgery*)

2. *Plan for patients to be discharged before the peak in admissions*

As with hotels, many hospitals find planning for a proportion of patients to leave the ward before 11.00am helps to manage the total loading on beds.

3. *Plan for discharge seven days per week*

Admission patterns often loosely follow the day of the week. This is also true of discharges, with a rush on Friday to clear beds for the weekends. However, few discharges actually take place over the weekend. This can cause problems, especially on Monday when there may be many admissions for inpatient elective care. A focus on planning for discharge seven days a week helps to reduce bed pressures.

4. *Patients are discharged using a criteria based process*

There is a range of discharge planning tools and guidance available.

- British Association of Day Surgery, *Ready to go Home*, 2002
- Royal College of Nursing *Discharge Planning for Day Surgery* is a framework that covers the physical, psychological and social aspects of patient care. You can use it to develop guidelines for patient discharge following day surgery.

5. *Co-ordinate and check everything is in place 48 hours before discharge*

This includes checking take home medications and transport (including transport provided by family / friends). For longer stays of over 48 hours, the discharge planning checklist should be completed 48 hours prior to discharge.

6. *Timely and accurate communication for discharge*

About 20 per cent of patients have more complex needs and may require additional input from other professionals such as social workers, therapists etc. The involvement of additional people makes co-ordination and planning even more critical.

Planning at the preoperative stage or early on following admission will really help to reduce delays. Further information about discharge planning is available from the Health and Social Care Agent Team.

Discharge following an emergency admission

The same procedures apply for all discharges regardless of type of admission, so planning for discharge should begin as early as possible following an emergency admission.

Examples

Examples of criteria for discharge used in well performing services for hip and knee replacement surgery include:

- independence in washing, dressing and mobility
- safe negotiation of stairs if necessary
- a clean wound
- eating and drinking
- postoperative x-ray performed

Making plans to go home

'A day and time for your discharge home will be agreed in advance with you. This will allow you to plan ahead for your own discharge. The ward staff may indicate that you should be collected and accompanied by a friend or relative when you go home. It is important that you plan this with your friends or relatives as soon as you know your discharge date.

When you leave we will give you a limited supply of any medicines you may need and a discharge letter for you to take to your GP when you get home.

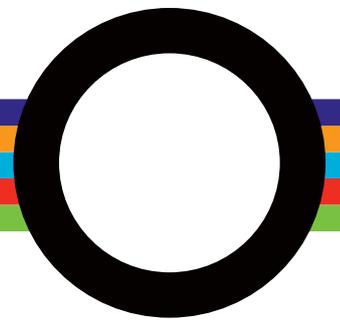
Please leave your home address and contact number with a member of staff on the ward. If you are planning to stay somewhere else, please leave an address where you can be contacted.' Nuffield Orthopaedic Centre NHS Trust, [patient information](#).

What next?

If bed constraints are a hospital wide problem, carry out a simple hourly flow diagnostic to look at patterns of admission and discharge.

Additional resources

www.changeagentteam.org.uk - the website of the Health and Social Care Change Agent Team.



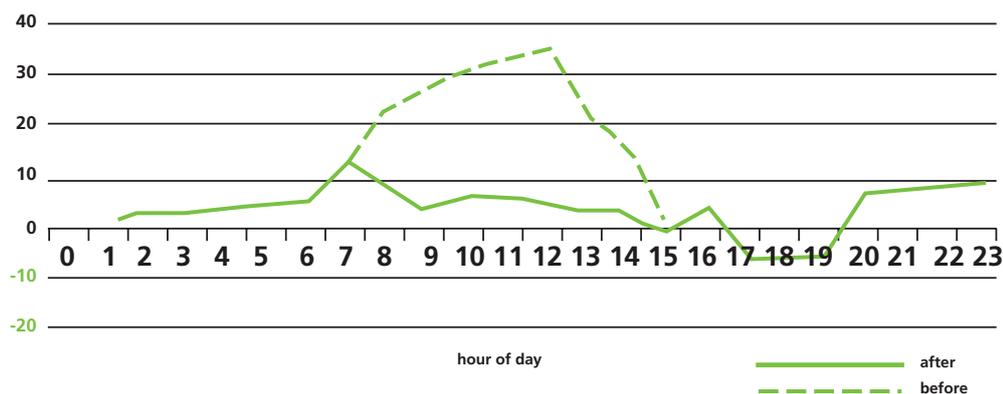
Background

The emphasis on discharge planning really began as a focus on the few patients who stay in hospital for a long time after they are clinically ready for discharge (termed as 'bed blockers').

Discharge planning is a key part of the operational management of beds. Evidence suggests that temporary mismatches in the demand and capacity of beds is ongoing. This occurs when the total number of new admissions necessitates patient discharge so that their beds become available.

The Emergency Services Collaborative identified this as one of the reasons why A&E departments fill up. The hospital is, to all intents and purposes, grid locked until patients are discharged. The Department of Health developed the following illustration in its publication *Achieving Timely Simple Discharge from Hospital: A Toolkit for the Multidisciplinary Team*

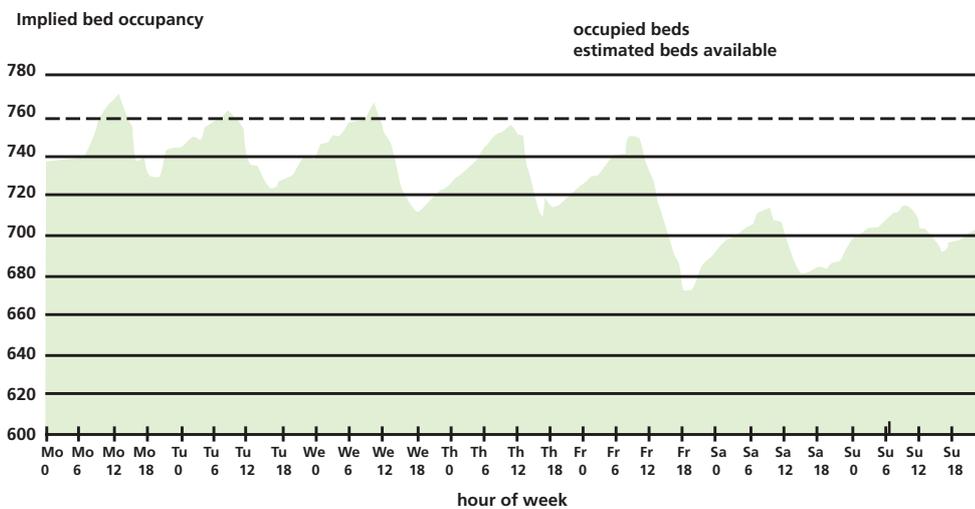
Cumulative bed state across Monday (From zero at midnight)



The dotted line shows the extra beds needed during the few hours when admissions outpace discharges. The red line shows that moving even just 30 per cent of discharges ahead of admissions would reduce the maximum bed requirement from 35 to a very short term peak of just 10 over the average required.

Therefore, planning discharges before the peak in admissions is an effective way to smooth the total demand for beds. The same authors also illustrate the importance of continuous discharge throughout the week to reduce the variation in demand for beds.

Many hospitals still try to manage weekend capacity by discharging large numbers of patients on a Friday. Discharges then slow to a trickle until Monday morning (or often Monday afternoon). This is not the most effective strategy. It often takes several days for the mismatch between admissions and discharges, built up over the weekend, to resolve, with predictable consequences in terms of pressure on beds. The example below shows this.

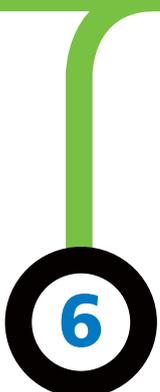


The authors found it difficult to assess the impact of discharge planning on readmission rates, length of stay, health outcomes and cost to patients and healthcare providers. They concluded that, although the impact of discharge planning may be slight, it is possible that even a small reduction in length of stay or readmission rate could free up capacity for subsequent admissions in a healthcare system where there is a shortage of acute hospital beds.

Acknowledgements

Department of Health

British Association of Day Surgery



6

6.14 Day surgery - treat day surgery as the norm

Purpose

Day surgery is best defined as 'the admission of selected patients to hospital for a planned surgical procedure, returning home on the same day. True day surgery patients are day case patients who require full operating theatre facilities and/or a general anaesthetic and any day cases not included as outpatient or endoscopy'.

Treating day surgery (rather than inpatient surgery) as the norm for elective surgery is the first of the ten high impact changes identified by the Modernisation Agency through its work with NHS clinical teams and could release nearly half a million inpatient bed days each year. Switching appropriate procedures to day case supports the national imperative of giving patients more choice, whilst releasing inpatient bed days can improve patient access.

When to use it

If you have evidence of procedures being cancelled due to a lack of beds, or indications that a lot of time is spent trying to find a bed, the impact of day surgery is likely to be substantial. If the bottleneck isn't around inpatient beds, the impact of day surgery is likely to be less direct.

Rather than asking 'is this patient suitable for day case?' you should be asking 'what is the justification for admitting this patient?' Inpatient care should be the exception in the majority of elective procedures, not the norm. The hospital's systems, processes, design and physical space should be organised on this basis.

How to use it

The Audit Commission (now the Healthcare Commission) identified 25 procedures that, in most cases, can be carried out safely as a day case.

You can compare your day case performance against these 25 procedures using the NHS Indicators Better Care, Better Value website (www.productivity.nhs.uk).

High values indicate a larger proportion of cases carried out as day case surgery - the higher the case rate, the better. This indicator estimates the potential cost savings if all trusts achieved a rate of day case surgery in line with the top quartile.

The British Association of Day Surgery (BADs) also promotes the provision of quality care in day surgery. It encourages trusts to focus on the short stay elective pathway and plan to manage the majority of elective patients with stays of less than 72 hours.

In its directory of procedures, BADs highlights an indicative percentage for patients undergoing a procedure under four pathway options: procedure room, day surgery, 23 hour stay and under 72 hour stay.

Acute trusts working with the Modernisation Agency also identified key operational issues that you can address to make significant improvements in day case surgery, including:

- patients admitted the night before for day case procedures
- patients kept in overnight for non clinical reasons
- patients planned to be day cases but coded as inpatients
- poor use and organisation of theatres
- inconsistent criteria for day case anaesthesia
- lack of focused clinical leadership (evidence suggests that where there is an identified clinical lead, the commitment to improve day surgery rates is increased).

The NHS Institute has worked with day surgery clinicians and BADS to identify a list of ten procedures from the Healthcare Commission basket and the BADS former 'trolley' of procedures that can easily be carried out as day cases.

The ten procedures in table one have the potential to deliver large gains in the volume of patients involved.

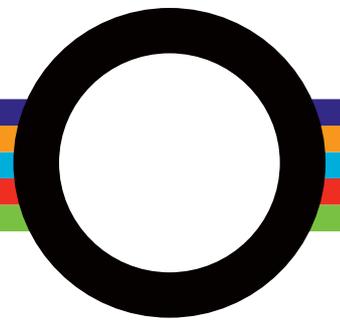
Table one

Table 1: Ten procedures that can easily be done as day cases		
Procedure	Current national day case rate (%)*	Potential national day case rate (%)*
1 Inguinal hernia	47.5	85
2 Varicose veins	54.4	90
3 Termination of pregnancy	89.0	95
4 Cataract	90.6	99
5 SMR	22.9	95
6 Extraction of wisdom teeth	87.9	95
7 Cystoscopy/TUR bladder tumour	19.1	40
8 Arthroscopy meniscectomy	73.1	90
9 Excision of Dupuytren's Contracture	41.7	95
10 Myringotomy/grommets	85.0	97

Source: Hospital Episode Statistics (HES) for 2002/3. Based on admissions (FFCEs)

* National day case is calculated by dividing the total number of elective day case admissions across all providers (Trusts and PCTs) by the total number of elective admissions for each individual procedure.

** Potential day case rates are drawn from an exercise undertaken with a group of clinical leaders to estimate what the best possible national rate could be based on an international comparison.



As a starting point to improve day case rate you should:

- Assess your day case rates against those in table one
- Look at the remaining 17 Healthcare Commission basket of procedures and aim to achieve at least upper quartile performance
- Look at the British Association of Day Surgery and aim for at least the upper quartile performance rates

Examples

1. South Devon Hospital Trust has had significant success in achieving a high rate of day cases nationally. They are now focusing on exploring more complex cases. Their approach is to:
 - Identify a procedure that could be carried out in a day case setting
 - Have a strong project structure
 - Work with clinical staff and review processes
 - Listen to and deal with all clinical concerns
 - Plan the day case process around patient need - for example, managing recovery at home and patient information
 - Encourage staff rotation between inpatient and day units
2. South Essex Partnership NHS Trust has adapted treat day surgery as the norm for mental health care services in order to focus on the management of admissions for informal patients. Clinical staff began by targeting the prevention of admissions and improving discharge arrangements by focusing on a new assessment and recovery unit, in addition to the development of five crisis resolution home treatment teams.

The assessment unit provides support to the crisis teams through an inpatient facility offering a maximum 72 hour stay. This allows time for community services to organise appropriate help and support an early discharge. Results demonstrate a reduction in the need for out of area placements.

What next?

Treating day surgery as the norm suggests a change in the way we think about elective care. Senior clinical and managerial leaders and trust boards need to help their organisations make that switch in thinking.

It is also helpful to [learn from change](#) and spend time identifying what has led to improvements in other organisations in this area. Using a [project management](#) approach will increase the potential of successfully delivering the change.

Additional resources

Websites

www.institute.nhs.uk - for 10 High Impact Changes and Delivering Quality and Value

www.productivity.nhs.uk - for NHS Indicators

www.bads.co.uk - for the British Association of Day Surgery's directory of procedures

www.dh.gov.uk - for day surgery operational guide, benchmarking tool and planning toolkit

Background

For any surgical operation there are significant variations in performance throughout the UK with regard to time spent in hospital. This postcode lottery is an issue that organisations such as the British Association of Day Surgery and the Healthcare Commission continue to highlight on a regular basis.

This variation cannot be explained solely by differences in case mix. Evidence suggests that a sizeable proportion of variation is due to differences in clinical practice and / or variation in measurement systems. Addressing clinical practice variation and adopting a common measurement system would significantly increase the potential for day case surgery in many trusts.

The NHS Indicators Better Care, Better Value website is based around 15 high level indicators of efficiency, including increasing day case surgery rates. These indicators can be used locally to help inform planning, to inform views on the scale of potential efficiency savings in different aspects of care and to generate ideas on how to achieve these savings.

Research by the Modernisation Agency suggests that the major reason for slow growth in day surgery is that hospitals predominantly organise themselves as providers of inpatient care. We typically do not have a day case mindset and we design our systems accordingly.

An underpinning goal is to design the healthcare system so that the only time patients spend in hospital is time that adds value for them. This may also mean using effectiveness guidance to assess whether surgery is necessary at all.

6.15 Enhanced recovery programme

Purpose

Focusing on recovery improves the quality of the patient experience. Following the enhanced recovery programme increases the number of patients you are able to see and reduces length of stay. This is because you are doing the right things at the right time, more of the time. Patients get better faster and need less staff and other resources.

The programme focuses on making patients active in their own recovery; this reduces resource needs for staff and means that patients are better prepared to manage when back at home. It also aims to ensure that patients always receive evidence based care at the right time.

The overall combination allows more patients to be treated within the same staffing resources. This will reduce waiting times and the number of patients waiting.

When to use it

The enhanced recovery programme is about improving patient outcomes and speeding up recovery after surgery. If you want to increase patient flow, whilst maintaining or improving the patient experience, this is a helpful tool to use.

The introduction of minimally invasive techniques may initially increase theatre time, so this needs to be monitored. Looking at improving systems around theatres and theatre schedules should offset this, as well as the reduced bed occupancy.

