MINDSet
Introduction to
Quality Improvement in Mental Health
### Contents

<table>
<thead>
<tr>
<th>Page</th>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Introduction</td>
</tr>
<tr>
<td>7</td>
<td>What is Quality Improvement?</td>
</tr>
<tr>
<td>8</td>
<td>What is Quality?</td>
</tr>
<tr>
<td>9</td>
<td>Why Quality Improvement (QI)?</td>
</tr>
<tr>
<td>10</td>
<td>Thinking and acting like an improver</td>
</tr>
<tr>
<td>14</td>
<td>Agree your QI Methodology</td>
</tr>
<tr>
<td>20</td>
<td>Develop a Shared Purpose and Work Together</td>
</tr>
<tr>
<td>22</td>
<td>Getting and Keeping People on Board</td>
</tr>
<tr>
<td>23</td>
<td>Articulating the case for change</td>
</tr>
<tr>
<td>24</td>
<td>Getting Involved and Co-production</td>
</tr>
<tr>
<td>32</td>
<td>Stakeholder Engagement</td>
</tr>
<tr>
<td>34</td>
<td>Discover and Understand the Problem</td>
</tr>
<tr>
<td>36</td>
<td>Reviewing the Evidence and ‘Benchmarking’</td>
</tr>
<tr>
<td>38</td>
<td>Understanding your local context, systems and culture</td>
</tr>
<tr>
<td>40</td>
<td>Developing a Culture of Safety</td>
</tr>
<tr>
<td>41</td>
<td>Mapping what you do now</td>
</tr>
<tr>
<td>46</td>
<td>Using a Spaghetti Diagram</td>
</tr>
<tr>
<td>47</td>
<td>Root Cause Analysis</td>
</tr>
<tr>
<td>51</td>
<td>Get Creative, Design and Test</td>
</tr>
<tr>
<td>53</td>
<td>Driver Diagram</td>
</tr>
<tr>
<td>56</td>
<td>Creative Idea Generation</td>
</tr>
<tr>
<td>58</td>
<td>Start to Test Using Plan Do Study Act</td>
</tr>
<tr>
<td>65</td>
<td>Measure, Evaluate, Learn and Re-Test</td>
</tr>
<tr>
<td>66</td>
<td>Measuring for Improvement</td>
</tr>
<tr>
<td>69</td>
<td>Understanding Variation: what can run charts tell us.</td>
</tr>
<tr>
<td>72</td>
<td>Implement and Spread</td>
</tr>
<tr>
<td>74</td>
<td>Spread – Dissemination versus Diffusion</td>
</tr>
<tr>
<td>79</td>
<td>Join the QI Movement</td>
</tr>
</tbody>
</table>
Welcome to MINDSet. MINDSet is a quality improvement (QI) website for people involved in providing or commissioning services for people with mental health problems. It can be found at: www.mindsetqi.net

It has been designed with the involvement of a range of organisations with the aim of making continuous improvement in mental health easier. The MINDSet website provides many of the improvement tools you need in one place. It also includes real life case studies from people who are using QI in mental health services and handy summaries of current policies and information sources to support improvement.

We are lucky to have many people in the UK who are willing to use their hearts, minds, and skills not only to do a good job on a daily basis but also to think about how they can continuously improve the quality and safety of mental health services. This can be as an individual (by taking the time to ‘go the extra mile’ for someone), at a team level (by thinking together about how to work together more effectively) or at a service, organisational or system level by figuring out how to
commission or introduce innovative ideas at scale.

Using a methodical approach to improvement helps to identify what needs to change, generates creative solutions that can be quickly tested at small scale, refined and then spread.

This brief guide aims to give you a ‘taster’ of how to use QI theories and tools in mental health settings. It introduces the MINDSet approach; using evidence-based tools and QI theories to help think about what to improve, how to improve and how you will know that a change is an improvement.

We have developed a five step improvement journey to outline a typical QI process and also grouped tools, methods and underpinning theories that you might want to use along this journey. The tools and methods are quick to learn and easy to apply.

This can help make a huge difference to patient outcomes, experience and safety, save lives, money and wasted time and effort. So go on read this guide and visit the MINDSet website for more ideas and inspiration at www.mindsetqi.net and join our community of learning, sharing your learning and building up the knowledge base of how to use QI in mental health services.
The MINDSet Improvement Journey is organised into five overlapping themes commonly encountered in the improvement journey. Each theme provides a suite of tools, links to resources and information that will help you make progress.

Whilst the diagram below makes the improvement journey look like a smooth linear process, the reality of undertaking a QI project is much more ‘messy’. You can pick and choose the elements we have described and the order they are delivered in to design an approach that suits your team, service or community.
What is Quality Improvement?
What is Quality?

