

Continuous Quality Improvement for Excellence

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Learning Objectives

Learning Objectives:

- If the programme meets your expectations what will you be doing differently afterwards?
- What might get in the way of putting into practice what you learn?
- What experience have you had of quality Improvement?

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Aims and Objectives of the Workshop

By the end of the session the participants will have:

- An understanding of 'Coaching' others in quality improvement
- An understanding of behavioural styles to engage staff in QI
- An understanding of what quality improvement is and why it's important
- Developed an aim statement and explored some diagnostic methods
- Familiarity with quality improvement methods and techniques
- The ability to apply the model for improvement to their work
- An understanding of a process to implement successful change

The First Law of Improvement

"Every system is perfectly designed to achieve exactly the results it gets."

Dr Paul Bataldan

Improving Quality is about making health care safe, effective, patient-centred, timely, efficient and equitable. All staff have a role to play in ensuring that healthcare services continue to improve. At present the evidence is clear that healthcare is not always safe and can lead to poor patient experience and outcomes. At the same time, NHS finances are under increasing pressure. Healthcare services need to respond to this by improving efficiency, driving up quality and reducing levels of harm.

"Staff work in the system. The job of the manager is to work on the system and improve it with the help of their staff."

Myron Tribus

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What is Quality Improvement?

Quality improvement draws on a wide variety of methodologies, approaches and tools. Many of these approaches share some underlying principles including a focus on:

- Understanding the problem, with a particular emphasis on what the data tells you
- Understanding the processes and systems within the organisation, particularly the patient pathway, and whether these can be simplified
- Analysing the demand, capacity and flow of the service
- Choosing the tools to bring about change, including leadership and clinical engagement, skills development, and staff and patient participation
- Evaluation and measuring the impact of a change.

What is Quality?

Within healthcare, there is no universally accepted definition of 'quality'. The US Institute of Medicine defines quality as:

Quality is the degree to which health services for individual and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge

The Institute of Medicine has identified six dimensions of healthcare quality.

THE DIMENSIONS OF QUALITY

Safe

Avoiding harm to patients from care that is intended to help them.

Effective

Providing Services based on evidence and which produce a clear benefit.

Person Centred

Establishing a partnership between practitioners and patients to ensure care respects patients' needs and preferences.

Timely

Reducing waits and sometimes harmful delays

Efficient

Avoiding Waste

Equitable

Providing care that does not vary in quality because of a person's characteristics

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What are we trying to accomplish?

“Change is required. There is a process of change, just as there is a process of manufacturing, or for growing wheat. How to change is the problem.”

W Edwards Deming

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The Model for Improvement

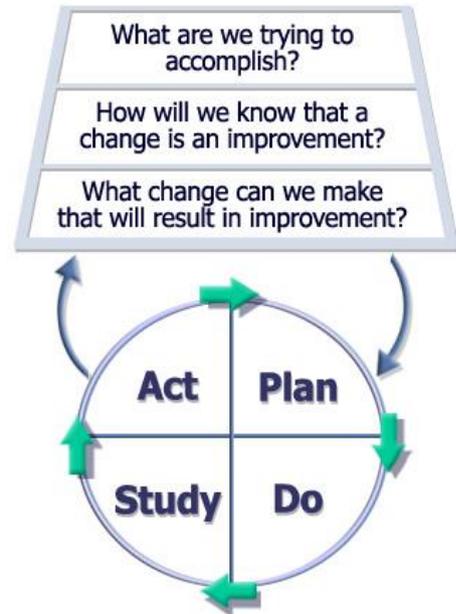
The Model for Improvement is a framework for accelerating improvement. The model is based on three fundamental questions:

1. What are we trying to accomplish?
2. How will we know that a change is an improvement?
3. What changes can we make that will result in improvement?

Any effort to improve something should provide the answers to these three questions.

This is an approach to continuous improvement where changes are tested in small cycles that involves planning, doing, studying, action (PDSA) before returning to planning and so on.

Each cycle starts with hunches, theories and ideas and helps them evolve into knowledge that can inform action and ultimately produce positive results



Crafting your aims and measures

Features of a good aim statement

A worthwhile topic, Outcome focused, Measurable, Specific population, Clear timelines, Succinct but clear.

[Adapted from Tom Nolan in The Improvement Guide]

Practice Exercise

1. Convert your problem into an aim statement as a group. Your aim should:
 - Describe an outcome and not a solution
 - Use plain English and contain no weasel words
 - Include a target condition

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2. Consider how you would measure your aim

Your Aim Statement:



“**Weasel words** are words that have no specific and obvious and **singular** meaning. They bring no clear images to mind of what is meant.”

Best practice, effective, evidence-based, excellence, high quality, high value, responsive, value, value-added, world class and many more!

Coaching the team...

Questions to ask to encourage your team to move from the problem to an outcome and **not** a solution

What would you like to achieve with this change?

- Look for a statement of the impact on their customer (patients or staff)

If you made this change successfully, what would the benefits be?

- Another opportunity for them to state the impact on their customer

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Flow Charts / Process Maps

What is Process Mapping and How Can it Help?

Processes within healthcare have evolved over many years and through many organisational changes; this means there are often many layers to pathways and complicated systems that have built up over time.



A good way to review systems and/or pathways to understand where improvements are needed is to work with frontline teams to process map. This is a simple exercise which facilitates a positive and powerful opportunity to create a culture of ownership within the multidisciplinary team to focus on areas for improvement.

A process map is a visual way of representing and understanding a step-by-step picture of processes, either one aspect or a whole patient pathway. It helps staff to understand the way the system works and reviews each step of the process to understand those adding value and those that do not currently work well for service users or staff.

As a team, process mapping can support open communication and consideration of all improvement areas, engaging representatives from different parts of the system to consider all interdependencies across the system. This can be a positive strategy for engaging stakeholders, all members of the multidisciplinary team and those resistant to considering new ways of working.

It also provides a measurable baseline on 'where are we now'.