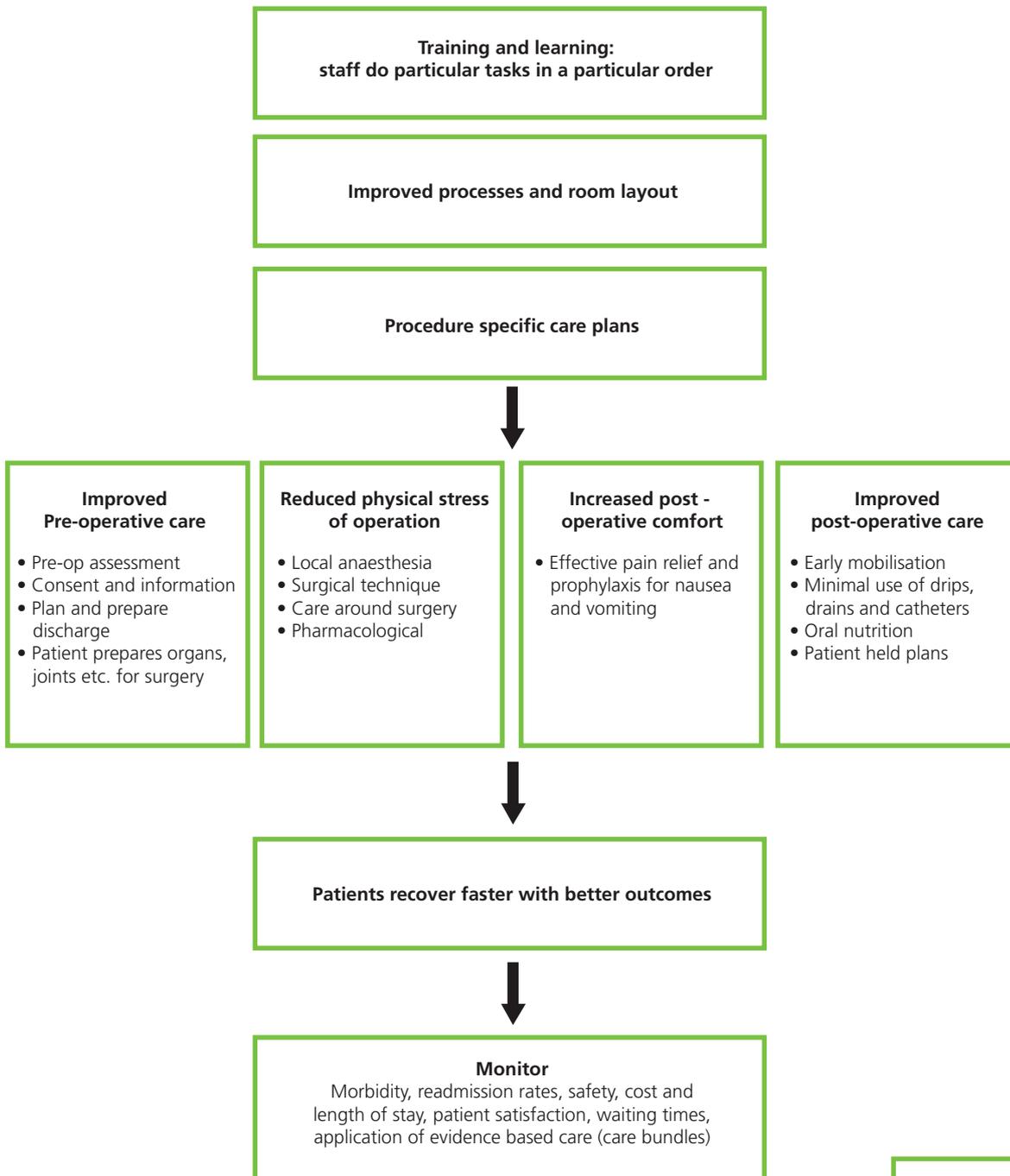
How to use it

There are four elements to the enhanced recovery programme:

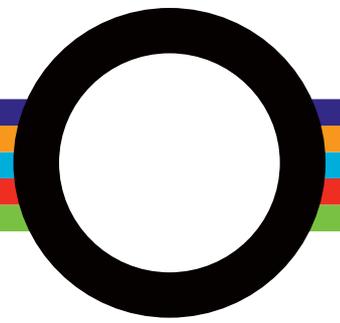
1. Preoperative assessment, planning and preparation before admission.
2. Reducing the physical stress of the operation.
3. A structured approach to immediate postoperative and perioperative management, including pain relief.
4. Early mobilisation.

There are also three areas that can help you manage the enhanced recovery programme:

1. Staff training and learning.
2. Improved processes and room layout.
3. Procedure specific care plans.



Adapted from
Wilmore, D. W et al.
BMJ 2001:322:473 =
476



Some elements of the enhanced recovery programme are similar to integrated care pathways. In fact, you should build upon an integrated care pathway as your starting point. However, there are some things that are new and specific to this approach:

- It brings together two best practices: organisation of care and clinical management, whilst making sure that patients receive evidence based care.
- It uses patients and their families as an appropriate resource in planning and managing their own recovery and care.
- It focuses on less invasive surgical techniques, pain relief and the management of fluids and diet, which help patients to get on their feet quickly postoperatively and speeds up recovery.
- It aims to make events in a hospital as normal as possible. For example, patients eat in a dining area, not in their beds.

Where you already have an agreement about patient care, you can build on an integrated care pathway. See protocol based care (at www.institute.nhs.uk/qualitytools) for more information.

Step one - improve preoperative care

For complex surgery in particular, you should aim to involve family and carers in all preoperative education and planning processes, as well as the patient's GP. This maximises the chances of the patient understanding and acting on the advice given.

The aim of preoperative assessment is to ensure that:

- Full assessment, including consultation with an anaesthetist, takes place as soon as the decision to operate has been made.
- The patient has the maximum opportunity to get their body as fit as possible for surgery and anaesthetic (eat the right food, mobilise joints etc.)
- The patient fully understands the proposed operation and is ready to proceed.
- Staff identify and co-ordinate all essential resources and discharge requirements.
- Dates for the operation and discharge are in everyone's diary.

Step two - reduce the physical stress of the operation

Apply best practice to reduce the physical stress of the operation as much as possible.

- Minimally invasive operation techniques: either smaller incisions or a laparoscopic approach.
- Epidural local anaesthesia.
- Keeping patients warm during the operation.

Step three - increase postoperative comfort

The focus is to get patients moving and eating normally as soon as possible after their operation.

- Vigorously treat postoperative pain to reduce surgical stress responses.
- Try to get patients moving with a suitable low dose epidural (special pumps are helpful to allow easy mobilisation).
- Do not use naso-gastric tubes routinely in patients undergoing elective gastrointestinal surgery.
- Help patients to resume a normal diet as soon as possible (include nausea management).

Step four - improve postoperative care

The focus is to continue enabling patients to move with a focus on nutrition.

- Continue to manage postoperative pain.
- Strong focus on nutrition and mobilisation.
- Clear discharge and post discharge arrangements.

Factors that help the enhanced recovery programme include:

1. Staff training

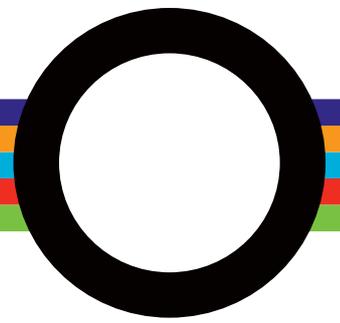
There are five areas of focus:

- Learning about the evidence around speeding up recovery post surgery.
- Developing a mindset where patients are active in their recovery while aiming to make life in the ward as normal as possible.
- Surgical techniques.
- Adoption of a consistent protocol by anaesthetists.
- Consistent implementation of the programme.

2. Improved processes and room layout

Plan or schedule work around what needs to happen to patients and when in order to smooth workflow. Use this to plan ahead and know when the next step is ready.

Focus on the physical environment of the ward and workspace to ensure that you have a logical layout and good organisation to maximise efficiency: [sort and shine](#) may give you ideas. You can also use a [spaghetti diagram](#) to identify unnecessary movement of staff, patients and paperwork and see potential areas for improvement.



3. Procedure specific care plans

In addition to developing procedure specific care plans, patients should have their own care plans. This means that they know what should happen to them each day. It includes things that staff should do (e.g. remove catheters) and that patients themselves should do (distances walked). Patients then become a check or reminder for their own care.

Examples

Clinicians usually lead development of the enhanced recovery programme. In hospitals where the programme is in place, teams are often formed through the partnership of a respected consultant surgeon and a respected senior nurse or matron. These teams include consultant anaesthetists, surgical trainees and experts in acute pain management. As this is a relatively big change, a strong [project management](#) approach helps to carry it through.

1. In Torbay Hospital, an F grade nurse was designated as the facilitator for the project. [Clinical engagement](#) and support of all staff (see [staff perceptions](#)) was critical. As the leads had evidence of patient benefits to hand, they put up snippets of evidence in places where staff spent time (staff room, corridors etc.) to gain buy-in.

The leads also had strength of conviction. They knew the evidence and anticipated the impact. As an example, they managed to persuade facilities to convert one of their wards into a kitchen and dining area. Other up front investments requiring funding included epidural pumps and surgical training, which were offset in the main by a reduction in beds required.

2. At the Hvidovre Hospital in Denmark, part of the advanced care planning in orthopaedics involves patients receiving an information pack.

In the pack, there are instructions for measuring things like the height of the toilet seat and so on, which patients send back to the hospital. Using these, combined with other information on an individual patient enables staff to get all the equipment ready. Patients receive this at their discharge.

If patients are unable to take the measurements, staff know that they will have problems and can be thinking about alternative arrangements.

What next?

Once implemented, your ongoing focus should be on developing measures to indicate how well the programme is working by monitoring the following areas:

- patient readmission rates
- patients' length of stay
- adherence to plans (one way you can do this is through a care bundle approach that will describe how many patients receive all aspects of best care)
- ongoing feedback and discussion with staff until the programme has become an everyday part of working practice.

Additional resources

Journals

Management of Patients in Fast Track Surgery, F. Wilmore and H. Kehlet, 2001 (BMJ Vol.322 p473-476)

Risks of Interrupting Drug Treatment Before Surgery: The Consequences May be as Serious as those from Drug Errors, D. Noble and H. Kehlet, 2000 (BMJ Vol.321 p719-720)

Background

The enhanced recovery programme, originally called the multi-modal approach, was developed by Professor Henrik Kehlet. It is also called fast track surgery.

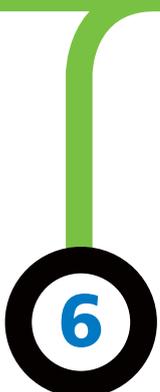
Torbay Hospital developed the enhanced recovery programme based on the experience of Robin Kennedy (Yeovil Hospital, North East Somerset Trust) and Polly King's experience of enhanced recovery as Robin Kennedy's Research Specialist Registrar. Kennedy conducted surgical master classes with the surgeons to help them improve their laparoscopic skills. King helped Torbay having already experienced the benefits of the enhanced recovery programme.

Acknowledgements

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Professor Henrik Kehlet, Rigshospitalet, Copenhagen, Denmark



6

6.16 Patient information

Purpose

Good patient information ensures that patients are prepared and fully aware of the next step in their pathway so they are able to plan ahead. It helps to involve patients and carers in their care and improve their overall experience. You can also reduce DNAs and cancelled procedures and operations by ensuring that the patient has certain information:

- When and where their appointment is.
- How to get to there.
- Any prior information relating to the procedure or treatment e.g. no drinks containing caffeine before a nuclear medicine heart scan.

This tool gives you guidance on writing information about conditions, treatments, procedures, examinations, surgery and services. It doesn't tell you what to write, but how by highlighting points about writing style.

When to use it

Try using the guidance as a checklist if you suspect communication to patients is one of the causes of delay. You may find it helpful to use small scale tests of change when writing patient information.

How to use it

Aim to write from the patient's point of view and assume little knowledge of the subject. The exception to this is the 'expert patient' who has a long term medical condition.

- Use everyday language without being patronising - avoid jargon and acronyms.
- Use patient friendly text - personal pronouns such as 'we' and 'you'. If it is difficult to avoid using medical terminology such as 'nuclear medicine', explain what it means.
- Information should be in context with other information i.e. letters and leaflets and be relevant to individuals.
- Reinforce the information that patients have been told at the clinic.
- Explain instructions, e.g. why a patient shouldn't eat for six hours.
- Help people make decisions by giving them facts about risks, side effects and benefits.
- Tell people what other information, support and resources are available.
- Be up to date - give the most recent practice and latest phone numbers.
- Let people know if information is available in other formats.

You are aiming to make the text accessible to a wide ranging audience so use short sentences - in general no more than 15 to 20 words long - and write in lower case letters where possible in a minimum font size of 12. You should use present and active tenses i.e. 'your appointment is on...' not 'your appointment has been made for...'

How the text looks is also important: white space makes the information easier to read. Aim to have small blocks of text: a question and answer format or bullet points are both effective ways of dividing up blocks of text. You should use large bold font to emphasise text (avoid upper case letters, italics and underlining.)

Labelled diagrams and pictures can illustrate content where appropriate, but avoid using Clip Art; images and pictures from the NHS photo library will create a more professional finish.

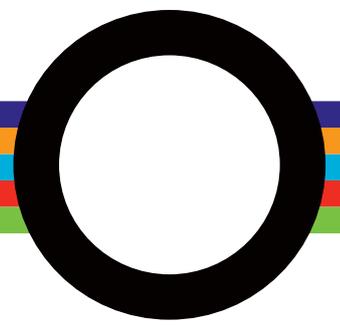
The planning stage

- Identify who needs to be involved and how you will keep them involved.
- Identify the need for specific information from patients, carers or clinicians.
- Check what other relevant information already exists in the organisation, from other sources such as NHS Direct or charitable organisations.
- Consider how information will be distributed i.e. on a rack, handed to the patient, posted or e-mailed? Who takes responsibility for this?
- Identify resource requirements. The NHS *Toolkit for Producing Patient Information* suggests that core funding is a sensible way of organising the distribution of leaflets as it can be more cost effective to print leaflets than photocopy them.

The writing stage

We recommend that you use the small test of change cycles (see [plan, do, study, act - PDSA](#)) to help you develop patient information. Consider the following when writing for patients:

- Is it easy to read? Check your draft against the guidance. Make changes and produce another draft. Check it with members of your team. Do rapid cycles of testing until it seems easy to read.
- Is it right? Check your draft with colleagues, clinicians, experts and patient support groups. Consider secretaries and booking staff. If you are sending it to someone, always specify a deadline for them to feedback to you.
- Is it good for patients? Check it with patients or with people in the hospital who are not familiar with the topic area.



Final checks

- Ensure information doesn't conflict with other information e.g. appointment letters and other partners in the NHS.
- Verify contact phone numbers by calling them.
- Use general names for local contacts, for example, 'cardiac rehabilitation nurse'.
- Use general drug names, for example, 'paracetamol' not 'Panadol'.

The consultation stage or sign off

- Ask patients to assess the information through patient groups and give a final draft to interested parties setting a deadline for response.

The distribution stage

- Make sure patients receive information at an appropriate time, not half an hour before a procedure or when they are in shock.
- Monitor how the information is used. For example, is it handed out and by whom? Is it used for the intended purpose?

Examples

Weston Area Healthcare developed a new approach to providing information for relatives and carers. A survey carried out in a medical ward highlighted that patient/relative information concerning ward times and direct dial numbers was poor.

To address this, an information card was developed to give out to all relatives and carers. This included basic information about where their relative was in hospital, the ward name, address, direct telephone number and in some cases, visiting hours. The name of their consultant and ward round was also written on the back of the card.

Although the trust has not formally evaluated the impact of the information card, patients and relatives frequently comment that it is very useful. The business card style adopted seems to prevent loss of the card and it is more professional than the scraps of paper that were used in the past. The cards are printed off site and cost approximately £170 for a pack of 4000 cards. In surveys since the introduction of the card, the results for patient information have improved.



Additional resources

Websites

www.patient.co.uk - provides comprehensive, free and up to date health information as provided by GPs to patients during consultations.

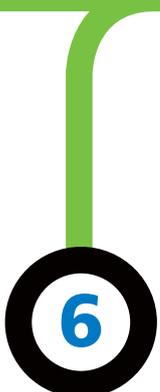
www.pickereurope.org - for good practice information.

Background

Improving information for patients was a commitment in the NHS Plan (July 2000 Chapter 10) and part of the recommendations in the Kennedy Report into the Bristol Royal Infirmary (July 2001, Section 2, Chapter 23).

Acknowledgements

The guidelines have been taken from a toolkit developed by the NHS Identity website with the Patient Information Forum, the Royal National Institute for the Blind and the Plain English Campaign.

**6**

6.17 SBAR – situation, background, assessment, recommendation

Purpose

SBAR is an easy to remember mechanism that you can use to frame conversations, especially critical ones, requiring a clinician's immediate attention and action. It enables you to clarify what and how information should be communicated between members of the team. It can also help you to develop teamwork and foster a culture of patient safety.

SBAR consists of standardised prompt questions within four sections, to ensure that staff are sharing concise and focused information. It allows staff to communicate assertively and effectively, reducing the need for repetition. It also helps staff anticipate the information needed by colleagues and encourages assessment skills. Using SBAR prompts staff to formulate information with the right level of detail.

When to use it

If you have concerns about the level and quality of communication, you can use SBAR to actively focus on improving communication, particularly verbal communication.

SBAR can be used to shape communication at any stage of the patient's journey, from the content of a GP's referral letter and consultant to consultant referrals, through to communicating discharge back to a GP.

When staff use the tool in a clinical setting, they make a recommendation that ensures the reason for the communication is clear. This is particularly important in situations where staff may be uncomfortable about making a recommendation i.e. those who are inexperienced or who need to communicate up the hierarchy.

The use of SBAR prevents the hit and miss process of 'hinting and hoping'.

How to use it

S - situation:

- Identify yourself the site/unit you are calling from
- Identify the patient by name and the reason for your report
- Describe your concern

The example shows how to explain the specific situation about which you are calling, including the patient's name, consultant, patient location, code status, and vital signs.

'This is Lou, a registered nurse on Nightingale Ward. The reason I'm calling is because Mrs Taylor in room 225 has become suddenly short of breath, her oxygen saturation has dropped to 88 per cent on room air, her respiration rate is 24 per minute, her heart rate is 110 and her blood pressure is 85/50. We have placed her on six litres of oxygen and her saturation is 93 per cent, her work of breathing is increased, she is anxious, her breath sounds are clear throughout and her respiratory rate remains greater than 20. She has a full code status.'

B - background

- Give the patient's reason for admission
- Explain significant medical history
- Inform the consultant of the patient's background: admitting diagnosis, date of admission, prior procedures, current medications, allergies, pertinent laboratory results and other relevant diagnostic results

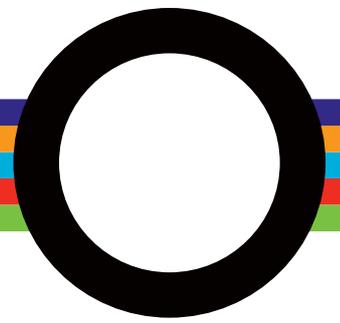
For this part in the process you need to have collected information from the patient's chart, flow sheets and progress notes. For example:

'Mrs. Smith is a 69 year old woman who was admitted 10 days ago, following a MVC, with a T 5 burst fracture and a T 6 ASIA B SCI. She had T 3-T 7 instrumentation and fusion nine days ago, her only complication was a right haemothorax for which a chest tube was put in place. The tube was removed five days ago and her CXR has shown significant improvement. She has been mobilising with physio and has been progressing well. Her haemoglobin is 100 gm/L but otherwise her blood work is within normal limits. She has been on Enoxaparin for DVT prophylaxis and Oxycodone for pain management.'

A - assessment

- Vital signs
- Contraction pattern
- Clinical impressions, concerns

You need to think critically when informing the doctor of your assessment of the situation. This means you have considered what might be the underlying reason for your patient's condition. Not only have you reviewed your findings from your assessment but you have also consolidated these with other objective indicators, such as laboratory results.



If you do not have an assessment, you may say:

'I think she may have had a pulmonary embolus.'

'I'm not sure what the problem is, but I am worried.'

R - recommendation

Finally, what is your recommendation? That is, what would you like to happen by the end of the conversation with the physician? Any order that is given on the phone needs to be repeated back to ensure accuracy.

- Explain what you need - be specific about request and time frame
- Make suggestions
- Clarify expectations

For example:

'Would you like me get a stat CXR and ABGs? Start an IV?'

'Should I begin organising a spiral CT?'

'When are you going to be able to get here?'

Incorporating SBAR may seem simple, but it takes considerable training. It can be very difficult to change the way people communicate, particularly with senior staff.

Recommended uses and settings for SBAR include:

- Inpatient or outpatient
- Urgent or non urgent communications
- Conversations with a physician, either in person or over the phone - particularly useful in nurse to doctor communications and also helpful in doctor to doctor consultation
- Discussions with allied health professions such as respiratory therapy and physiotherapy
- Conversations with peers – change of shift report
- Escalating a concern

Tips

Less experienced clinical staff can sometimes be anxious about making recommendations. Where this is the case, you will need to offer extra support and encouragement. A good place to start is by trying the tool with supportive colleagues.

Hospitals using SBAR have found that notepads or paper with the tool printed on them, pocket cards and stickers on telephones are useful aide-memoires.

Examples

1. The multi-disciplinary team meeting is an example of the process in action. Many clinicians are present and most are in a position to help formulate the most appropriate management for the patient.

The doctor directly responsible presents the current situation and the relevant background. The assessment will include a discussion with the clinician to clarify the clinical findings and a joint review of the results of all relevant investigations. Recommendations will be agreed by all present. These will be documented in the patient's records for implementation.

2. Another example where this tool would add to clarity and better care is the emergency call to a sleeping senior colleague for advice about patient management.

When woken in the night, it takes some time to absorb the facts and respond. This is greatly aided by a clear presentation of the situation, the background, the assessment and the proposed treatment.

In the surgical situation it is possible, and even quite likely that the senior colleague is needed to help with the assessment and / or to carry out the recommended surgery. The request for direct help should be made clear as part of the recommendation so there is no misunderstanding.

What next?

Once you have started testing SBAR as a communication tool, you will need to assess if it has made a difference. You should focus on making sure the checklist (you could invent your own) and principles of good communication are being used by people in practice.

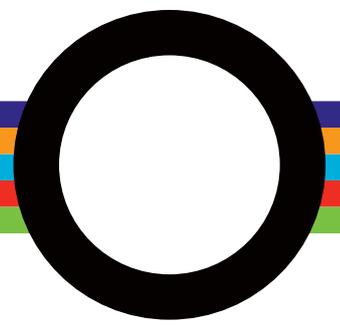
If it is proving successful, the next step is to get this into people's everyday habits, so it becomes 'the way things are done around here'.

Ways of doing this include:

- Using prompts and visual cues – e.g. stickers on the telephone, letter templates and patient notes.
- Ensuring people feel it's alright to prompt each other using your agreed framework. For example 'Can I make sure I understand you? What is your recommendation here?'
- Make time for team discussion, reflection and refinement of the tool.
- Disseminate your good practice to other teams by modelling the communication behaviour you're aiming for.

Other tools and techniques that may help you

[Listening – importance of this skill](#)



Additional resources

Websites

www.institute.nhs.uk/safecare - for more information on using SBAR to improve patient safety. Select 'tools for safer care' from the right hand menu.

www.npsa.nhs.uk - for a very useful summary of SBAR by Lertzman (2005) titled No More Hinting and Hoping: An Interview with Frances Griffin.

www.ihl.org - for SBAR tools that have been adapted for specific settings.

Background

Originally used in the military and aviation industries, SBAR was developed for healthcare by Dr M Leonard and colleagues from Kaiser Permanente in Colorado, USA. In one healthcare setting, the incidence of harm to patients fell by 50 per cent after implementing SBAR.

7

Thinking creatively

Thinking creatively - an overview

Purpose

Creativity tools are tried and tested ways of coming up with new solutions and perspectives to an issue, problem or improvement opportunity.

If you want to think innovatively, you need to observe what is going on around you. We are used to viewing situations from our own personal perspectives. However, by developing the skill of looking at things in a variety of different ways, you can make new connections and lateral leaps. When you are stuck in one way of thinking and feel that you have exhausted all the options, a 'fresh pair of eyes' can see a whole new way of doing things that you hadn't thought of before.

When to use it

You have probably already identified and fixed the easy things, but now you need to improve and fine tune all the elements of the patient journey. To do this, it helps if you see things with new eyes, gathering different perspectives to tease out the alternative ways of getting things done.

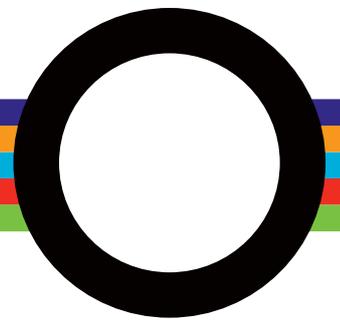
How to use it

Stimulating resourceful thinking typically involves three mental processes:

Step one - focus attention on something that you don't normally focus on.

Step two - escape from the way you traditionally think (commonly called 'thinking outside the box').

Step three - suspend judgement and allow your imagination to explore different possibilities.



The specific details for each of the tools and techniques can be found in the relevant sub sections:

- 7.1 [Brainstorming](#)
- 7.2 [Six Thinking Hats®](#)
- 7.3 [That's impossible!](#)
- 7.4 [Fresh eyes](#)
- 7.5 [Wish for the seemingly impossible](#)
- 7.6 [Provocation to help solve problems](#)
- 7.7 [Bullet proofing](#)
- 7.8 [Simple rules](#)

Examples

Professor Elliot demonstrated a great example of creative thinking when he connected car racing to heart surgery and applied his learning from how a pit stop is performed to improve the transfer processes at the end of heart surgery. (Ferrari pit stop saves Alexander's life, William Greaves - The Telegraph 29 August 2006).

What next?

Look at all the creativity tools available in this guide and obtain a copy of the NHS Institute's *Thinking Differently Resource Guide*. You will be familiar with some of these tools, although you may not have used them before. Sometimes you may need to follow simple rules for the tools to be effective.

Other useful tools and techniques that can help you:

[Affinity diagram](#) - a structured brainstorm

[Root cause analysis using five whys](#)

Additional resources

Books

Creativity, Innovation, and Quality, Paul Plsek (Quality Press)

Websites

www.directedcreativity.com – for more information on Paul Plsek's work

www.institute.nhs.uk – for the *Thinking Differently Resource Guide and Commissioning to Make a Bigger Difference*

7

7.1 Brainstorming

Purpose

Brainstorming can help you think up ideas without making hasty judgements. It is an effective way of generating lots of ideas around problems, as well as clarifying the relevant issues and thinking up solutions and next steps.

When to use it

One of the first things you need to determine is whether you should use a brainstorming session at all. You should only use it for generating new ideas and solutions - it should not be used for analysis or decision making.

Brainstorming works well during the initial generation stage and is a useful way of getting people involved. The approach works particularly well when solving people related problems.

How to use it

Five key rules of brainstorming:

- All ideas are acceptable - judgement is ruled out until the process is complete.
- Freewheeling is welcome - the wilder the better. Humour triggers the right brain so this really helps to get original ideas flowing.
- Quantity counts at this stage, not quality.
- Build on the ideas put forward by others.
- Every person and every idea has equal worth.

Step one

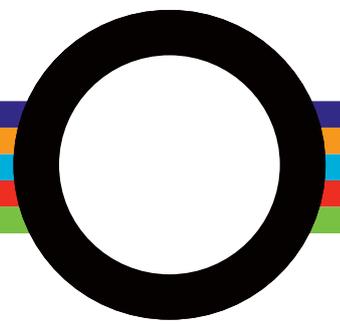
Make sure you have the right kit: flip charts, Post-it notes, pens and the right people in the room: twelve is a good group size, but more or less can be present.

Step two

Define the purpose of the session – what is the problem or opportunity? Write up a statement describing it, but be careful not to suggest a solution as this will hinder idea generation.

Step three

Brainstorming is not a static exercise, so encourage people to stand up, shift position and move around. People should call out ideas spontaneously with no discussion at this stage. Encourage 100% participation.



Step four

Get everybody's ideas down on paper as they are called out - use nonlinear note taking methods. Post-its are great for this: if people don't want to shout out their ideas, they can write them on a Post-it and stick it on the flip chart instead.

Step five

You should aim for 20–30 ideas in five to seven minutes.

Tips

The facilitator introduces the session, keeps an eye on the time and makes sure rules are obeyed. This person ensures that participants feel comfortable and join in. They are also responsible for restarting the process if it slows down.

To maximise the approach, you should:

- Plan specific sessions to work on particular issues.
- Have a brief warm up on an unrelated, fun topic. This will get the creative juices going and help establish a less restrictive mood. Only start the main topic when the right mood is established.
- Allow time afterwards for going through the ideas generated.
- Post up the five rules of brainstorming as a reference for all.
- Remember that giving people permission to freewheel doesn't necessarily mean they have the learned skill to do so.
- You should not plan a brainstorming session if you already have several solutions and all you want to do is to decide which one to use. This is best done by analysis.

Techniques that build on brainstorming as an approach

Bullet proofing enables you to identify and plan for potential obstacles by asking questions such as:

What could possibly go wrong?

What are some of the difficulties that could occur?

What is the worst imaginable thing that could occur?

What negative effect could this project or change have on another team's work?

Edward De Bono's **Six Thinking Hats**® can also help with brainstorming. This is a technique where a group has short discussions, generates ideas or makes decisions from a single perspective in a planned sequence.

There are six perspectives (hence the six hats) and one of these is a brainstorming hat (it's green representing growth like trees, grass, flowers). The others are yellow (like the sun, positive), black (negative), red (like fire, feelings), white (like paper, information) and blue (like the sky, controls the process).

What next?

You need to agree what to do with the ideas your group has generated. There are some techniques to help you do to this, such as a silent idea generation method which also includes grouping called the [affinity diagram](#). Other approaches include dot voting where everyone has a specific number of dots to select their favourite ideas.

It may also be useful to test out several ideas if appropriate. The best way to do this is to do some rapid small scale tests of change, as a way of deciding where to focus your efforts. See [plan, do, study, act \(PDSA\)](#).

You can use brainstorming at any stage of a project or meeting. It is possible to generate a lot of ideas in a really short time with tight planning and focus.

Additional resources

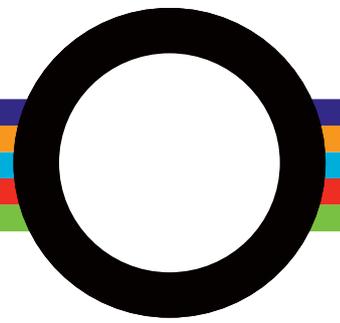
101 Creative Problem Solving Techniques: the Handbook of New Ideas for Business, J.M. Higgins (Paperback)

Background

Alex Osborn invented the technique of brainstorming. It was developed further during the 1940s and 1950s. The psychologist J.P. Guilford identified five key traits in creative behaviour:

- Fluency – the ability to generate many ideas in a set time.
- Flexibility - to rapidly free associate.
- Originality - to express uncommon ideas.
- Awareness - to see beyond the immediate facts.
- Drive - the willingness to try without fear of failure.

Osborn sought to develop a method to bring out these five traits in everyone.



7

7.2 Six Thinking Hats®

Purpose

Six Thinking Hats® is a simple yet powerful tool created by Edward De Bono based on a principle of parallel thinking: everyone thinking in the same direction, from the same perspective, at the same time. It helps people step outside the confines of fixed positions and one way of thinking.

To achieve service improvement, you will have to change the way you do things. This means thinking up and considering new ideas. This tool will help you evaluate the change from a number of perspectives, offering a more balanced outlook. This way, you and your team can move the best, most viable ideas forward.

When to use it

Six Thinking Hats® is particularly useful during or after the 'harvesting' of ideas as it can help to extend your understanding of an idea, thereby helping to determine whether it is feasible. You can also use it in any context requiring a well rounded view from a variety of perspectives.

How to use it

De Bono's six hats represent artificial distinctions in common patterns of thought, helping you and your team to adopt different ways of thinking (taking your normal hat off and trying on another).

Six Thinking Hats® has been specifically designed so that everyone thinks in parallel using only one hat at a time. The process works best with a time limit (4-5 minutes) for each hat to prevent the conversation getting stuck on one area. This encourages the group to 'try on other hats' when they have looked at a situation for too long and have become fixed in a specific style, e.g. too negative (black hat) or too emotional (red hat).

When facing complex situations that call for different reactions, it is useful to adopt the different patterns of thinking one at a time.

- White hat thinking helps establish known facts
- Green hat thinking helps to think about new ideas
- Blue hat thinking draws together the contribution of different parties
- Black hat thinking determines all the possible errors that could occur

Someone in the group 'puts on' the blue hat as the session leader. The blue hat will then agree with other group members on the most useful order of hats to use and will co-ordinate their subsequent use, keeping a check on time.

Ask leading questions to activate different hats.

- What are the facts? (White)
- What do you feel about this? What is your gut feeling? (Red)
- What can go wrong? (Black)
- List all the benefits. (Yellow)
- Is there a different way of looking at this? (Green)
- Could you summarise the findings so far? (Blue)

The hats have natural pairings: yellow is positive while black is more negative; red is emotion driven while white is data driven. In general, if you use one hat, you should also use its partner for balance.

A useful sequence of hats for initial harvesting of ideas could be: green, yellow, black, white, leading to a final red hat assessment of whether the idea should go forward.



WHITE
- information / data needs



BLACK
- negatives / risk



GREEN
- ideas



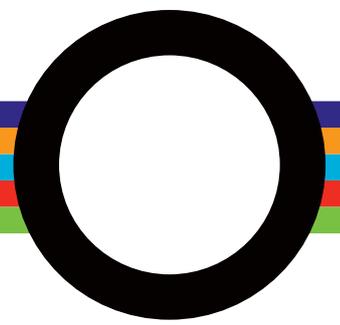
BLUE
- managing the thinking process



YELLOW
- benefits / positives



RED
- emotion / gut feeling



Tips

- Don't be afraid to re-visit certain hats if you feel further exploration is necessary.
- Encourage group members to experiment with the hats themselves rather than stick to a set formula.
- Discourage people from characterising themselves as being a particular hat. Whilst people will have natural preferences, you should encourage them to practise different modes of thinking.
- The six hats can be used in different orders and combinations depending on the individual situation. The key point is that everyone 'wears the same 2%', thinks in the same direction, at the same time.
- The technique can also be used by individuals to help generate ideas or make decisions.
- Can't remember the hats?
 - White = a sheet of paper (for information)
 - Red = fiery, passion, instinct
 - Black = judgemental, negative
 - Yellow = sunshine, positive
 - Green = growth, new, fresh
 - Blue = sky, overarching

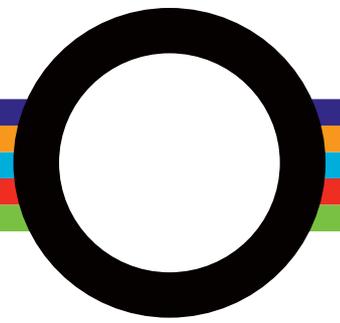
Alternatively:

WHITE	Neutral, objective thinking, concerned with facts	NEUTRAL
RED	Emotional, intuitive thinking	PASSION
BLACK	Gloomy, negative, critical thinking	GLOOMY
YELLOW	Sunny, positive, optimistic thinking	SUNNY
GREEN	Creative, innovative thinking	GROWING
BLUE	Cool, organised, summarised thinking	COOL

Examples

If you are considering introducing a one stop clinic for multiple diagnostic tests, you could use the hats in discussion as follows:

Hat	Comments about one stop clinic idea
	<p>Our creative idea is to implement a one stop clinic in a service area where this has not yet been explored.</p>
	<p>Beneficial for patients – only need to visit the hospital on one occasion, rapid diagnosis, coordinated care, integrated approach.</p>
	<p>Possibly too fast for patients, particularly if diagnostic tests confirm a very serious diagnosis. Risk of carve- out if several professionals are pulled into one clinic setting to the detriment of other services.</p>
	<p>Despite the disadvantages, our gut response is that this will better serve our patients. We are anxious about how these service changes will affect us.</p>
 	<p>Additional information about protocols for delivering bad news to patients would be useful. Capacity and demand work to understand impact on other services. Survey of patient views.</p>



What next?