When Does it Work Best? Top Tips

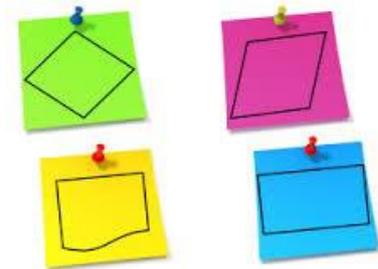
- Map the process first to make sure that everyone involved agrees each step of the process. Avoid focusing on the challenges and solving them before your process map is complete.
- Sessions facilitated by someone outside the immediate team can allow all members to participate fully in the mapping exercise, and provide an opportunity for someone who is removed from the process to ask challenging and clarifying questions
- Having a large wall space! If you are mapping the process by hand you will need a long stretch of wall to put up a continuous piece of paper, to identify each step with lots of



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coloured post its and flip chart paper and markers to capture comments along the way

- If mapping electronically during session it is essential that the team can see the process as you map; consider using a projector and a confident typist to keep up!
- Put down **all steps** of the process, the map will only be useful to the team if it is an honest illustration of the system. The map should show how things are and what happens now, rather than what should happen. Only when you see the current state, wards and all, can you work with staff to make improvements
- Have the right people in the room—it is essential to have representatives from all aspects of the process involved in this mapping activity; everyone's input is needed to fully understand each step. This supports highlighting areas where there is variation in understanding the process and capturing if there is duplication of tasks/roles
- Undertaking this activity close to the environment where the process happens allows the team to 'walk' the process if required to gain further insight or clarity of understanding



Mapping—How You Do It

- The map must have a title, date, and colour key. You can use different colour 'post it' notes, pens or coloured boxes along the process to mark details e.g.

Process Step

Issue / Problem

Ideas/Suggestions

- Discuss the key players in the process, write them individually on a post it note and place them on the very left hand side of your process map back drop. This allows you to map when in the process there are transition points between departments/services/professionals
- Use different shaped boxes or notes to mark decision points along the process, including points of entering or exiting the process
- Consider rating the steps with dots to show large, medium or small value to the patient
- Define the start and end points preferable head of time—not too big a chunk. Other processes may be identified and can be parked and dealt with later
- Include time frames on stages in the process if possible. It is useful to have flip chart/magic white board for ideas, discussion points and 'parking' ideas.

Next Steps

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Once the map is completed:

1. Identify areas that do not add value and consider removing them:
2. Identify bottlenecks, constraints, waste or duplication - understand how you can deal with them
3. Identify and understand variations in clinical practice - how can this be standardised? Identify areas/opportunities for improvement—generate ideas for improvement
4. Using all the above 3 points, talk through the ideas and identify the ones that will convert into actions. Organise/prioritise them within your project and develop an action plan to test them using PDSA Cycles as part of your improvement framework
5. Use what you learn from the current state map to develop your 'future state map'



Check sheet

What is a check sheet?

- A simple way of recording events, issues, defects as they occur. Also known as Tally sheets
- Requires some planning about how and when to capture the data

Why use one?

- Requires no equipment apart from a pencil and paper
- Allows the people doing the work to collect data
- Provides a way of capturing data over time
- You don't need to know the categories in advance; build the list as you go

An example

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- Junior doctors attending Board Round in an acute hospital
- Discussion about patients but no learning. It was almost like Groundhog Day!
- Instead they started to capture and record the issues raised
- When looked at over a period of time it told them which were the most commonly occurring issues

(Day 1) 17/2/15 – doctors, nurses, social work, OT

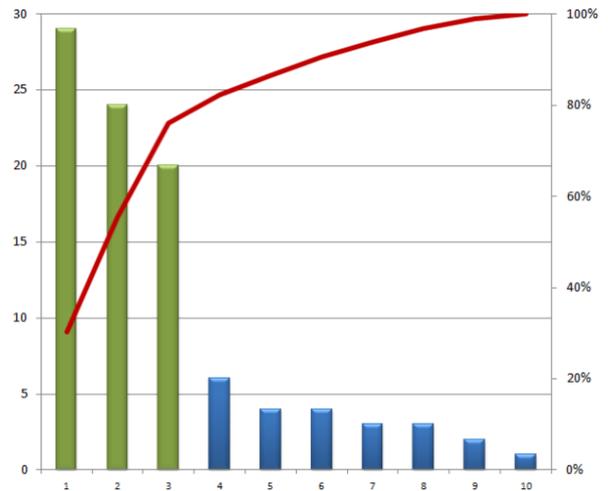
- 17 patients in total
 - 10 medical patients
 - IV treatment 4
 - Awaiting results
 - New on ward
 - Unwell 2
 - * 8 patients with reasons documented
 - 7 patients medically ready for discharge
 - No delay
 - Awaiting SSR 3
 - Awaiting family meeting regarding housing
 - OT assessment
 - Ongoing PT

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Pareto Chart

What is a Pareto chart?

- It is a special form of bar chart used to show the frequency of occurrence.
- The categories or items are sorted with the most frequently occurring category on the left. Values are read on the left hand scale.
- The cumulative percentage of the count of values is shown as a line and read on the right hand scale
- Data can be obtained from Check or Tally sheets
- Pareto chart first named and used by Joseph Juran. He borrowed the work of Vilfredo Pareto and said that about 80% of events or items come from 20% of sources



Why use one?

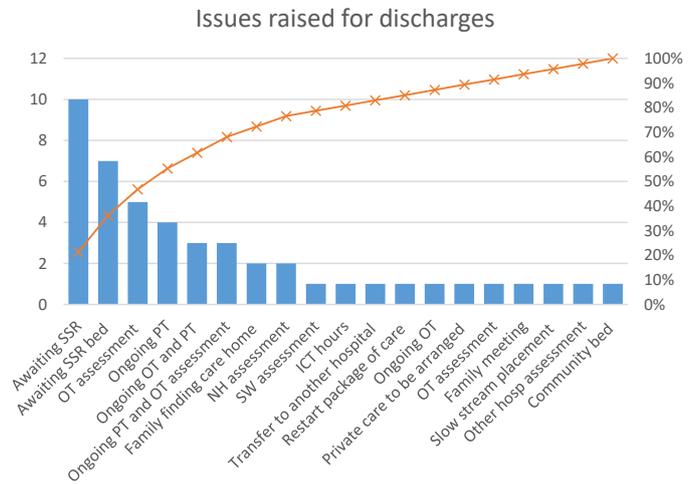
- Used to display the number of times distinct things happen such as:
 - Reasons for cancellation
 - Types of complaint
- To separate the 'vital few' from the 'useful many' (the 80/20 rule)
- Use a Pareto chart to know where to start work. Which category do we want to start with first?