Having reviewed all the ideas using the Six Thinking Hats® tool, you will have narrowed ideas down to the final few.

- Now see what can be realistically tested.
- Run several small scale tests with volunteers – [PDSA](#).
- Share the findings. Consider using [stakeholder analysis](#) and [communication matrix](#).
- Implement the best ideas.
- If you are stuck for new ideas try [wish for the seemingly impossible](#).

Additional resources

Six Thinking Hats®, E. De Bono, 1987 (Penguin)

Background

Six Thinking Hats® was created by Edward De Bono and is based on a principle of parallel thinking. Many regard Dr De Bono as the leading international authority on creative thinking and the direct teaching of thinking skills. His background is in medicine and psychology.

Acknowledgements / sources

The McQuaig Group

7

7.3 That's impossible!

Purpose

We often take it as read that something is impossible. Maybe we weren't able to do it in the past and haven't recently reconsidered the possibilities. But, if you really think about it, you should find it possible to do (or at least come close to doing) many 'impossible' things. That's impossible! is a tool that you can use to raise expectations and jolt people into believing that extraordinary things really can be achieved.

When to use it

This tool is useful if you and your team are trying to think of new ways of doing things. It helps you to think about what you could do to make the system great in terms of reducing waits and delays. Define what is impossible and then start to do it.

That's impossible! is most useful when you sense that people are reluctant to change or to set ambitious goals for improvement.

How to use it

Step one

Make a list of things that are currently accepted as being impossible, such as:

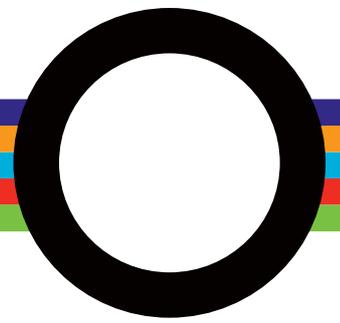
- It is impossible to get laboratory results instantly.
- It is impossible to know if a patient is going to turn up for an appointment until they actually present at reception.
- It is impossible to get someone home exactly when we plan to.

Step two

For each item on the list, have a short session to generate ideas. Ask:

- Is anyone else already doing that?
- How could we actually do that?
- How could we come close to doing that?
- How could we do that at least some of the time?

For laboratory results, you could use point of care testing instruments to get instant results for some common tests. If you know what tests need to be carried out, you can design a plan with the laboratory so that they know the workload level at a specific time. This helps with planning capacity and demand.



For patients turning up for appointments, you could call to see if they are coming and place a large sign near a telephone in the car park asking patients to ring when they are in the car park. That way, you can begin preparation for the appointment. Alternatively, patients could have a swipe card for a special car park or clinic entrance. When they swipe the card on entry, a signal alerts the department that they are on the way.

To get patients home when planned, you could make sure they know the likely discharge date before admission and provide a list of what needs to happen.

Tips

- Because you are working on something that is widely held to be impossible, be prepared for stronger than usual negative thinking as you begin using this tool.
- Be sure to emphasise the rules of idea generation: suspend judgment, go for quantity, build on others' ideas etc.
- Capture all ideas for possible later development: don't let laughter put you off. Suggesting that someone tries something thought to be impossible often results in laughter... until someone actually does it!

What next?

- Review all the ideas. Use the [Six Thinking Hats®](#) tool to get down to the final few ideas.
- See what can be realistically tested.
- Run several small scale tests with volunteers – [PDSA](#).
- Share the findings. Consider using [stakeholder analysis](#) and [communication matrix](#).
- Implement the best ideas.

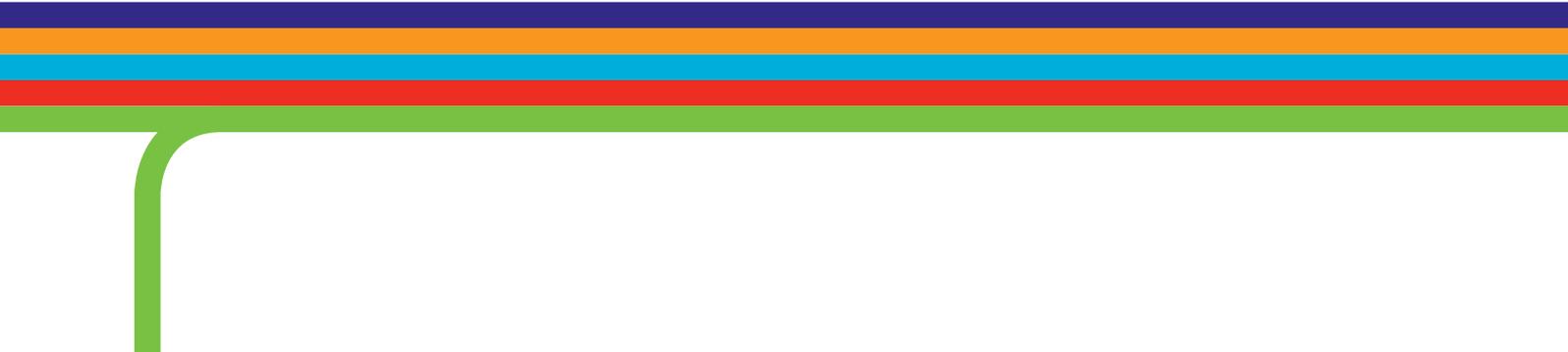
Other useful tools and techniques that may help you

[Brainstorming](#)

[Wish for the seemingly impossible](#)

[Simple rules](#)

[Process mapping](#)



7

7.4 Fresh eyes

Purpose

We instinctively view situations from our own personal perspective. However, looking at things in different ways can help you make new connections and lateral leaps. A fresh pair of eyes brings a new perspective to a situation when you may believe that you have exhausted all the options. The fresh eyes tool is based on these principles; it seeks to generate new ideas by anticipating how others might view a situation.

When to use it

If you feel that something just isn't working, you could try the fresh eyes approach. A different perspective or a fresh attitude can generate a range of ideas for solving a long term problem that has been baffling you and your team.

How to use it

Step one

Define the problem or issue.

Step two

Randomly select alternative viewpoints and predict how people might respond to the following questions:

- What would be important to them here?
- What aspect of the topic would they focus on?
- What ideas and approaches might they have?

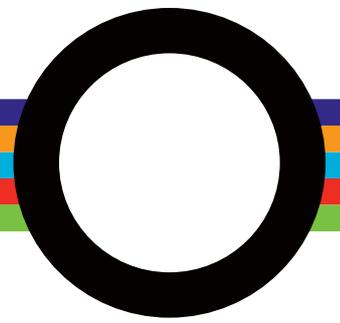
Viewpoints could include people from all walks of life: politicians, parents, comedians, children, retired people, teachers etc.

Step three

Reflect on the possible responses and ask yourself and your colleagues if any of these ideas would work in healthcare?

Ask 'why?' five times

- Why do we have to come to this place?
- Why do we have to wait?
- Why do we have to have this done?
- Why do we need to see lots of different people?
- Why do we have to see this person again?



Tips

The whole process may only take an hour of your time: 30-40 minutes to gather all the ideas and 20 minutes to decide what to do next. You should aim to use at least four to five different perspectives and record the combined results so that you can review the ideas later.

It will also help if you are able to give lots of examples from healthcare so people can see how the tool is connected and applied, such as:

- Lean techniques have come from the production industry.
- Luton and Dunstable Hospital has installed an idea capture scheme that British Telecom first used.
- Hotels provide a good pair of fresh eyes for bed management.
- McDonalds drive through provided inspiration for a flu jab drive through and a pharmacy drive through in the US. The pharmacy drive through is now coming to the UK.

The list of perspectives can be added to, changed or modified. You could set the group a warm up task of identifying a list of different job roles and then use these in the session. Try not to censor the choice of perspectives, some will work better than others but all are valid. Even if you can't see an immediate connection, others probably will.

When you have identified some of the challenges, you can also use the [simple rules](#) tool to help make the changes.

Examples

1. John is once again waiting for 3–4 hours in the orthopaedic follow up clinic. He thinks he should have an x-ray but no one has given him a form. Last time he waited to see the doctor, who then wrote the form for the x-ray, after which he had to queue again to see the doctor. John can now book his outpatient appointment, but no matter what is done, waiting times always seem to be the same.

Look at this issue through the eyes of a child, who might ask:

- Why do we have to come to this place?
- Why do we have to wait?
- Why do we have to have the test?
- Why do we have to see the doctor again?

By looking at this issue through fresh eyes, we might ask 'How would a supermarket manager reduce waiting at checkouts during peak times?' Subsequently, we might think of the following approaches:

- Encourage internet shopping with home delivery.
- Have flexible opening times.
- Open smaller stores in office districts so that people can drop in on their way home from work.

This encourages us to make lateral connections we might not otherwise have made. In the healthcare context we could consider:

- Does all follow up have to be face to face or could we telephone patients?
- Can we run follow up clinics at different times to reduce demand?
- Can we form partnerships or agree protocols with our local GP practices to assess the viability of patients being followed up elsewhere?
- Can we plan the process so that it runs more smoothly?

2. Professor Elliot connected car racing to heart surgery and used his learning from observing a Formula One pit stop to improve the transfer processes at the end of heart surgery.

What next?

- Review all the ideas – try using [Six Thinking Hats®](#) as a refining tool.
- Decide what can be realistically tested.
- Run several small scale tests with volunteers ([PDSA](#)).
- Share the findings.
- Implement the best ideas.

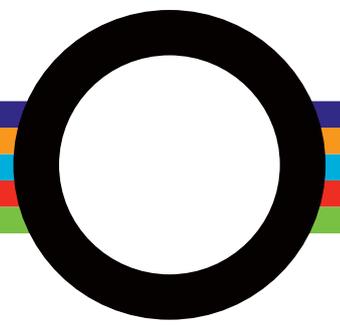
Other useful tools and techniques that can help you

[Brainstorming](#)

[Simple rules](#)

[Thinking creatively – an overview](#)

[The Productive Ward – www.institute.nhs.uk/productives](http://www.institute.nhs.uk/productives)



Additional resources

Books

Creativity, Innovation and Quality, P. Plsek, 1997 (ASQ Quality Press)

What If: How to Start a Creative Revolution, D. Allen, M. Kingdon, K. Murrin, D. Rudkin, 1999 (Capstone Press)

Websites

www.institute.nhs.uk – for the *Thinking Differently Resource Guide and Commissioning to Make a Bigger Difference*

Background

This approach features regularly in literature on creativity under a number of different names such as 'other people's views', 'freshness' and 'river jumping'.



7.5 Wish for the seemingly impossible

Purpose

This tool helps you identify what the very best system of care could look like. It encourages you to look beyond usual thinking and aim for what people really wish for from the health system.

Instead of focusing on what we can't do, we sometimes need to imagine what the very best health service could be like. In 2005, the then Secretary of State for Health urged the NHS to ask, 'How can we make our patients' and users' experiences better? How would it feel if it was me or my elderly mum?' This tool helps you to answer those questions.

When to use it

This is a good tool to use if you are struggling to come up with ideas for new ways of doing things, or if your improvements are often blocked by obstacles. Consider what could help to make the system great in terms of reducing waits and delays: wish for the ideal pathway of care and then work towards making it happen.

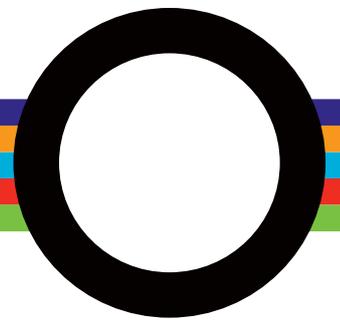
How to use it

Think about the whole patient journey of care (you can use [process mapping](#) to illustrate this). At each stage, think about how you would want that service to work if you or your elderly mum were the user. On the process map, draw speech bubbles for each wish. Be bold with these wishes, after all you are aiming to provide the best care ever!

For each wish, think about how you and your team could make it happen and then develop a plan to do just that. As you are doing this, instinctively you will say, 'That's impossible!' for some of the listed wishes. When this happens, go to the [that's impossible](#) or [simple rules](#) tools.

Examples

In Kettering Hospital, patients are able to go directly from the optometrist to day surgery for cataract removal – without another outpatient appointment. This illustrates how we can think about providing the level of service that previously we might only have wished for.



What next?

- Review all the ideas. [The Six Thinking Hats®](#) tool can be used to get down to the final few ideas.
- See what can be realistically tested.
- Run several small scale tests with volunteers – [PDSA](#).
- Share the findings. Consider using [stakeholder analysis](#) and [communication matrix](#).
- Implement the best ideas.

Other useful tools and techniques that can help you

[Brainstorming](#)

[That's impossible!](#)

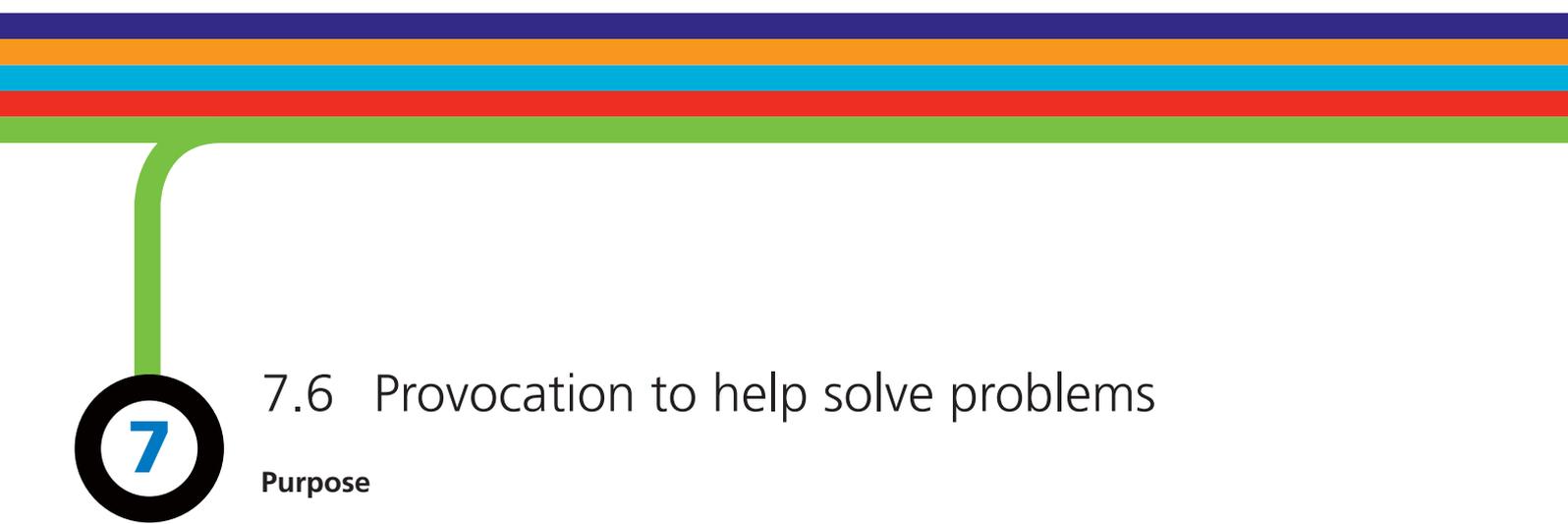
[Simple rules](#)

[Process mapping](#)

Additional resources

Books

Creativity, Innovation and Quality, Paul Plsek, 1997 (ASQ Quality Press)



7

7.6 Provocation to help solve problems

Purpose

Provocations are ideas or wild scenarios that are offbeat, but may act as catalysts to help you make an intuitive leap to a really good idea. This tool can help you unlock thinking and identify new ideas for any situation where you perceive a need for an additional resource. They are particularly useful if someone believes they can only achieve an improvement by having more of something: beds, doctors, nurses, cleaners, radiographers, x-ray machines and so on.

In his 1983 book *A Whack on the Side of the Head*, Roger von Oech suggests that if you begin with an outrageous thought, you will come up with more innovative concepts and ideas.

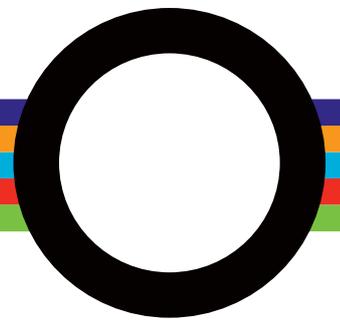
Paul Plsek believes that there are five reasons why organisations should be concerned with creativity and innovation. They will all have an impact on making improvements and streamlining your services.

1. Superior long term financial performance is associated with innovation.
2. Customers i.e. patients and commissioners are increasingly demanding new ways of doing things.
3. Competitors are getting better at copying past innovations.
4. New technologies enable innovation.
5. What used to work doesn't any more.

When to use it

You should use this tool when you have already identified and fixed the easy things, but you still need to improve and fine tune elements of the patient journey. To do this, it helps if you see things with new eyes, gathering different perspectives to tease out the alternative ways of getting things done.

It is also a useful tool to use when you feel a group is stuck or is simply coming up with variations on the same old themes. Whenever you notice that current thinking seems to depend too heavily on certain resources or assets in the system, create an outrageous scenario removing the resource that everything is dependent upon.



How to use it

Step one

State an extreme or outrageous scenario that would necessitate completely redefining how you approach an issue, using the sequence of attention and escape (see [simple rules](#)).

Step two

Select the simple rule that seems to be central to the way people currently think about the issue. For example, the clinician needs to see and report on all the tests in a separate session.

Step three

Suddenly eliminate or drastically modify these elements in a scenario that describes a new situation and makes it seem real. You could pass a new law to make the current simple rule illegal, invent a mysterious virus or discover an environmental hazard that forces facilities to close.

Now, use your imagination to create an idea and ask how you would redesign the process if it were true. For example, the status of every test is shown on a big board (while maintaining confidentiality) where everyone can see. How would we redesign the process if that were the case?

State what you want the thinking to focus on in the new scenario: think creatively about the current process and identify elements of the system that are central to the issue.

Now, write a scenario and include a statement of focus.

1. For example, a mysterious virus has attacked all secretarial staff with responsibility for typing up diagnostics results. Can we design and direct at least eight alternative ways of reporting the results?
2. An inspection agency has noted the presence of a mysterious chemical in all non patient areas of radiology: only the actual diagnostic rooms can be used. How can you rearrange services so that you have a fully functioning system providing both tests and results?
3. The Government has issued a new policy, effective immediately. It states that no one can stay in a hospital bed longer than 12 hours while waiting for diagnostic tests. You are the director responsible for all diagnostics and your colleagues are all asking you for answers. What will you do?

Try to come up with lots of ideas for each of the outrageous scenarios by using the rules of idea generation.

Tips

- Have fun with this tool, it is meant to be playful and tongue-in-cheek. Remind your group that this is play with a purpose. The goal is to explore the outrageous suggestion or scenario, but to come back to reality with some new ideas.
- Keep in mind the sequence escape, attention, movement.
- You can do a provocation spontaneously: this adds to the climate of purposeful play and free thinking. Either suggest something off the top of your head, or ask the group for some really far out ideas - then just go with it as described.
- You can also prepare provocations in advance. Think through a list of things in the system that people believe are central to. Take time to carefully craft the statement of focus to avoid making the new approach too obvious. Use several of these provocations to make sure that you aren't just substituting one taken for granted resource for another.
- When using provocations, be prepared for initial incredulity. Stick with it; insist that the doubters deal with it and point out that this reaction is exactly what many people experience in times of crisis, but then they have to get on with it and do something.

What next?

Six Thinking Hats® will help refine ideas, which you can then test out using [plan, do, study, act \(PDSA\)](#).

Other useful tools and techniques that may help you

[Brainstorming](#)

[Fresh eyes](#)

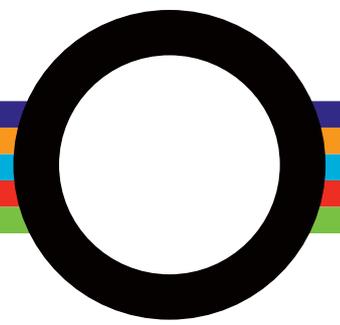
[Wish for the seemingly impossible](#)

[Process mapping](#)

[Communication matrix](#)

[Clinical engagement](#)

[Stakeholder analysis](#)



Additional resources

Books

Creativity, Innovation and Quality, P. Plsek, 1997 (ASQ Quality Press)

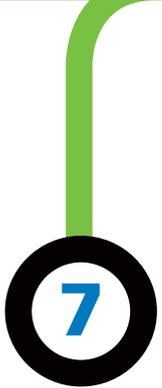
A Whack on the Side of the Head, R. von Oech, 1983

Websites

www.institute.nhs.uk/thinkingdifferently

Background

This technique was identified by Roger von Oech in his book *A Whack on the Side of the Head* and within core text from Edward de Bono as a good way to unlock thinking.



7

7.7 Bullet proofing

Purpose

To achieve service improvement, organisations and departments will need to work together. However, if you change part of a system, this will have a knock-on effect elsewhere. Bullet proofing is a way of preparing for potential problems so you can manage them more effectively - or even avoid them altogether.

It enables you to identify and plan for potential obstacles by asking questions such as:

- What could possibly go wrong?
- What are some of the difficulties that could occur?
- What is the worst imaginable thing that could occur?
- What negative effect could this project or change have on another team's work?

When to use it

If you are planning a change project or improvement, you need to plan and prepare for the things that could go wrong. Use this tool to do the groundwork at the start of a project. It will save time later on and your changes will be more likely to succeed.

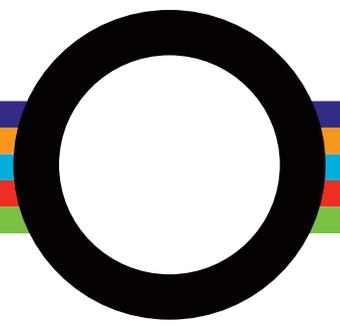
How to use it

Step one

Use bullet proofing to help shape the project then use it when key decisions need to be made – i.e. deciding on the next step, identifying changes and how best to go about them.

Step two

Consider who should be involved. The project lead / manager can use bullet proofing with the project team or with a group of key stakeholders.



Step three

Start by brainstorming. What might happen? What could go wrong? What difficulties could occur? Identify areas in your plan of action that could potentially cause problems. Then insert them into a table showing how likely the event is to occur and how serious it would be.

		How likely is it to occur?	
		Unlikely	Highly likely
If it did occur it would be:	Major problem		<i>Most serious</i>
	Minor problem	<i>Least serious</i>	

Step four

Analyse if there are significant numbers of major problems that are very likely to happen. You may need to prioritise and adapt your focus accordingly.

What next?

Your next steps will depend on the potential problems that you have identified. If you are involved in a big project, you may wish to incorporate your strategies for tackling likely and serious problems into a project plan so you can monitor progress. There are other creativity tools that can help you to come up with ways to overcome the problems identified.

If you anticipate the improvement will cause a negative or positive impact on another team, it's best to talk to them to engage them with what you are doing. It is worth considering whether you need [commitment](#), [enrolment and compliance](#) from particular colleagues to help you prioritise your engagement efforts.

Additional resources

Books

101 Creative Problem Solving Techniques: the Handbook of New Ideas for Business, J.M. Higgins (Paperback)

Websites

www.mycoted.com – provides a central repository for further creativity and innovation tools on the internet.

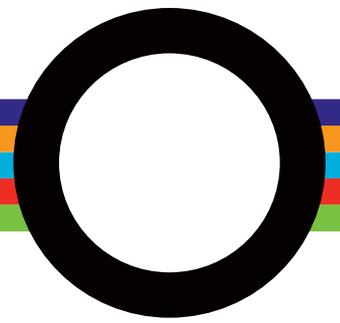


Background

Brainstorming is a process of spontaneous thinking used by an individual or by a group of people to generate numerous alternative ideas while deferring judgment. It was introduced by Alex Osborn in his book *Applied Imagination* (1953) and is the crux of each of the stages of all problem solving methods.

Acknowledgements / sources

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7.8 Simple rules

Purpose

In complex systems such as the health service, simple rules or underlying ways of thinking govern the way we do things. However, these rules can sometimes block improvement and cause unnecessary delays. Sometimes you will need to break the simple rules (barriers to change) in order to move forward and provide more effective care.

When to use it

Your team may come up with solutions to problems or new ways of doing things, only to meet obstacles further down the line. If you find that the rules within your current system are preventing service improvement or necessary change, you can use this tool to help identify the barriers and break them down.

How to use it

Step one

Identify your challenge. This might be a result of [process mapping](#). For example, consider the rule that performing diagnostic tests is more important than reviewing them and reporting the results. This simple rule actually drives several processes and patterns of behaviour throughout the hospital by generating other rules.

- Tests require specific planned and booked time.
- Patients must wait for the test to be reported on.
- Once they have been reported, these results must be officially typed and sent out to the appropriate ward or department.

This can then cause disruption to patient flow if the patient stays in an inpatient bed until the results are ready. It also means that they are unable to book another appointment until the test results come through.

Step two

Identify the current simple rules (attention). There is a variety of ways to do this:

- List them through group discussion.
- Work through a [process mapping](#) task and at each step ask:
 - Why is that step here?
 - What are the underlying mental models (ways of thinking) behind what is going on?
 - What are the unwritten rules we are working to?
- Observe the system to see what actually happens on a daily basis and ask the questions above.
- Tell stories of normal occurrences within the system and ask the questions above.

Step three

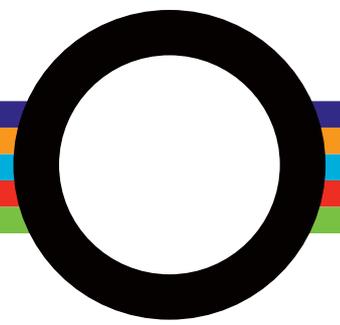
Creatively challenge the simple rules (escape). Propose an alternative simple rule, then purposely break it.

In his 1983 book *A Whack on the Side of the Head*, Roger von Oech suggests that if you begin with an outrageous thought, you can extract useful concepts and ideas. By starting with the outrageous, we are able to suspend judgement and think more freely, making connections or associations between seemingly unrelated pieces of information.

Edward de Bono describes this type of tool as a provocation, something that seems utterly impossible but from which we can create new ideas. (Edward de Bono, *Serious Creativity*, 1993)

Tips

- Give several examples of simple rules in daily life to ensure participants understand the basic concept, e.g. traffic in a city centre. Describing the movement of individual cars would be too complex. We all know that individual drivers are following a few simple rules regarding which side of the road to drive on, what to do when approaching a roundabout, the distance to keep from the car in front and so on.
- A common simple rule in healthcare is that patients must pass through low cost resources before gaining access to high cost resources. Talk this through in terms of who the patient first sees at their GP surgery or A&E. Many A&E departments put a medically trained person closer to the beginning of the process, violating this simple rule.
- Give the group you are working with an example that you think is a simple rule for their topic or system.
- Note that some rules are formal rules in the sense of laws or regulations. You could, however, consider what could be done within the limits of the rule.
- Not all simple rules need to be changed, but it may be useful to think about them.



- Many people find it difficult at first to identify simple rules in their own work practices. We get so used to 'the way we do things around here' that it can be hard to step back and see them more objectively. Try to include people who don't work in the immediate area, such as patients. They are more likely to ask, 'Why do you do it like that?', which helps identify the simple rules and underlying mental models.

Example

Patients with known hypertension needed to make a regular appointment to see the practice nurse for a blood pressure (BP) check. This wasn't always convenient and they sometimes took an appointment slot that others could use. The simple rule was that only a healthcare professional could take and record an accurate BP.

The Milton Abbas surgery in Dorset put a static automatic blood pressure machine in the waiting room. Patients could pop in at their convenience, take their BP and take the printout to be entered into their clinical record.

What next?

- Review all the ideas. [Six Thinking Hats®](#) can help you get down to the final few ideas.
- See what can be realistically tested.
- Run several small scale tests with volunteers (see [PDSA](#)).
- Consider measuring the benefits now so you can communicate what you have done with strong evidence (see [methodology for measuring benefits](#)).
- Share the findings using communication tools such as the [communication matrix](#), [clinical engagement](#) and [stakeholder analysis](#).

Other useful tools and techniques that can help you

[Thinking creatively – an overview](#)

[Brainstorming](#)

[Fresh eyes](#)

[Wish for the seemingly impossible](#)

Tools that are useful for next steps

[Process mapping](#)



Additional resources

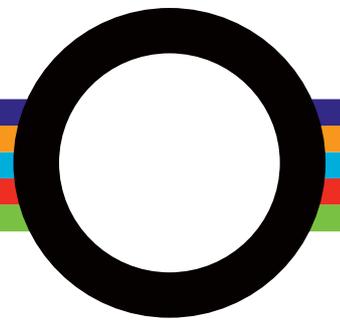
Books

Creativity, Innovation and Quality, P Plsek, 1997 (ASQ Quality Press)

Websites

www.institute.nhs.uk – for the *Thinking Differently Resource Guide* and *Commissioning to Make a Bigger Difference*

www.iom.edu – the Institute of Medicine based in the USA describes the future healthcare system as a transition from one set of simple rules to another



Human dimensions of change

8

Human dimensions of change – an overview

Purpose

Carrying out service improvement means doing something differently – which inevitably brings change. The uncertainty around transition often produces emotional and creative tensions within people. Creative tensions are those focused around having to deliver the service today and do the work to redesign the processes for tomorrow. Emotional tensions are those involved with the anxiety that improvement (change) can bring.

Understanding how to manage these emotional tensions – the human dimensions of change - is essential if you are to deliver successful service improvement. It is these tensions that all too often undermine improvement efforts and their full implementation.

The set of tools contained in this guide are designed to help you understand the human dimensions of change and manage successful transition.

When to use it

These tools can be used any time you are making improvements and therefore, changes, to services. If people feel included, listened to and involved in owning, shaping and implementing the improvement, the emotional transition will be smoother and successful implementation will be more likely.

How to use it

The specific details for each of the tools and techniques can be found in the relevant sub sections:

- 8.1 [Commitment, enrolment and compliance](#)
- 8.2 [Discomfort zone](#)
- 8.3 [Empowerment](#)
- 8.4 [How to understand differences between individuals](#)
- 8.5 [Human barriers to change](#)
- 8.6 [Managing conflict](#)
- 8.7 [Managing stress](#)
- 8.8 [Resistance – addressing uncertainty](#)
- 8.9 [Resistance – understanding it](#)
- 8.10 [Resistance – working with it](#)
- 8.11 [Listening – importance of this skill](#)

Additional resources

Managing Transitions: Making the Most of Change, W. Bridges (Perseus books, US)



8

8.1 Commitment, enrolment and compliance

Purpose

In an ideal world, everyone on your team would be 100 per cent committed to an improvement or change project. However, the reality is that staff may range from fully committed to non compliant - and everywhere in between.

The key is to identify what level of support you need from each of your stakeholders, so that you know where to focus your drive for commitment. Using the commitment, enrolment and compliance tool means you won't waste time trying to persuade everybody to commit to an improvement project when it isn't necessary. Working through this process may help you find out which things will really make a difference to your project, as well as identifying allies who may be able to offer valuable support.

When to use it

This tool is useful when you are starting out on a change programme, prior to implementation. If you spend a bit of time looking ahead and anticipating the obstacles to change, you can work with, or around some of the barriers – or even change them completely.

However, for this approach to be really effective, you must make sure you act on some of the obstacles you identify.

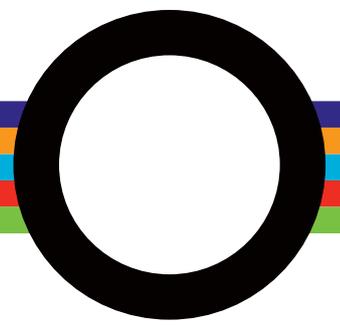
How to use it

Step one - purpose

If you can see a definite need for change, but other people involved don't see the necessity, you may find change difficult to implement. However, you can still carry out change effectively without everyone's consistent support.

Step two - process

There is a difference between commitment, enrolment and compliance. While you may prefer wholehearted commitment from everybody, you don't actually need it for the change to succeed.



Generally, people involved in a change project will position themselves at various points along a continuum in response to proposed action and change, as illustrated below.

Disposition	Response to change	Actions
Commitment	Want change to happen.	Willing to create whatever structures, systems and frameworks are necessary for it to work.
Enrolment	Want change to happen and will devote time and energy to making it happen within given frameworks.	Act within the spirit of the frameworks.
Genuine compliance	See virtue in what is proposed, do what is asked of them and think proactively about what is needed.	Act within the letter of the frameworks.
Formal compliance	Can describe the benefits of what is proposed and are not hostile to them.	They do what they are asked but no more. Stick to the letter of the framework.
Grudging compliance	Do not accept that there are benefits to what is proposed and do not go along with it.	They do enough of what is asked of them not to jeopardise their position. Voice opposition and hopes for failure. Interpret the letter of the framework.
Non compliance	Do not accept that there are benefits and have nothing to lose by opposing the proposition.	Will not do what is asked of them. Work outside the framework.
Apathy	Neither in support of, nor in opposition to the proposal - just serving time.	Don't care about the framework.

You are more likely to accomplish change if you analyse what level of support you need from each of the participants and then direct your energy towards achieving it, rather than trying to persuade everybody to commit.

Step three - complete a stakeholder analysis

Identify the key stakeholders and their likely response to the changes you are proposing. You then need to identify actions that may move each group along the continuum to a more positive mindset.

Prepare a table with these headings:

Stakeholders	Likely disposition	Actions
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What next?