An example

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Remember the tally chart example? The chart on the right is a Pareto chart of the delays caused for patients ready for discharge over a 2 week period. It shows clearly which issue is happening most frequently.

- (Day 1) 17/2/15 – doctors, nurses, social work, OT
- 17 patients in total
 - 10 medical patients
 - IV treatment 4
 - Awaiting results
 - New on ward
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 - * 8 patients with reasons documented
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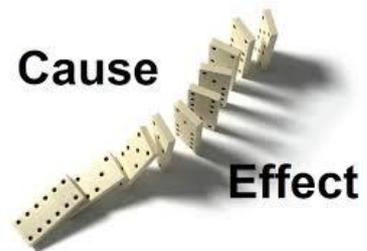


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Fishbone Diagram (Cause and Effect)

What is it and how can it help me?

Cause and effect analysis helps you think through causes of a problem thoroughly, including its possible root causes. It is only by identifying the main causes that you can permanently remove the problem, or reduce the delay. A cause and effect diagram is a tool that helps you do this. The 'Effect' is the problem you are working on, for example 'waiting times'. The tool can help you identify major causes and indicate the most fruitful areas for further investigation. It will help you understand the problem more clearly.



By going through the process of building the diagram with colleagues, everyone gains insights into the problem, alongside possible solutions. The people involved benefit from shared contributions, leading to a common understanding of the problem. The cause and effect diagram is sometimes called a fishbone diagram (because the diagram looks like the skeleton of a fish) or the Ishikawa diagram (after its inventor, Professor Kaoru Ishikawa of Tokyo University).

When does it work best?

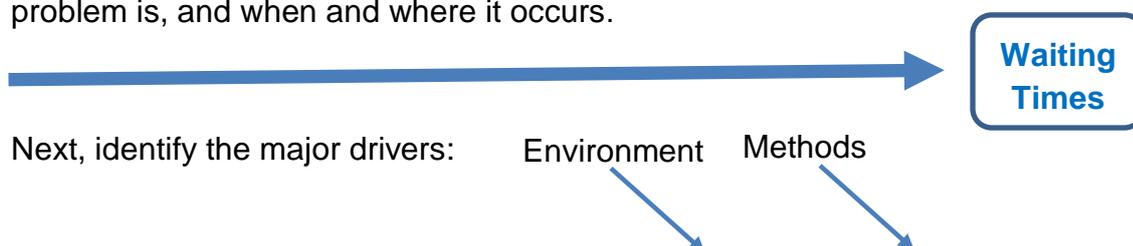
The tool quickly helps you to fully understand an issue and to identify all the possible causes—not just the obvious. If you know the cause of the delay, you are then better placed to implement the solution.

What does it do?

- The tool enables a team to focus on the content of the problem rather than its history or the differing interests of team members.
- Creates a snapshot of the collective knowledge and consensus of a team around a problem
- Focuses the team on the root cause of the problem—not its symptoms

How to use it

First identify the problem. Write it in a box and draw an arrow pointing towards it. Think about the exact problem in detail. Where appropriate, identify who is involved, what the problem is, and when and where it occurs.



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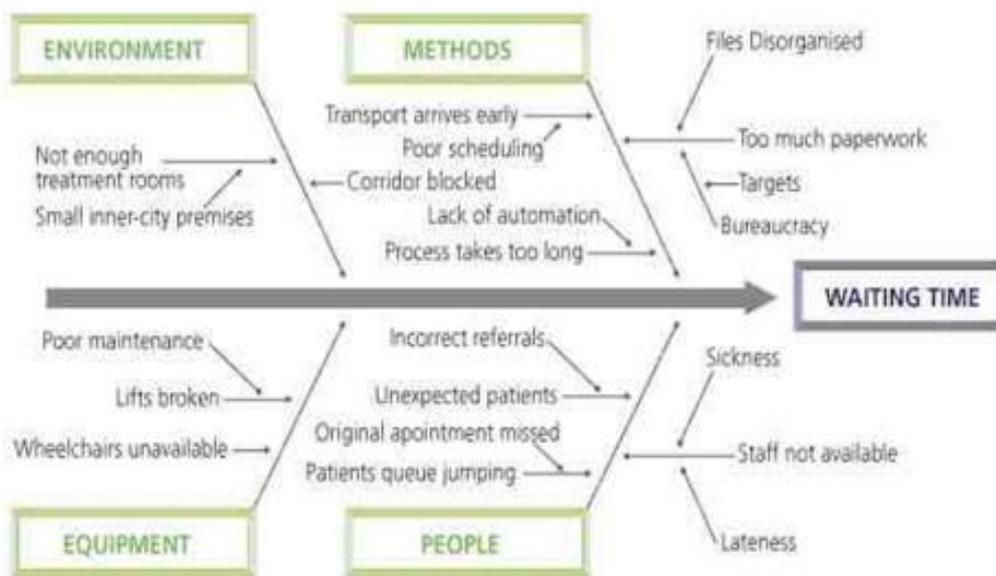
To complete the diagram

Equipment People

Waiting
Times

Take each of the main categories and brainstorm possible causes of the problem. Then, explore one to identify more specific 'causes of causes'. Continue branching off until every possible cause has been identified. Where a cause is complex, you might break it down into sub-causes. Show these as lines coming off each cause line.