A further [stakeholder analysis](#) will help you identify who you need to consider involving in order to establish the level of support you require.

Force field analysis (see www.institute.nhs.uk/qualitytools) identifies the factors for and against change. Using these two approaches together may help you prioritise the key people to involve and how they feel about your project or change. This approach is quick and easy to try out and is likely to save you time in the long run.

The [clinical engagement](#) tool suggests how you can gain the disposition (commitment and enrolment) you need from clinical colleagues.

Additional resources

Books

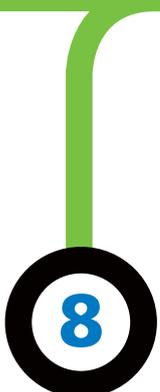
The Fifth Discipline: The Art and Practice of Learning Organisations, P. Senge, 1990 (Random House, London)

Background

In *The Fifth Discipline*, Senge writes of the difference between commitment, enrolment and compliance, suggesting that while it is more agreeable (and reassuring) to have considerable commitment, it isn't ultimately necessary.

Acknowledgements

Effecting Change in Higher Education, University of Bedfordshire



8

8.2 Discomfort zone

Purpose

Change can provoke a range of reactions in people, from anger through to fear and panic. This tool can help you understand and respond to how people feel when faced with organisational change. As an improvement leader, you are aiming to help colleagues out of their comfort zone (but not into a panic zone) by encouraging them into the 'discomfort zone'. Here, people are most likely to change and learn how to do things differently.

When to use it

In order to achieve improved processes and systems, the way you and your team work will need to change. Using the discomfort zone tool will help you to work more effectively with colleagues and staff when you need to appreciate their perspectives on an improvement project.

How to use it

We have all experienced change situations where we have gone from a feeling of comfortable stability to a feeling of panic. If you are involved in improvement, try to remember when it happened to you and understand those feelings.

Many people are happy to stay in the comfort zone: it may be a way of thinking or working, or a job that someone has been doing for a long time. In the comfort zone:

- Things feel familiar and certain.
- The work is controllable and predictable.
- People feel comfortable and competent.
- There is no threat to self esteem or identity.
- There is a sense of belonging.

However, in the comfort zone, people generally don't need to learn new things and therefore don't change.

The panic zone is the place many people are forced into when confronted with a change they do not agree with. Here they will most likely feel:

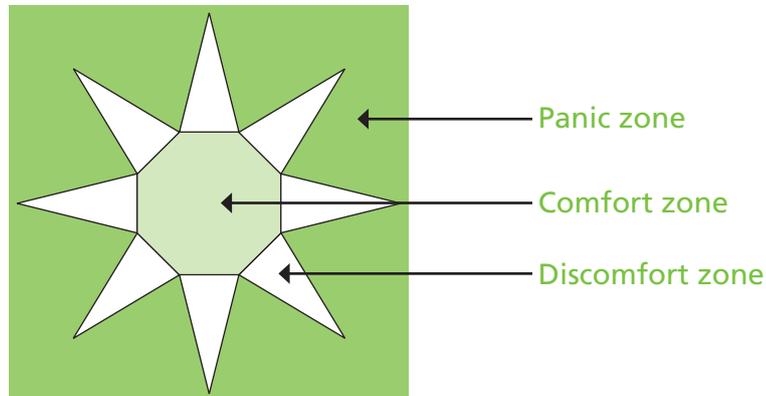
- Stress, worry and fear.
- Anger, irritation and annoyance.
- Sadness, hopelessness and apathy.
- Guilt and shame.
- Inadequacy and frustration.
- Resistance.

Here, people freeze: they certainly don't change and they won't learn.

Comfort zone – people stay here, don't change and don't learn.

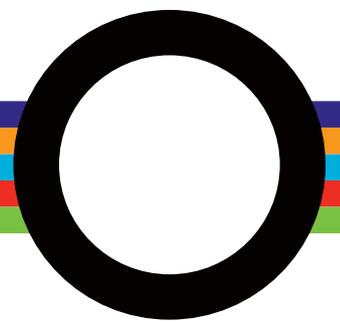
Discomfort zone – people are uncertain, but most likely to change and most likely to learn.

Panic zone – people freeze, will not change and will not learn.



To encourage people to leave their comfort zone, you need to help them feel safe. You can do this by creating the right environment and culture. This will include ensuring there is no blame.

- Develop a culture of mutual support and respect.
- Ask people to question the current situation and see it from another point of view, such as other members of staff (see [staff perceptions](#)) or patients and their carers (see [patient perspectives](#)).



Other methods to help people feel safe include:

- Creating a compelling and positive vision of how things could be.
- Providing access to appropriate training and positive role models.
- Providing coaches, feedback and support groups.
- Ensuring systems and structures are consistent.

Examples

A district general hospital developed the role of perioperative specialist practitioner (PSP). PSPs are trained to carry out clinical tasks such as venepuncture, electrocardiographs and consultations - tasks that, up until that point, were only carried out by consultants at the trust. In order to practise at that level, the PSP and the consultant drew up new protocols to enable the PSP to carry out several tasks.

Each week, the PSP and consultant met to discuss how the role was going and the effectiveness of the protocols. The PSP commented that '...taking on a new role is always a challenge, but to take on a role that you have to create could potentially be very scary and easily put you into your panic zone. The consultant I worked with was very supportive. I looked forward to our weekly meetings and I knew I could ask any questions I wanted without feeling they were stupid or insignificant. I also knew the consultant valued my input and that we respected each other. I knew I was in my discomfort zone, but it felt safe.'

What next?

Understanding the discomfort zone will make it easier for you to implement change with your team's support and co-operation. Further guidance on the human dimensions of change can be found in the tools [resistance – understanding it](#), [resistance – working with it](#) and [empowerment](#).

Good communication at this stage is essential, so consider looking at [stakeholder analysis](#) and [clinical engagement](#).

Additional resources

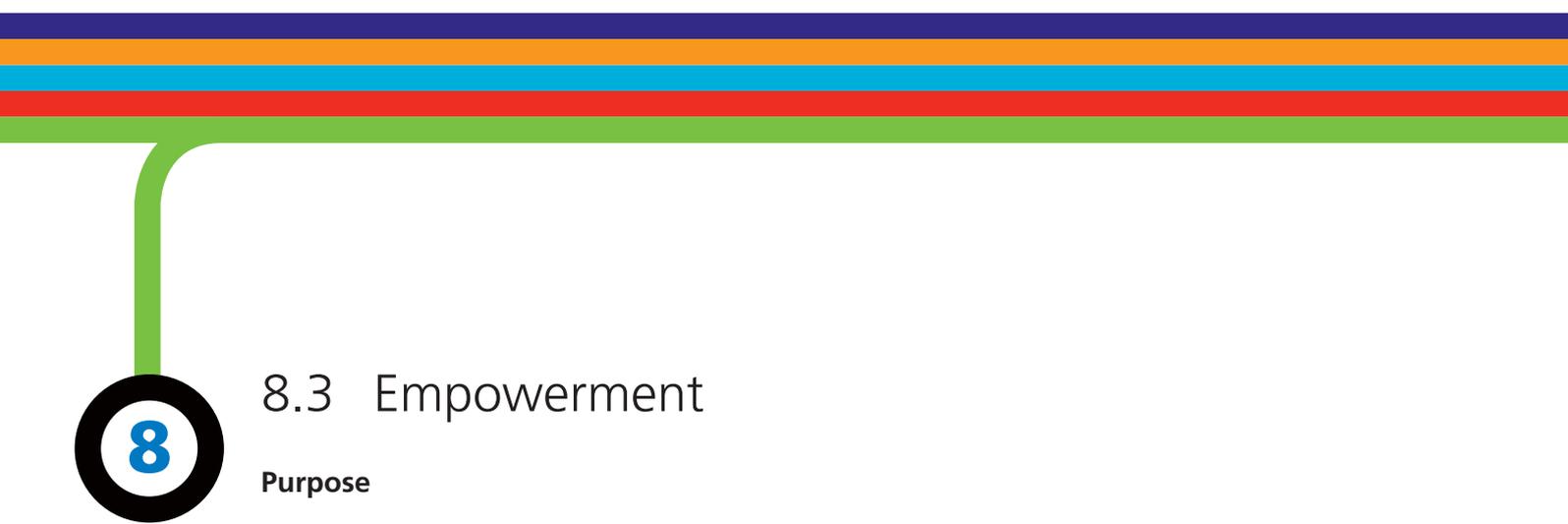
Books

Improvement Leaders' Guide: Building and Nurturing an Improvement Culture - Personal and Organisational Development, NHS Institute for Innovation and Improvement

The Dance of Change: Sustaining Momentum in a Learning Organisation, P. Senge, 2000

Background

This established organisational development theory was used by the NHS Modernisation Agency to improve the understanding of change.



8

8.3 Empowerment

Purpose

Organisational change can substantially impact on team members' sense of freedom and ability to contribute. The empowerment tool can help you become more aware of ways of promoting empowerment and how these methods can be integrated into the change process.

When your staff feel empowered, they feel they have made a real contribution and are more likely to support change and improvement. Using this tool will help you empower the individuals in your team.

When to use it

The delivery of improvement work will involve doing many things differently. You should use this tool when you feel that you need to empower staff during the change process. This will in turn, improve the probability of success due to increased buy-in from staff.

How to use it

Consider the type and extent of empowerment you want to encourage according to the nature of your organisation, its culture and the personalities and roles of the individuals involved.

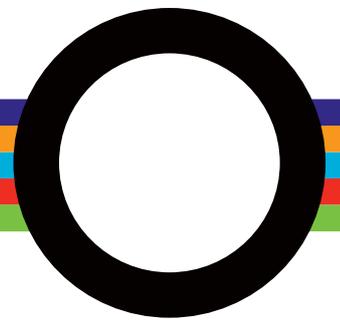
There are three key areas to help you decide which empowerment approach to take.

Area one - six basic motivators

Most people want a few basic things from their work:

- meaning
- results
- challenge and learning opportunities
- respect and recognition
- control (over your own part of the work)
- affiliation (being part of a bigger team).

In his book *Beyond Resistance: Caught in the Middle*, Rick Maurer argues that these six items form the foundation of all good empowerment efforts. Fortunately, with regard to motivation, what's good for the individual is also good for the organisation.



Area two - vision and direction

Next, leaders must know why they want empowerment. Ask yourself:

- What do you want to achieve?
- What would empowerment look like here?
- How committed are you to making empowerment a reality?

Area three - examine corporate actions

Lastly, organisations should consider their corporate actions. In particular, they should check whether there is any conflict in the aims of current policies and strategies.

Useful questions for you to begin a conversation about empowerment include:

- Do we agree that empowerment is a key ingredient in our continued success? If so, why? If not, why not?
- Does our performance review process support or hinder participation and commitment of all staff?
- Do we compensate and promote those who embody the values we hold?
- Do our communication channels promote or inhibit free exchange of information and ideas between individuals and departments?
- What informal messages do people receive about our culture? What impact does this have on productivity and morale?
- What do we suppose employees say about our organisation when we're not in the room?
- Once people are trained and have proven their competency, do we have the courage to trust them?
- What happens when someone takes an educated risk and fails?

Examples

Organisations such as Corning get everyone (or at least a representative sample from all levels of the organisation) in a room to reengineer their portion of the company. By involving those who will be implementing the changes in the planning process, resistance decreases and commitment increases, whilst planning and implementation time are compressed. In addition, the resulting plan is often far better than what outside consultants or a small team could have created. This illustrates the effective use of empowerment and good practice in [process mapping](#).

What next?

You may want to consider aligning employee policies (e.g. appraisal) with management requirements. For example, if people are told to work collaboratively but their performance reviews pit them against each other in forced appraisal ranking, people will protect their own self interests. If you encourage cross-functional teamwork, but performance reviews only acknowledge work accomplished within a department, interdepartmental co-operation will suffer.



Making sure unwritten rules are fair and consistent helps to provide a level playing field for staff, promoting a healthy working environment in which empowerment can thrive.

Many organisations operate in hierarchies, almost by default: people above you make decisions and people below you carry them out. As this model works against initiative and empowerment, you may want to consider implementing a flatter and less hierarchical structure.

Other tools and techniques that may help you:

[Staff perceptions](#)

[Commitment, enrolment and compliance](#)

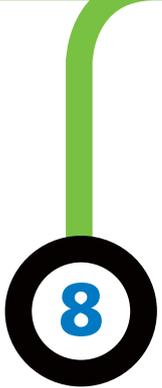
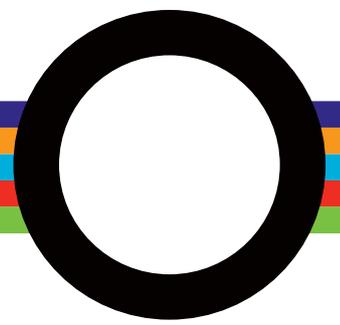
Additional resources

Websites

<http://www.beyondresistance.com>

Acknowledgements

Beyond Resistance: Caught in the Middle, Rick Maurer and Associates, 2006



8

8.4 How to understand differences between individuals

Purpose

Understanding how individuals in your team react to different situations can help you to communicate more effectively with them. If you try to communicate on their wavelength, the chance of your message being heard and understood is greatly increased. This tool can help you find a way of communicating with an individual in the style that best suits them. This makes it more likely that they will understand and support any changes you want to make.

When to use it

If people are unhappy with their situation, they may resist the changes aimed at making improvement. You can use this approach when you need to anticipate an individual's likely reaction so that you are better able to communicate with them. This improves the probability of a successful change project.

How to use it

Consider the individuals you will be working with. Try to understand how they may react, how best to communicate with them and how to work in ways that best suit them as individuals. Remember to see the person, not a name badge, role or title.

Step one - identifying personal styles

Identifying personal styles is the key to understanding others. People tend to relate to the world around them in a variety of ways. Merrill and Reid describe four different styles: analyst, amiable, expressive and driver.

Analyst	Amiable	Expressive	Driver
Analytical	Patient	Verbal	Action orientated
Controlled	Loyal	Motivating	Decisive
Orderly	Sympathetic	Enthusiastic	Problem solver
Precise	Team person	Gregarious	Direct
Disciplined	Relaxed	Convincing	Assertive
Deliberate	Mature	Impulsive	Demanding
Cautious	Supportive	Generous	Risk taker
Diplomatic	Stable	Influential	Forceful
Accurate	Considerate	Charming	Competitive
Conscientious	Empathetic	Confident	Independent
Fact finder	Persevering	Inspiring	Determined
Systematic	Trusting	Dramatic	Results-orientated
Logical	Congenial	Optimistic	
Conventional		Animated	

(Source: Personal Styles and Effective Performance: Make Your Style Work for You, D.W. Merrill and R.H. Reid, 1999 (CRC Press, London))

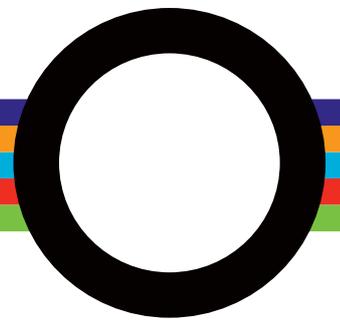
While an individual may dip in and out of all four approaches, most of us tend to favour one approach more than the other three. We tend to have a predominant style and a least used style.

The predominant approach can be described by:

- What the individual finds of interest.
- What the individual feels is important.
- Their behaviour or actions.

Step two - matching wavelengths

Once you know which style a person favours, you can modify how you communicate with them. This greatly improves the chance of your message being heard and understood, so try changing your wavelength to fit the other person. Remember that people will not always rigidly conform to these descriptions of personal style. However, the more a person follows a pattern, the more likely adopting a communication style appropriate to that pattern will influence them.



Analysts – like data (the facts and figures).

Amiables – consider feelings and the people side of change.

Expressives – like the big picture, the vision.

Drivers – like action and results.

Examples

This model was introduced to a group of improvement leaders. One project manager had no difficulty in recognising her style as a driver. She also recognised the style of someone she was having difficulty with as an analyst. When she returned to work, she changed the way she dealt with this person, giving them more written facts and figures and time to think through the information. She reported back a few weeks later that the 'difficult' person was totally on board with the improvements and a real supporter.

What next?

If you are still having difficulties with communicating successfully, think about what the receiver views as important, what some of their interests are and how they tend to behave. With this picture in mind, you can then adapt your message to fit the receiver's preferred type of delivery.

Other useful tools and techniques that may help you

[Clinical engagement](#)

[Staff perceptions](#)

Additional resources

Websites

www.institute.nhs.uk – for the *Improvement Leaders' Guides*

8.5 Human barriers to change

Purpose

Improvement necessitates change, which inevitably creates varying degrees of resistance. To prepare for this, you need to generate enthusiasm among your colleagues and win over people who oppose the change.

The human barriers to change tool helps you to consider personal perspectives on change and prepare responses to the issues that might arise. If people feel their concerns have been recognised and understood, they will be more supportive of the change or improvement in the long term.

When to use it

Use this tool when starting out on an improvement journey. When you first introduce proposals for change, try testing out the ideas with staff who are prepared to act as sceptics and as devil's advocate. This can help prepare you for opposition in the future. For this to work effectively however, your staff need a safe forum in which to voice their concerns and opinions.