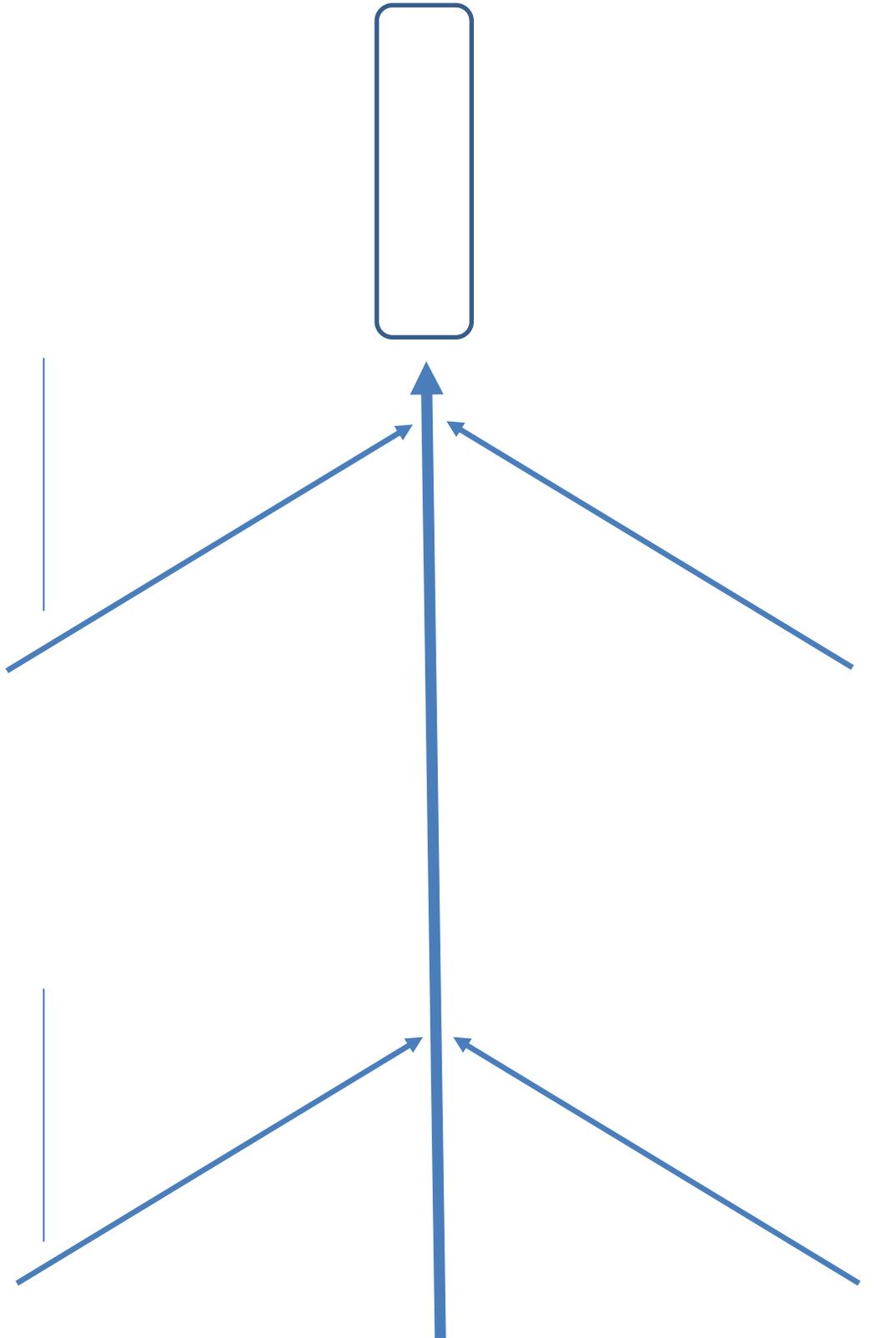
Analyse your diagram. By this stage you should have a diagram showing all the possible causes of your delay/problem. Depending on the complexity and importance of the problem, you can now investigate the most likely causes further. This may involve setting up interviews with patients and staff, undertaking process mapping etc.



Tips

- Make sure that your team agree 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 the 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.

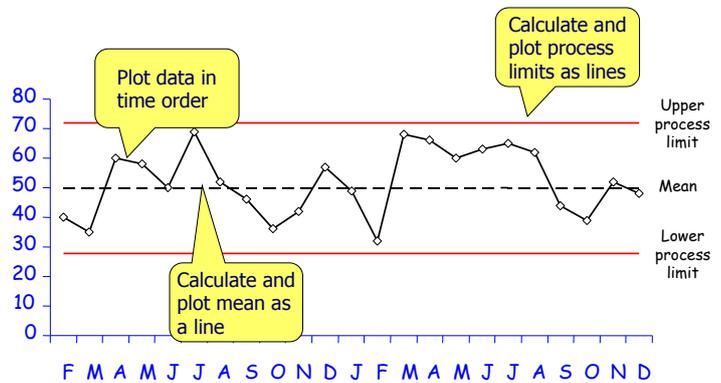
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What is a control chart?

The control chart is a graph used to study how a process changes over time. Data are plotted in time order. A control chart always has a central line for the average, an upper line for the upper control limit and a lower line for the lower control limit. These lines are determined from historical data.



Why use one?

Use a control chart to:

- help you make better decisions about how to react to your data
- Show whether you are likely to hit a target in future

Making better decisions

No two weeks are the same are they? Whenever we plot performance data over time the numbers are always different (as in the example above). Walter Shewhart, who invented the control chart, discovered that he could classify variation into 2 types:

Common cause variation: Sum of many small variations from real but small causes that are inherent in any process. They cannot be traced back to a root cause but are stable over time & therefore predictable. This is often referred to as “chance” or “normal variation”.

Special cause variation: Variation arising from a single cause not part of the normal process. It can be traced and identified. It is however irregular in time and therefore unpredictable.

Decision	Because
Do nothing	Performance ok
Contingency plans	Special cause variation
Process redesign	Common cause variation

Once you know which you are dealing with, it leads to fundamentally different decisions about what to do next (see table).

Hitting a target

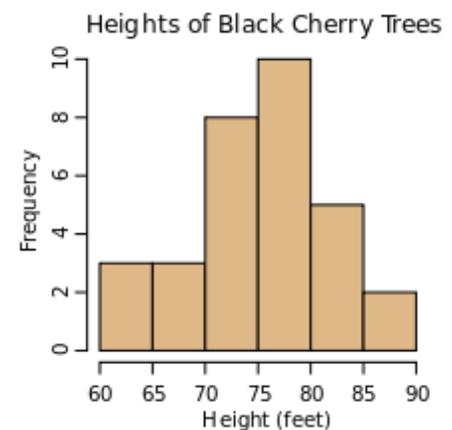
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The control or process limits (red lines in example above) are an estimate of the range of common cause variation in your data. If there are no special causes present values will fall between these two lines. This gives us a limited ability to predict the future. Plot the target as a line on the control chart and see where it falls. Is it outside the lines or between the lines? This will tell you how likely the process is to hit the target in future.

Histogram

What is a histogram?

- A histogram is a form of bar chart where the horizontal axis describes a continuous variable such as length of stay rather than individual categories (A,B,C etc)
- It shows how much variation there is and the shape of that variation. Is it symmetrical around the average for example? Is there just one peak?
- The Mode is the most frequently occurring interval and can be easily seen on the chart (75-80 feet in the example chart right)
- The range (minimum to maximum values) is also easy to see

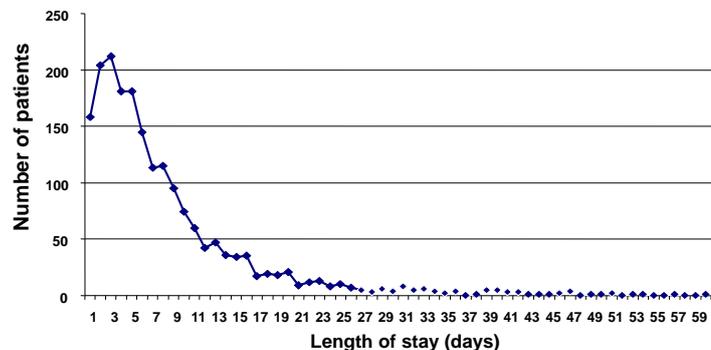


Why use one?

Use it to quantify the variation and look for patterns that can be investigated.

Variation

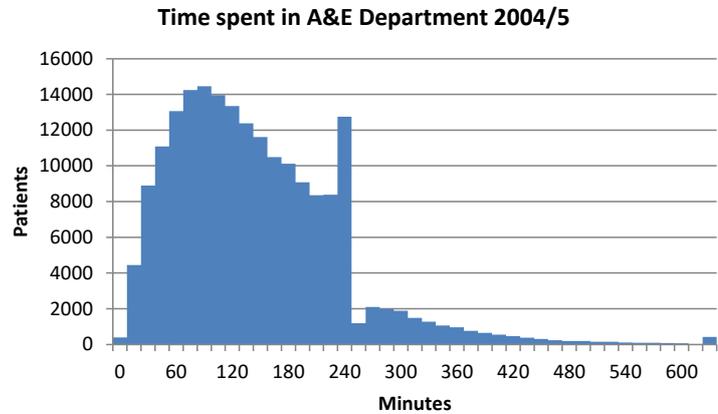
In the chart right, there are a lot of patients that stay 1 to 5 days. After that the number of patients falls away rapidly but not in a linear fashion. There are a few very long stay patients.



Patterns

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In the example right of time in an A&E department, there is a sharp divide at 4 hours. This shows how those working in the department are trying to manage the 4 hour target. This behaviour would not be obvious from the normal percentage achievement statistics that are reported.



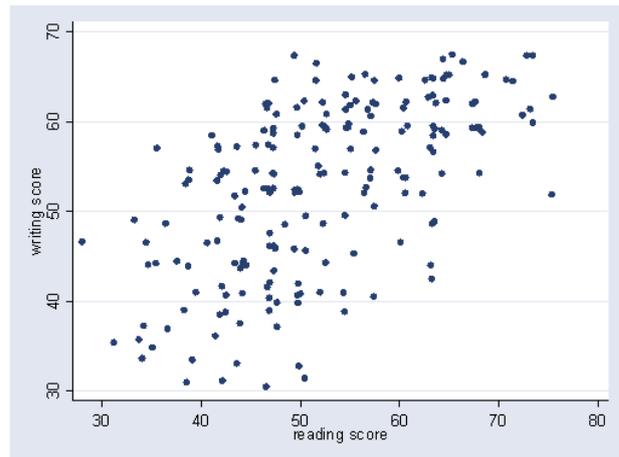
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Scatter Plot

What is a scatter plot?

- It is a graphical display of 2 continuous variables. Each is plotted on a separate axis.
- It shows how the data are distributed across the two variables
- Patterns or relationships are much easier to see

In the example right, Reading score is plotted on the X (horizontal) axis and Writing score is plotted on the Y (vertical) axis. Does a high Reading score automatically mean a high Writing score?



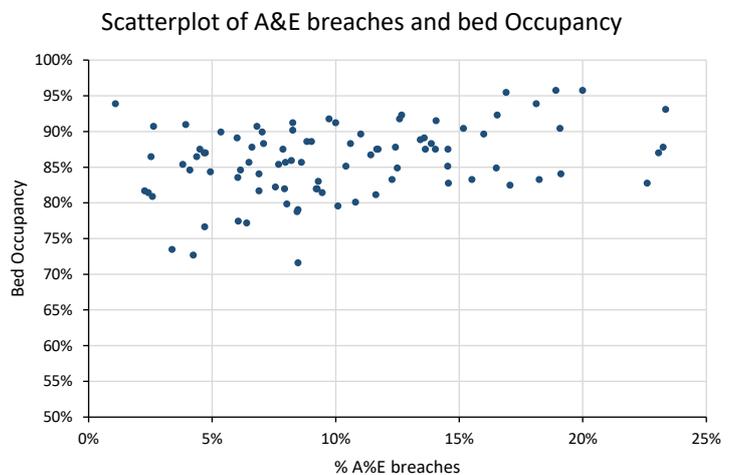
Why use one?

- It is used to see if there is any relationship or correlation between two variables.
- It can be usefully used to counter widely held beliefs e.g. X is always caused by Y.

Note: correlation does not always mean causation

In the example on the right, % A&E breaches have been plotted against average bed occupancy for a number of hospitals. Are A&E breaches caused by high bed occupancy?