How to use it

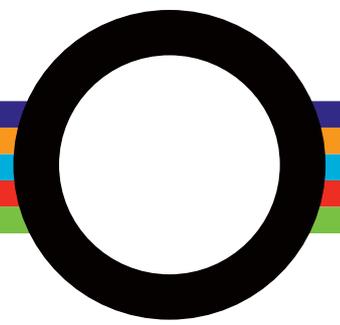
Step one

Start by selecting a 'safe' group of staff who will be involved in the change. They need to be supporters who are able to stand back from the proposals and consider them from the sceptics' point of view. Ask them to be a critical friend of the proposal. This gives them the security to explore all different angles and express their ideas honestly.

Step two

Ask the group to identify any potential objections to the change that could be raised. You may find [brainstorming](#) and [bullet proofing](#) useful strategies at this stage. Rank the points raised in order of seriousness, which you could do in a table like this:

		How likely is it to occur?	
		Unlikely	Highly likely
If it did occur it would be:	Major objection		<i>Most serious</i>
	Minor objection	<i>Least serious</i>	



Select the most serious objections and discuss them using the following questions:

- Why is this considered a barrier?
- What impact would it have on the change effort?
- What could the group do about it? What would be most effective?
- When should the group do this?
- Who should lead different areas of the project?

Also, try asking people for their instinctive reactions to the proposed change. Change is generally met with enthusiasm when:

- We propose the change or are involved in designing the change.
- We feel that our opinions are heard and contribute to the new reality.
- We benefit from the change or the organisation, patients and wider community benefit from the change.
- We dislike the present status quo.
- We trust / respect / like the person or group proposing the change.
- We can see the big picture and how the change contributes to it.
- We are given support and time to adjust to the changes and aren't expected to change too many things at the same time.
- We understand the reasons for the change.
- We believe the change is important and necessary.

Change is met with confrontation when:

- We are not involved in the change design and we feel that our opinions are not considered.
- We do not see benefits for ourselves, the NHS, the patients or the wider community arising from the change.
- We like the present status quo.
- We do not trust / respect / like the person or group proposing the change.
- We cannot see the big picture and how the change would contribute to it.
- We are not given support and time to adjust to the changes or are expected to change too many things at the same time.
- Change is not carried through properly.
- We do not understand the reasons for the change.
- There is no clarity about the change aims and objectives.
- We believe other things need changing more urgently or that the time isn't right for this particular change.
- The degree of change is too great to be readily assimilated.



What next?

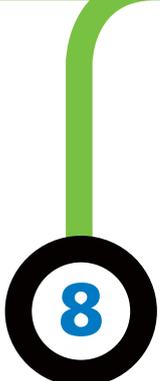
Once you have identified potential barriers, use [bullet proofing](#), [brainstorming](#) and other problem solving tools to help you come up with ways of overcoming the barriers.

You may wish to revise the [scope of your project](#) and how the changes will be implemented. If you have identified groups that will need further consultation, [resistance - addressing uncertainty](#), [resistance – working with it](#) and [listening – importance of this skill](#) may be of use.

Additional resources

Books

Knowledge for Action: Guide to Overcoming Barriers to Organizational Change, C. Argyris
(Jossey-Bass Social & Behavioural Science)



8

8.6 Managing conflict

Purpose

Conflict can be defined as 'behaviour that is intended to obstruct the achievement of another person's goals'. Conflict is also an inevitable part of the change process, so, whilst you can't avoid it, you can learn how to manage it effectively - even transforming it into a positive force for change.

Using this tool will give you effective strategies for managing conflict and help you prevent or resolve attempts to derail the change process. This will, in turn, enable you to gain greater staff consensus on your project.

When to use it

Change provokes a range of emotions in people: many are wary of it or resist it on principle and try to obstruct the process, resulting in conflict. When this occurs, you may need to intervene in the first stages of conflict by preventing, containing or handling such behaviour as early as possible.

How to use it

Conflict ranges from minor misunderstandings to behaviour where each party seeks to destroy the other. Generally, conflicts have two elements:

- the relationship between the people involved and
- the issue that is the basis of the disagreement.

When conflict arises, you need to intervene by preventing, containing or handling it - even if you are involved in the conflict yourself.

Step one

Prevent escalation of conflict by identifying early signs and taking action. Conflict will not resolve itself and so to prevent it escalating, ask yourself the following questions as soon as conflict becomes apparent.

- What type of conflict is it?
 - Hot conflict - each party is keen to meet and thrash things out.
 - Cold conflict - issues are kept quiet and under the surface.
- What are the most important underlying influences at work?
- What is this really all about?
- Where is the conflict going?
- How can I stop it?
- What needs to happen now?

If the conflict gets worse, you will probably need to bring in someone else to help the parties involved develop longer term strategies for resolution.

Step two

Remember that conflicts are more about people than problems, so understand and value the differences between the parties involved - which may include yourself. Contain it by dealing with difficulties and tensions, working to re-establish relationships.

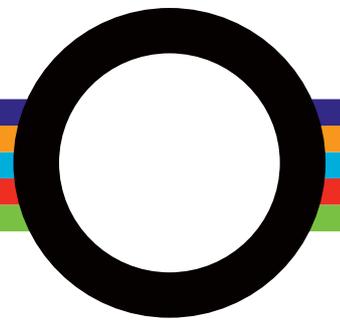
- Recognise your own style with its strengths and limitations.
- Listen and try to understand the other person instead of attributing a motive from your own viewpoint.
- Ask questions to develop your understanding of the other person's goal instead of attributing a motive from your viewpoint.
- Look for a solution that incorporates both goals.

Step three

Handle the conflict by taking positive steps to deal with the issues and then monitor the effects. This checklist may be useful at any stage of conflict resolution.

Do	Don't
<ul style="list-style-type: none">• Ensure the issues are fully outlined.• Acknowledge emotions and different styles.• Make sure you have a comfortable environment for any meeting.• Set a time frame for the discussion.• Establish good rapport.• Use names and, if appropriate, titles throughout.• Work to cool down the debate in a hot conflict.• Convince parties in a cold conflict that something can be done.	<ul style="list-style-type: none">• Conduct your conversation in a public place.• Leave the discussion open – instead create an action plan.• Finish their sentence for them.• Use jargon.• Constantly interrupt.• Do something else whilst trying to listen.• Distort the truth.• Use inappropriate humour

Conflict means different things to different people. This may be due to their personal style or their professional training. Some people enjoy a heated discussion while others find it upsetting or intimidating. Just because someone asks you lots of pointed questions or disagrees with you in a meeting does not mean they are against you or the objectives of the project. It may just be their way of gathering further information to think about later.



Remember that doctors and scientists in general are trained to challenge information, concepts and ideas. They may simply be testing out the validity of the project and your knowledge. Direct questioning does not mean that people are against the proposal.

The main thing is to acknowledge any conflict and not to avoid it. Describe the issues involved, talk about it and work through it.

Examples

There was an agreement to decide a set of referral criteria for patients suspected of having cancer. Each of the consultants involved applied different clinical practice and thresholds for deciding whether or not a patient was high risk. Discussions lasted for several weeks and were characterised by one consultant quoting research findings, only to be challenged by another using anecdotal evidence and a third acting as devil's advocate posing many 'what if?' scenarios.

The improvement project manager managed the situation in a number of ways. These included summarising areas of agreement and bringing examples of criteria set by other hospitals to stimulate discussion and foster an environment of wider collaboration. The team of consultants eventually agreed on a set of criteria and went on to demonstrate their ownership and agreement by collectively defending their decisions at a national conference, in the face of intense questioning from their peers.

When asked about the process, the consultants commented that they had never had such an in depth argument about clinical practice and that they had found it invigorating. They said it had set the tone for frank discussions in other meetings and the conflict had kept them hooked on the project.

What next?

Other useful tools and techniques that may help you:

[Listening – importance of this skill](#)

[Human barriers to change](#)

[Resistance - addressing uncertainty](#)

[Resistance – working with it](#)

Additional resources

Books

Introduction to Psychology – Exploration and Application, D. Coon, 1992 (West Publishing Co. USA)

Websites

www.institute.nhs.uk – for the *Improvement Leaders' Guides*



8

8.7 Managing stress

Purpose

Work-related stress is a major cause of occupational ill health, which can lead to sickness, absence, high staff turnover and poor performance. Change in itself is a stressful process: as an improvement leader or manager, you should aim to minimise avoidable stress during times of organisational change.

The more you are able to minimise any negative impacts arising from change, such as additional stressors at work, the more likely you are to succeed in making the changes you need to bring about. This tool helps you to identify the sources of stress and gives you strategies to reduce them.

When to use it

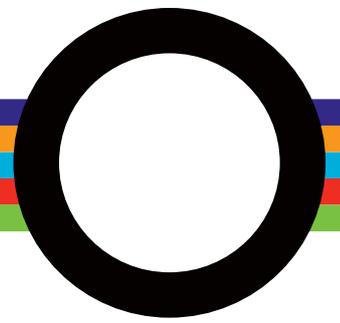
If you are planning a change that you know may be stressful for those involved, use this tool to help you minimise its destructive effects. You need to recognise that different people within your team may have different stressors and will react to its impact in varying ways.

How to use it

Step one - identifying stress

Firstly, you need to be able to recognise the signs of stress. Some of these are:

- Increased irritability
- Increased sensitivity to criticism
- Signs of tension, like nail biting
- Tiredness due to lack of sleep
- Increased use of alcohol or cigarettes
- Loss of concentration
- Absenteeism
- Reduced performance



The nine major causes of stress at work have been identified as:

- Poorly designed / managed workload
- Poorly designed / managed work scheduling
- Poorly designed / managed work design
- Poorly designed / managed physical environment
- Lack of skill discretion
- Lack of decision authority
- Lack of appropriate proactive support
- Lack of appropriate reactive support
- Poorly designed / managed procedures for eliminating damaging conflict at individual / team level (bullying / harassment)

Step two – action

There are many things you can do to reduce stress levels during times of change. Firstly, it is important to acknowledge that the emotions staff are experiencing are normal and that the majority of staff will progress through these stages at a different pace, reacting in different ways.

In order to allay concerns and alleviate stress, you should address people's feelings and fears. One way of doing this is to clarify decisions by providing objective, fact based answers to questions - don't leave questions hanging in the air. Ensure that you communicate with people and listen to their fears, without attaching blame or censure.

If you involve people in the change process, they are more likely to feel included and reassured. It can also be helpful to provide a 'buffer zone' for people to express their feelings and support each other through the changes. Make sure that your team is aware of the institutional policies and support available to them.

Finally, celebrate early success and acknowledge achievement with your team.

Step three – organisational response

Your trust should also play a part in supporting staff during times of stress. They could:

- Undertake surveys or focus groups to investigate stress issues – and take action based on the results - doing nothing after a survey is worse than doing nothing in the first place.
- Celebrate early success and acknowledge achievement.
- Provide training on what's required to cope with the change and also on the topic of change itself (e.g. [managing conflict](#), [managing stress](#)).
- Provide counselling services.
- Provide change management training so people understand the stages of change. Shock, anger, confusion, regret, disbelief are all normal reactions.

What next?

If you are planning to redesign any jobs as part of the change process, (see [role redesign](#)) you should consider these tips - you may even wish to think about redesigning existing jobs to minimise the stressors.

Other useful tools and techniques that may help you:

[Stakeholder analysis](#)

[Bullet proofing](#)

[Listening – importance of this skill](#)

[Sustaining momentum](#)

[Reviving a stalled effort](#)

[Clinical engagement – in an acute setting](#)

[Commitment, enrolment and compliance](#)

[That's impossible!](#)

Additional resources

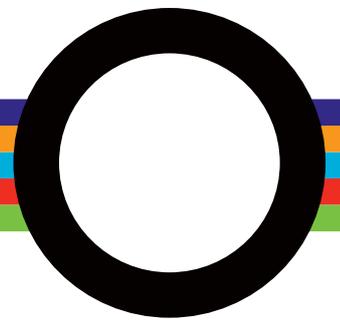
Books

Review of Existing Scientific Knowledge to Underpin Standards of Good Practice for Key Work-related Stressors – Phase 1, J. Rick, L. Thomson, R. Briner, S. O'Regan and K. Daniels, 2002 (Sudbury: HSE Books)

Management Standards and Work-related Stress in the UK: Practical Development (Work and Stress 18 (2), pp 113 – 136) R. Cousins, C.J. Mackay, S.D. Clarke, C. Kelly, P.J. Kelly and R.H. McCaig, 2004

Websites

www.hse.gov.uk/stress/standards/ - for Health and Safety Executive standards for work-related stress



Background

Research on behalf of the Health and Safety Executive (HSE) identified the best available evidence on the ways in which these nine stressors affect individuals at work.

Using this information, the HSE developed management standards to help managers minimise the impact of work-related stress on workplace activities and manage stress at work. The HSE suggest that their standards might even help you improve organisational performance.

Acknowledgements

Effecting Change in the Health and Safety Executive, University of Bedfordshire



8

8.8 Resistance - addressing uncertainty

Purpose

Fear of the unknown stops us venturing into new territory, taking risks and readily accepting ideas for a change. This uncertainty contributes to resistance to a different way of doing things; something that you need to tackle if change is to be successfully implemented for service improvement.

This tool will help you to identify potential fears at individual and team level; it suggests potential responses and coping strategies to help you overcome resistance and bring about change. Addressing uncertainty reduces the stress involved in the change process and also helps you to build staff morale and support for your proposals.

When to use it

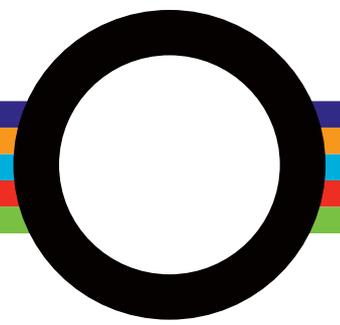
This is an intervention to help you overcome resistance in teams as you begin the change process. It is most likely to be used after you have identified the changes that need to be made, although in some circumstances, you might want to consider working through people's fears before trying to agree on the changes that will need to be made.

How to use it

If resistance is to be confronted, you need to identify the fears that people have and prioritise those which most urgently need to be addressed. Once you know what concerns people have, you can decide on an appropriate strategy for dealing with these concerns.

The more fears you identify, the greater the chance of major resistance to change. Fears can be identified at an individual, team or task level.

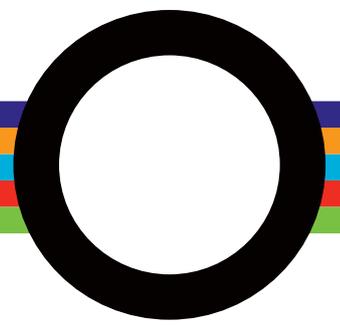
Individual fears should be given priority and treated first, as people's income and security are involved. Even if people are severely affected and negotiation is impossible to conduct, you should treat their fears in a fair manner and with a sense of urgency.



The table below identifies the different types of fear an individual may have and suggests coping strategies and prioritisation.

Fear type	Nagging question	Response	Priority	Coping strategy
Job loss	Will I have a job after the changes?	Clarify if this is the case. Be prepared to answer tough questions.	High Immediate response required.	Competent HR team, devoting time to those affected by the changes. Assistance with finding new job. Counselling. Stress management. Union support.
Degree of change	Will I personally have to change too many things?	Clarify if this is the case. Emphasise usefulness of changes and benefits in the long run.	Medium to high What is expected of each member of staff?	Communications strategy and clarity in promoting changes. Realistic expectations of amount of change at any one time. Provide training.
Salary and contract	Will there be a change to my contract or salary? Will my working hours change?	Clarify if this is a permanent or temporary measure, whether this is an incentive for the changes to be introduced.	Medium to high Contract clarity needs to be observed at all times.	Knowledgeable and supportive HR team.
Perks	Will I lose my parking space? Will there be changes to my pension / holiday entitlement?	Clarify. Justify actions, be prepared to answer tough questions.	Medium to high	Be aware of perks and how staff view them. Look for alternatives.

Fear type	Nagging question	Response	Priority	Coping strategy
Personal status	Will I be gaining or losing status as a result of the changes?	Clarify immediately. Be prepared to answer tough questions.	High	Be honest. Provide personal recognition and support. Identify ways in which status can be enhanced.
Physical environment	Will I have to change ward/ offices/ buildings/ sites?	Clarify at local level if this is a permanent or temporary measure. Are there any incentives for relocation?	Medium to high	Will the new environment be better – if so in what ways? Are there long term advantages? Don't promise what you can't deliver.
Technology	Will I get a new computer, or will I inherit someone else's old machine? Will I have a direct line? Will I be able to cope with the new technology?	Clarify at local level if technology will be affected by the changes.	Low to medium	Deal with uncertainty. Provide training and mentoring where necessary.
Career development	Would the change enhance my opportunities? How would the changes affect my career?	Clarify possibilities for career opportunities.	Medium	Talk 1:1 about longer term possibilities and what needs to be achieved to get there.
Overall personal	What's in it for me? Push or pull?	Clarify issues. Resolve issues or look for alternative solutions.	High	Talk to those most affected and hear their concerns.



Team fears

Managing group fears will involve managing changing relationships and sometimes decision making power (which for those involved will be an individual fear), as well as structural changes in the group composition, status and resources.

Cultural issues, although permeating all categories, will be of paramount importance here. The table below identifies the team level fears and suggests coping strategies.