The chart seems to show that this is not the case as high breaches are accompanied by widely different occupancy levels.



Coaching the team...

Questions to ask to ensure the team has identified the real root cause.

What have you already tried?

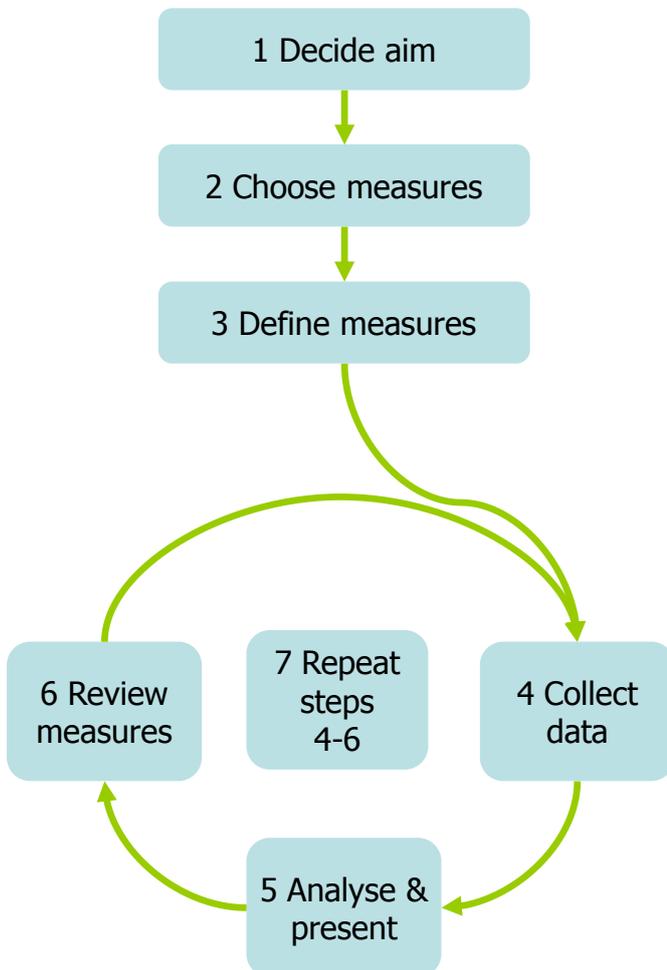
Do they know the extent to which it worked or didn't work?

What choices do you have here?

Can they explain why they think these are good options? If they've done their diagnostic work they will be able to.

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The 7 steps in the measurement process



Take half an hour to review your process

- Are you clear on your aim?
- Have you chosen the most appropriate measures?
- Can you describe them simply?
- And are sure you can get the data?
- Which chart are you going to use to display your data?
- Who will be using them to make decisions?

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Plan, Do, Study, Act (PDSAs)

What is it and how can it help me?

Once a team has set an aim and developed measures to determine whether a change leads to an improvement, the next step is to test a change in the real work setting. The four stages of the PDSA cycle:

Plan - the change to be tested or implemented

Do - carry out the test or change

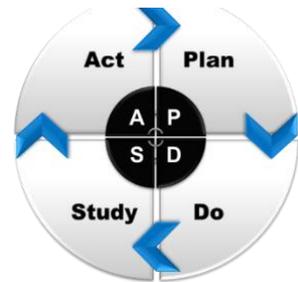
Study - data before and after the change and reflect on what was learned

Act - plan the next change cycle or full implementation



When does it work best?

You may not get the results you expect when making changes to your processes, so it is safer, and more effective to test out improvements on a small scale before implementing them across the board. Using PDSA cycles enables you to test out changes before wholesale implementation and gives stakeholders the opportunity to see if the proposed change will work. Using the PDSA cycle involves testing new change ideas on a small scale. Trying out a new way to make appointments for one consultant or one clinic.



Why test change before implementing?

- Learn and adapt
- Increase degree of belief
- Build a common understanding
- Evaluate costs and side effects
- Reduce total lead time of full implementation
- Test ideas under different conditions

Steps in the PDSA Cycle

Plan

- Plan the test or observation, including a plan for collecting data
- State the objective of the test
- Make predictions about what will happen and why
- Develop a plan to test the change (Who? What? When? Where? What data needs to be collected?)

Do

- Try out the test on a small scale
- Carry out the test
- Document problems and any unexpected outcome
- Begin analysis of the data

Study

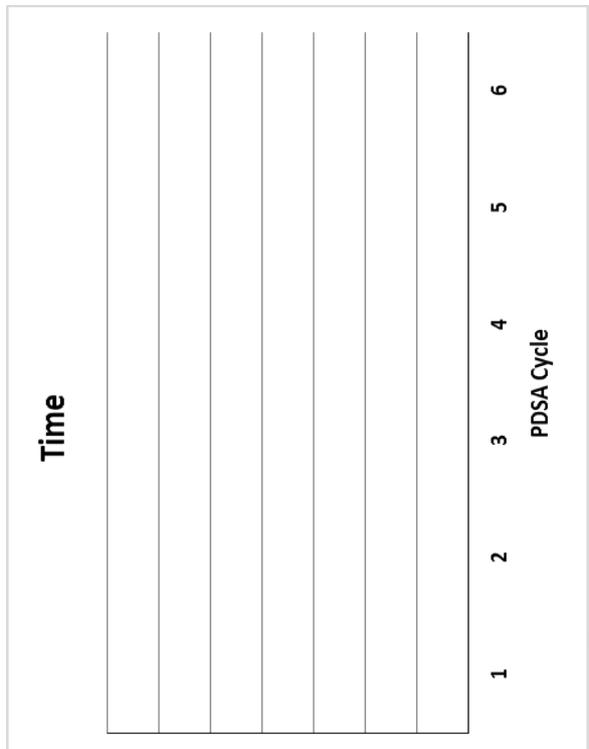
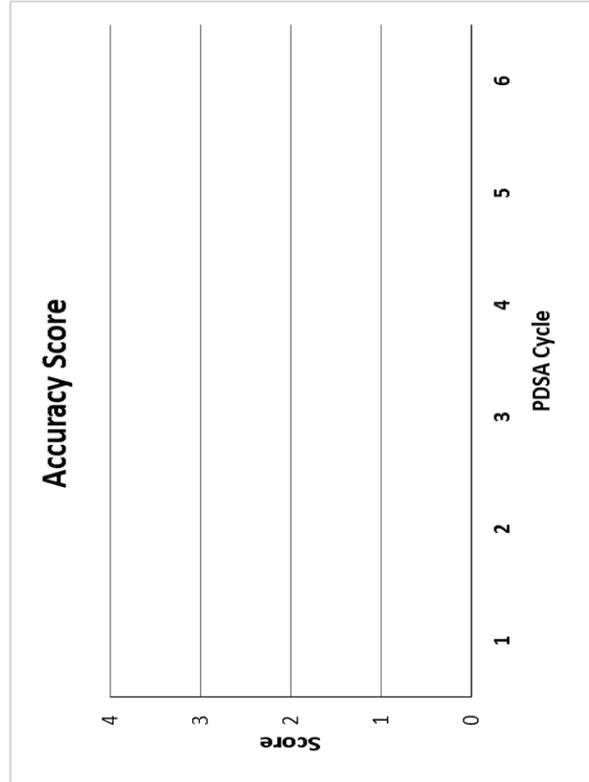
- Review the data and study the results
- Complete the analysis of the data
- Compare the data to your predictions

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- Summarise and reflect on what was learned
- Refine the change based on what was learned from the test
- Determine what modifications should be made
- Prepare a plan for the next test

Act

Theory	BASELINE	Prediction Time	Actual Time	Predicted Accuracy	Actual Accuracy
		NA		NA	



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PDSA Simulation Exercise reflections:



Possible PDSAs I could try?

Coaching the team...

Questions to ask to encourage your team to test properly

What are you going to test first?

If they have done their diagnosis well, they will have a logical choice

How small is your first test?

Anything bigger than 1 (1 patient, 1 shift, 1 day) is too big

What do you predict will happen?

If they have a good theory, they will be able to predict

When are you reviewing the results?

Ideally straight away so they keep the momentum

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Why does change often fail?

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Coaching Your Team Through Quality Improvements

1. Questions to ask to encourage your team to move from the problem to an outcome and **not** a solution

- What would you like to achieve with this change?
 - *Look for a statement of the impact on their customer (patients or staff)*
- If you made this change successfully, what would the benefits be?
 - *Another opportunity for them to state the impact on their customer*

2. Questions to ask to ensure the team has identified the real root cause

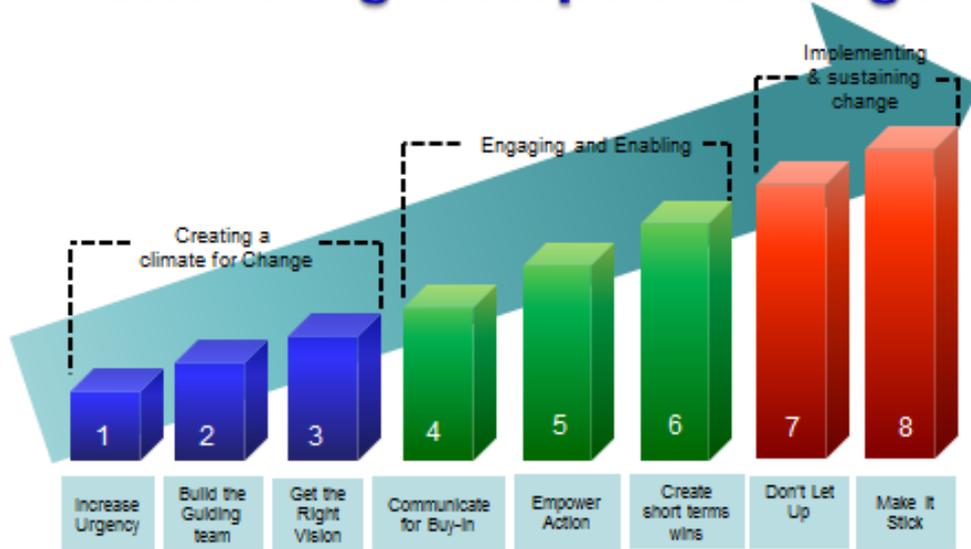
- What have you already tried?
 - *Do they know the extent to which it worked or didn't work?*
- What choices do you have here?
 - *Can they explain why they think these are good options? If they've done their diagnostic work they will be able to*
- What might be the consequences of each of those choices?
 - *To ensure they've thought about the wider impact*

3. Questions to ask to encourage your team to test properly

- What are you going to test first?
 - *If they have done their diagnosis well, they will have a logical choice*
- How small is your first test?
 - *Anything bigger than 1 (1 patient, 1 shift, 1 day) is too big*
- What do you predict will happen?
 - *If they have a good theory, they will be able to predict*
- When are you reviewing the results?
 - *Ideally straight away so they keep the momentum*
 - *What did you learn from the cycle?*
 - *What worked, what didn't work?*

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Kotter's Eight Steps of Change



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Step 1: Create Urgency

For change to happen, it helps if the whole organisation really wants it. Develop a sense of urgency around the need for change. This may help you spark the initial motivation to get things moving. This isn't simply a matter of showing people poor performance or talking about changes elsewhere in the NHS. You will need an open and honest and convincing dialogue about what's happening in your organisation and in healthcare. If many people start talking about the change you propose, the urgency can build and feed on itself.

Step 2: Form a Powerful Coalition

Convince people that change is necessary. This often takes strong leadership and visible support from key people within your organisation. Managing change isn't enough – you have to lead it. You can find effective change leaders throughout your organization – they don't necessarily follow the traditional company hierarchy. To lead change, you need to bring together a coalition, or team, of influential people whose power comes from a variety of sources, including job title, status, expertise, and political importance. Once formed, your "change coalition" needs to work as a team, continuing to build urgency and momentum around the need for change.

Step 3: Create a Vision for Change

When you first start thinking about change, there will probably be many great ideas and solutions floating around. Link these concepts to an overall vision that people can grasp easily and remember. A clear vision can help everyone understand why

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you're asking them to do something. When people see for themselves what you're trying to achieve, then the directives they're given tend to make more sense.