Fear type	Nagging question	Response	Priority	Coping strategy
Purpose of the team	Are we clear what we are trying to achieve?	Be clear about the new purpose.	High	This requires more than just communication – staff need to work with and explore the proposed new reality.
Change to standards and procedures	Will we be working to different standards?	Clarify if this is the case; justify changes.	High	Immediate uniform response required. Ensure standards and procedures are clear. Communication strategy, backing the business case for change.
Morale and team spirit	Will we get on together?	If values and beliefs are affected at individual level, morale and team spirit might be affected too. Clarification and reassurance is needed.	High	Celebration of success and incentives for the change need to be provided. Away days or similar events thinking about the new future.
Training and development	Will we need to acquire new skills as a result of introducing the changes?	Clarification and training needs analysis to be conducted.	High	Address team needs. Team training can help cement new teams and identify tensions.
Communications within the team and with others	Will we know what's going on?	Identify how issues will be communicated amongst team.	Medium	Provide clear communication structures. Recognise importance of informal as well as formal communication channels. Discuss dissemination plan.

What next?

Depending on how you choose to proceed with the change process, your next step could be to work with your team to identify the changes that need to be made, or to continue with the implementation.

Other useful tools and techniques that may help you are:

[Managing conflict](#)

Additional resources

Journals

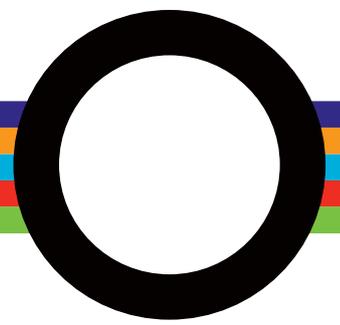
Human Responses to Change (Futures, Vol.31 (6), pp. 609-616) D. Williams, 1999

Websites

www.eoslifework.co.uk/futures.htm - for more information on human responses to change

Acknowledgements

Effecting Change in Higher Education, University of Bedfordshire



8

8.9 Resistance - understanding it

Purpose

Resistance is one of the main factors preventing organisational change. This tool helps you to recognise resistance: to understand it and develop strategies for managing it effectively. Whilst resistance is present amongst your team, changes and service improvements are unlikely to be wholly successful. If you can transform resistance into commitment, your changes and improvements are more likely to succeed. This information will help you start that process.

When to use it

Change inevitably brings with it varying levels of resistance; but if you are to make service improvement, change is a necessity. Use the understanding resistance tool at the start of a project when you anticipate resistance to a proposed change.

How to use it

You need to start by understanding the three levels of resistance in more detail as each level needs to be managed differently.

Level one - information based

Information based resistance is based on facts, figures and ideas. It involves thinking, rational action, presentations, diagrams, and logical arguments.

Level one resistance may stem from a lack of information, disagreement with the idea itself, a lack of involvement or simply confusion. To overcome this level of resistance you need to give people more information, more convincing arguments and detailed facts. This is best done through presentations and question and answer sessions.

Level two - physiological and emotional reaction to change

People's response to proposed change is often based on fear: that they will lose face, friends, control or even their jobs. In *The Emotional Brain*, Joseph LeDoux refers to this as 'the fear response'. This means that it is uncontrollable and may be triggered unconsciously.

LeDoux also states that emotions and not intellect are the basic survival mechanism of all living organisms. They warn us of danger and allow us to take action instantly, before our conscious mind even knows what's going on.

Imagine talking to your staff about a proposed restructuring. People ask you level one questions: 'How much will it cost?' 'When will it begin?' 'What's the timeline?' and so on. Then you mention there is a slight possibility that this could result in downsizing. Suddenly, two thirds of your team drop to level two.

At this point, it is a waste of time speaking to the rational mind: your team is now responding from a different part of the brain. When they are working from level two, people perceive the situation as dangerous and prepare for fight or flight – even if they're not aware of it.

To deal with this level of resistance you need to adopt a different strategy. Discuss and fully explore the idea with staff: listening and meaningful dialogue are essential.

Level three - bigger than the current change

This level of resistance is more deeply entrenched – and more difficult to resolve. People are not resisting the idea - they may love it - they are actually resisting you. They may resist because of their history with you, or because of who or what you represent (e.g. the trust management). Some traditional management/employee relationships are level three. In these divisive relationships, no idea is judged on its own merits: the level three relationship almost guarantees that people will oppose your ideas.

Dealing with this level of resistance demands that you begin to rebuild relationships before presenting new ideas. Or, at the very least, your change management strategies must include ways of building bridges while you plan and implement.

What next?

Once you have an understanding of the various levels of resistance, you are in a better position to devise tactics to address it within your organisation. [Resistance – working with it](#) describes how you can do this.

Additional resources

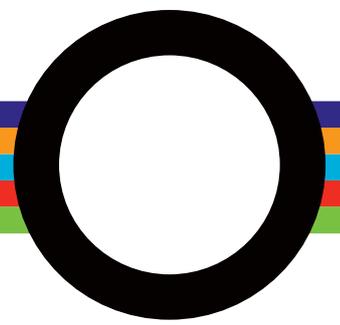
Websites

www.jiscinfonet.ac.uk - for useful, general guidance on resistance to change

www.beyondresistance.com - a resource for leading change without resistance

Acknowledgements

Adapted from Maurer and Associates © 2006, *Beyond Resistance*



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8.10 Resistance - working with it

Purpose

You may have a great idea for change, but all too often that idea is blocked by resistance from key stakeholders. This tool helps you recognise the different levels of resistance and explains how you can overcome this barrier to change.

Resistance itself is not the primary reason why changes fail: it is the reaction to resistance that creates the problem. In other words, if your response is ineffectual or inadequate when people resist a new initiative, this is what will hinder change.

When to use it

You will need to transform resistance into commitment if your planned changes and improvements are to have maximum chance of success. This guide helps you start that process by understanding the causes of resistance and how to manage them.

How to use it

Even the best plans can be derailed. Conditions change due to varying market forces, new directives from headquarters, changes in personnel and so on. When this happens, resistance to change can take over. You may find managing organisational change especially challenging during this stage.

Step one

Spot resistance early and in its many subtle forms. Gather evidence to determine if the potential derailment is caused by technical, financial or human factors - these are the most common sources of resistance to change. If you can identify the source, you should be able to avoid many of the problems that come with change.

Step two

Find ways to discover why things are going off track. If you make incorrect judgements, you risk making people more frustrated or wasting valuable time.

Step three

Identify strategies you can use to turn opposition and reluctance into support.

Step four

When asked why so many major changes in organisations failed, executives said that resistance was the primary reason. Therefore, if you are serious about creating a shift from scepticism to support for change – or if you want to minimise opposition before it occurs – you must understand the nature of resistance.

When dealing with resistance, your strategy must match the level of resistance you are facing.

Level one resistance - is based on facts, figures and ideas. It may stem from a lack of information, disagreement with the idea itself, a lack of involvement or simply confusion.

- **Inform people.** Give people all the information they need through newsletters, presentations, discussions, emails, memos and videos. Ensure that they understand the proposed change, try to see ideas from their perspective and understand how the change will impact on them.
- **Engage and discuss.** As the improvement lead, you need to give people a chance to engage with the information and reflect on what they hear. Give them the opportunity to make a contribution to the idea or to warn of potential pitfalls. In meetings, give people a chance to take you on and argue with you – make sure that you go into these meetings willing to be influenced. After making a presentation to staff, offer them a chance to talk with you and give their opinions. You could also hold town hall meetings with a cross-section of the organisation, including time for people to ask questions and give their input.
- **Reporting back.** Build in ways to report back to people explaining how your thinking has been influenced by what they had to say. You don't need to agree with everything you hear, but you do owe it to people to explain why you chose the course you did.

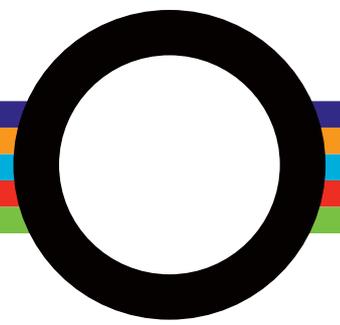
Level two resistance - is an emotional reaction to the new idea: in short, people are afraid. They fear that with this change they will lose control over their work, lose respect, become overwhelmed or even lose their jobs.

Typical level one strategies are insufficient for dealing with level two resistance. You need to engage people in ways that address their fears. Listen to those who resist change and try to understand how they feel and why they feel that way. Try to find common ground, incorporating their concerns.

Take the touchstone test to see if your strategies address level two concerns.

The touchstone test

- **Build strong working relationships.** Many changes in organisations burn bridges in the process. Although the current change may be implemented, you could have a difficult time gaining support for future changes if your strategies have actually created resistance. Aim to build bridges with those who have a stake in the outcome and involve them in creating goals and plans for the change.
- **Maintain a clear focus.** When people attack your ideas, it's easy to lose sight of your original goals. Ensure you keep your goal in mind while paying attention to the concerns of those who have a stake in the outcome. If you focus only on your goal, you will miss mounting resistance. If you concentrate only on the opposition, you will never know when you have enough support to move ahead.
- **Embrace resistance.** You cannot work through resistance without opening yourself up to those opposing change. Embracing resistance encourages people to talk about their feelings and helps you get to the root of their concern. Learning more about another person's perspective enables you to find common ground and discover ways to transform the negative energy of resistance into positive support for change.



- **Listen with an open mind.** People who fear they have something to lose are naturally reluctant to share their questions and concerns. People tell us the truth when they believe we are interested in them. Create a climate of trust and openness by making a commitment to listen to concerns with an open mind. Be willing to tell the truth: honesty can disarm resistance.
- **Stay calm to stay engaged.** Few leaders are willing to open themselves to a deluge of criticism: in the short term it's easier to avoid those who resist you. While listening to attacks on your ideas can be very stressful, staying calm and relaxed will help keep you centred on the issue at hand. As people raise questions about your position, listen attentively and draw them out. Do not attack or give in to them. Instead, use what you have learned to begin seeking common ground.
- **Join with the resistance.** It is important to seek a neutral zone that attempts to include the interests of all groups. Asking the following three questions will help you do this: 'What's in it for me?' 'What's in it for you?' 'What's in it for us?' As people answer these questions, especially the last one, listen for common fears and interests. Build on these similarities to find a solution that addresses the concern of all parties. By doing so, you can transform opposition into support.

Level three resistance – this is the deepest, most firmly entrenched form of opposition to change. It occurs when people are actually opposing you, rather than the change itself. There can be various reasons for this: you may have a troubled history, conflicting values or it may simply be because of what you represent (i.e. union versus management, differences in race, class or culture). Whilst it is possible to work with level three resistance, it will take time.

- **Continually work on building relationships.** Rumours and assumptions can derail negotiations instantly, so keep doing everything you can to build trust.
- **Begin small.** Start by working on issues where all sides see a benefit and a possible mutual win. Some corporations and unions have weakened level three issues by working on areas that are important, but not at the centre of the change. For example, safety concerns are common ground issues.
- **Candid conversation is vital.** Learn the skills of dialogue: talk and listen.
- **Support yourself.** It's easy to get defensive, but you need to be prepared to engage others. Thorough preparation, sleep, exercise and allowing sufficient time to hold the meeting can all help. Breathing exercises can also help you remain calm before tense encounters.
- **Involve people in changes that affect them.** Real time strategic change is one approach you could use. Form a planning group made up of a cross-section of stakeholders and devise a plan. Next, hold a meeting for up to 500 people to dissect this plan and create a new plan that meets a wide variety of interests. Whichever approach you choose must be done in collaboration with the people who oppose you. Lack of trust is the major reason why they resist. Trying to inflict any strategy, no matter how well intended, will fail.
- **Be prepared for setbacks.** Working with level three is extremely difficult. No single meeting will turn things around: trust is difficult to build and easy to destroy. For example, if you forget to invite someone in on a conference call due to an oversight, it could destroy weeks of good work between you.
- **Be prepared to walk away.** There will be times when the risk or energy required isn't worth it. In these instances, have the courage to walk away.



What next?

Once you have turned resistance into commitment you will be able to move forward with your implementation plans. After that, you will need to consider how to maintain commitment and evaluate the impact of the changes.

Other useful tools and techniques that may help you:

[Resistance – understanding it](#)

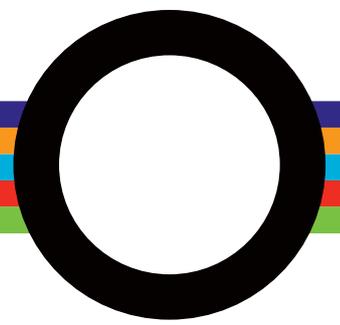
Additional resources

Websites

www.beyondresistance.com - the website of Maurer and Associates

Acknowledgements

Rick Maurer and Associates



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8.11 Listening - importance of this skill

Purpose

When you are carrying out improvement work, it is easy to overlook the importance of making time to listen to what colleagues are saying. Listening to staff is one of the most effective ways you can diagnose the nature of a problem and identify whether it is a people, process or technology issue.

Staff involved in organisational change may have questions, concerns and grievances they want to air. Open and sensitive discussion can help resolve areas of potential conflict before they impact on the improvement process. It is important that you promote understanding, involvement and constructive discussion throughout the change process.

Active listening can help you determine the type of intervention needed and help ease the introduction of any changes by identifying and addressing the concerns people have before they block the process. You should also be asking questions and seeking suggestions from your team - the best ideas often come from those who live the process.

When to use it

You may have already made a lot of improvements to your service, so the next phase of improving services will not be easy. This means you may encounter more resistance. If you are proposing a significant change and anticipate that there may be some resistance or concerns, this tool will help to ensure that you actively listen to those concerns. This investment of time and attention could prevent problems and reduce resistance later on.

How to use it

Step one – define the terms

You need to clarify technical terms, codes and jargon, as well as discussing the different assumptions people have about meanings. If you can all agree on definitions at this stage, you should avoid surprises or resistance later on.

Step two – paraphrase

Repeat back what the other person is saying in your own words – this will help you make a more thoughtful response and prevent you hearing only what you want to hear.

Step three – don't interrupt

It is important to give people space to talk freely and to recognise that arguing will not get at the issues beneath the surface. Don't assume that silence means agreement – build in time for people to say all that they want to.

Step four – listen between the lines for all levels of resistance

You need to ensure that you hear the speaker on all levels – words, feelings, assumptions, values, wishes and fears. Use your instincts to consider if this person means what they say. Be alert to how language or body language can project feelings – e.g. ‘I took the bullet’ might sound like a macho response, but can indicate hurt.

Step five – feed back impressions

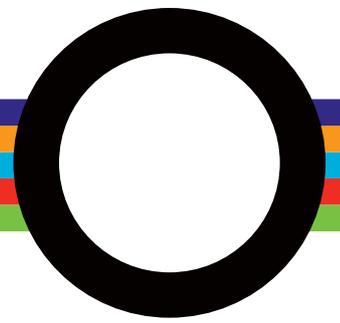
You can check observations with simple assumption statements – e.g. ‘If I were in your shoes, I might be thinking...’ and see if people agree. To develop trust, you need to show interest, provide a safe environment and listen openly. A range of factors may affect the trust that colleagues have in you - e.g. having been previously let down by the management.

Active listening alone isn’t enough: you must be prepared to be influenced by what you hear. Ensure that you don’t act like you care when you don’t: this will fool no one in the long run.

Guidelines for good dialogue include:

- Maintain confidentiality
- Avoid inflammatory comments
- Avoid trying to convert others to your point of view before you have listened to their views
- Show respect by listening attentively and responding appropriately
- State your intent at the beginning
- Acknowledge contributions that people make
- Accept responsibility for your actions and be prepared to take blame or apologise where necessary
- If colleagues surprise you, express your surprise – then ask them to explain (without telling them they are wrong or trying to reason them round to your viewpoint)
- Make guesses based on your assumptions, then ask them to confirm
- Ask questions in a spirit of curiosity – not judgement
- ‘Bracket’ interesting points of the conversation and return to them later
- Move gently, especially on personal/risky topics – watch out for signals that you need to back off
- Take care not to escalate resistance
- Stay excited about your idea and stay connected with the other person
- Make your short term goal to listen and explore – avoid knee jerk reactions

Once you have listened and explored, you can move on to the next objective – e.g. seek mutual gain, cut losses or rethink the idea



What next?

Listening skills are important at all stages of a project as communication is key to a number of issues including [identifying problems](#), [staff perceptions](#), [patient perspectives](#), building trust and [addressing uncertainty](#) in order to implement and sustain change.

Additional resources

Books

Time to Think: Listening to Ignite the Human Mind, N. Kline, 1998 (Cassell Illustrated)

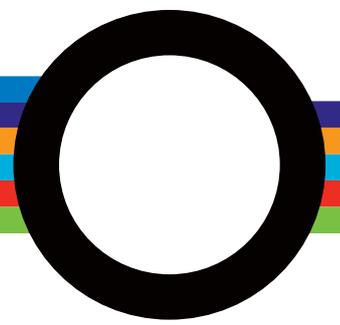
Websites

www.beyondresistance.com - for information on the art of listening



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NHS Institute for Innovation and Improvement
Coventry House,
University of Warwick,
Coventry,
CV4 7AL
Tel: 0800 555 550

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