- Determine the values that are central to the change.
- Develop a short summary (one or two sentences) that captures what you "see" as the future
- Ensure that your change coalition can describe the vision in five minutes or less.

Step 4: Communicate the Vision

What you do with your vision after you create it will determine your success. Your message will probably have strong competition from other day-to-day communications within the organisation, so you need to communicate it frequently and powerfully, and embed it within everything that you do.

Don't just call special meetings to communicate your vision. Instead, talk about it every chance you get. Use the vision daily to make decisions and solve problems. When you keep it fresh on everyone's minds, they'll remember it and respond to it.

It's also important to "walk the talk." What you do is far more important – and believable – than what you say. Demonstrate the kind of behaviour that you want from others.

Step 5: Remove Obstacles

If you follow these steps and reach this point in the change process, you've been talking about your vision and building buy-in from all levels of the organization. Hopefully, your staff wants to get busy and achieve the benefits that you've been promoting. But is anyone resisting the change? And are there processes or structures that are getting in its way?

Put in place the structure for change, and continually check for barriers to it. Removing obstacles can empower the people you need to execute your vision, and it can help the change move forward.

What you can do:

- Recognize and reward people for making change happen.
- Identify people who are resisting the change and help them see what's needed.
- Take action to quickly remove barriers (human or otherwise).

Step 6: Create Short-Term Wins

Nothing motivates more than success. Give your team a taste of victory early in the change process. Within a short time frame (this could be a month or a year, depending on the type of change), you'll want to have some "quick wins" that your staff can see. Without this, critics and negative thinkers might hurt your progress.

Create short-term targets – not just one long-term goal. You want each smaller target to be achievable, with little room for failure. Your team may have to work very hard to come up with these targets, but each "win" that you produce can further motivate the entire staff.

Step 7: Build on the Change

Kotter argues that many change projects fail because victory is declared too early. Real change runs deep. Quick wins are only the beginning of what needs to be done to achieve long-term change. Each success provides an opportunity to build on what went right and identify what you can improve.

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What you can do:

- After every win, analyse what went right, and what needs improving.
- Set goals to continue building on the momentum you've achieved.
- Keep ideas fresh by bringing in new team members and leaders for your change coalition.

Step 8: Anchor the Changes in Corporate Culture

Finally, to make any change stick, it should become part of the core of your organization. Your corporate culture often determines what gets done, so the values behind your vision must show in day-to-day work. Make continuous efforts to ensure that the change is seen in every aspect of your organisation. This will help give that change a solid place in your organization's culture. It's also important that your team leaders continue to support the change. If you lose the support of these people, you might end up back where you started.

What you can do:

- Talk about progress every chance you get. Tell success stories about the change process, and repeat other stories that you hear.
- Publicly recognize key members of your original change coalition, and make sure the rest of the staff – new and old – remembers their contributions.

What will I commit to?

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<p>3</p>	<p>Three things I have learnt today</p>	
<p>2</p>	<p>Two concepts or ideas that I intend to start or continue using in my work</p>	
<p>1</p>	<p>One thing that had the most impact on me during this Workshop</p>	

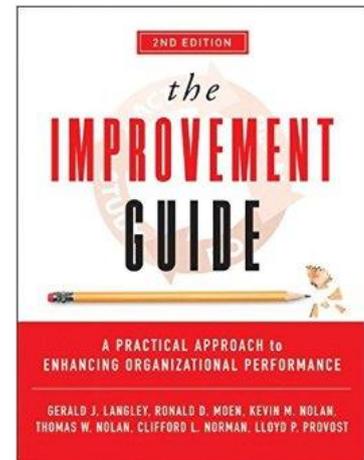
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Bibliography and Further Reading

An Introduction to The Model for Improvement

<https://www.youtube.com/watch?v=jq52ZjMzqyl>

The Improvement Guide, Langley et al, Josey Bass, 2009
(2nd edition)



7 Quality Tools References

A handy summary with links to the individual tools:

https://en.wikipedia.org/wiki/Seven_Basic_Tools_of_Quality

Ishikawa, Kaoru (1985), What Is Total Quality Control? The Japanese Way (1 ed.), Englewood Cliffs, New Jersey: Prentice-Hall (Ishikawa created the 7 after hearing Deming talk in Japan)

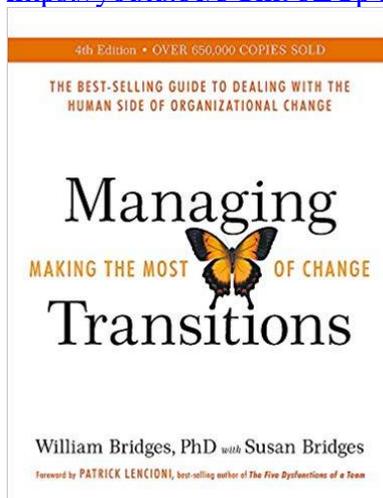
Another useful source of information

<http://asq.org/learn-about-quality/seven-basic-quality-tools/overview/overview.html>

Managing Transitions

Managing Transitions: Making the Most of Change [William Bridges, Susan ... ISBN-10: 0738213802; ISBN-13: 978-0738213804;

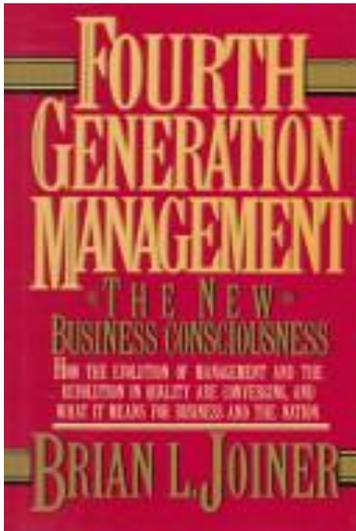
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Fourth Generation Management
Brian L Joiner, McGraw-Hill, 1994



Management on the mend: *The Healthcare Executive Guide to System Transformation*, John Toussaint, Thedacare Centre for Healthcare Value, 2015