The following dimensions of healthcare quality are widely recognised and universally accepted:

- **Safe:** avoiding harm to patients from care that is intended to help them.
- **Timely:** reducing waits and sometimes harmful delays.
- **Effective:** providing services based on evidence and which produce a clear benefit.
- **Efficient:** avoiding unnecessary waste.
- **Equitable:** providing care that does not vary in quality because of a person’s characteristics.
- **Person-centred:** establishing a partnership between practitioners and patients to ensure care respects patients’ needs and preferences.

Any aims to improve on these six dimensions should focus on:

- Avoiding needless deaths
- Avoiding needless pain or surgery
- Eliminating waste
- Eliminating unwanted waits
- Eliminating patients and carers feeling helpless

Consistently: everyone, every time.

*Ref: Crossing the Quality Chasm. A New Health System for the 21st Century. Committee on Quality of Health Care in America.*

INSTITUTE OF MEDICINE   March 1, 2001
Why Quality Improvement (QI)?

QI is not just a method or model, but more an approach to personal or organisational learning, development and improvement. It helps to tackle complex problems by:

- Focusing on outcomes
- Giving everyone a voice
- Bringing people together to improve and redesign the way that care is provided.

QI uses specific techniques to improve quality. They all have the following in common:

- The concept of a cycle of improvement which involves problem definition and diagnosis, testing of change ideas, data collection and analysis, implementation and evaluation
- A set of tools and techniques that support individuals to implement the improvements
- A recognition of the importance of engaging stakeholders, including patients and carers
- A recognition of the importance of culture and the need for clinical and managerial leadership.

When done successfully, QI can change the culture of a system, whether the system is a single team, a department, an organisation or a health economy.
Thinking and acting like an improver

Some people in mental health settings do have formal training or qualifications in QI. However, the chances are high that you are reading this guide never having had the benefit of any formal training and yet you might already have been involved in highly successful improvement work for many years. You’ll probably discover that you are already familiar with many of the tools and techniques we describe, but if not, e-learning in QI can be found at IHI Open School www.ihi.org/education/ihiopenschool and many excellent videos can be accessed at You Tube, like this great introduction to the subject by Dr Mike Evans www.youtube.com/watch?v=jq52ZjMzqyl.

Even if you have never done any QI work you probably have many of the personal qualities and ‘habits’ of an improver that Professor Bill Lucas and Hadjer Nacer (2015)\(^1\) say are essential for this kind of work.

They found that there were 15 habits that improvers regularly use, grouped these under five broad headings:

- Learning
- Influencing
- Resilience
- Creativity
- Systems thinking

Understanding which of these habits you excel in and which could be developed will help you develop your improvement skills.

The paper can be found here; www.health.org.uk/sites/health/files/TheHabitsOfAnImprover.pdf
Alongside cultivating the personal habits of an improver it is necessary to combine subject matter expertise (from people with lived experience of mental illness, carers, clinicians, managers and commissioners etc.) with knowledge about how to improve the system.

William Edwards Deming believes it takes four keys areas of knowledge to lead successful improvement. This is known as the Theory of Profound Knowledge. It seeks to capture different people’s knowledge and theories about an issue. When the four areas are addressed, QI methods and tools can be used to test the theories against systematic data. These areas are;

- **System thinking**
  Understanding that sustainable improvement occurs when safer systems are put in place to reduce human errors – like when your computer asks if you’re sure you want to delete a document

- **Variation**
  Achieving excellent outcomes by reducing variations within a system

- **Psychology**
  How we can motivate and encourage people to make and sustain changes

- **How to make change happen**
  QI methods, tools and techniques.
System of Profound Knowledge – William Edwards Deming

- Psychology
- Theory of Knowledge
- Systems Thinking
- Variation

QI
Agree your QI Methodology

There is no single QI methodology and set of tools that is recommended for work in mental health. However it is helpful at an organisational level if agreement can be reached by senior leaders about the strategic approach that will be taken across the organisation or wider community. This avoids confusion and ensures that everyone is talking a common language about improvement and that the chosen methodology becomes embedded in the culture becoming ‘the way we do things around here’.

There are several well-known QI methodologies to choose from. Most have evolved from work in industry in the 1940s and 50s through thought leaders such as W Edwards Deming, Joseph Juran, Kaoru Ishikawa and Armand Feigenbaum. These techniques have been refined to be used in healthcare and all can be adapted for mental health settings.

The most commonly used QI approaches used in UK mental health settings include:

- The Institute for Healthcare Improvement (IHI) Model for Improvement
- Lean
- Six Sigma
- Theory of Constraints
- Total Quality Management
- Microsystems Coaching
- Experience Based Co-Design.

For a good example of a mental health trust that is using this approach visit East London NHS Foundation Trust’s Quality Improvement Programme http://qi.elft.nhs.uk
Model for Improvement

The Model for Improvement is a systematic approach to testing your ideas for making improvement. It is a widely recognised process in healthcare and frequently creates positive outcomes for improvement. The model is not time consuming. In fact is popular because it requires a fast approach of testing ideas to see if they work. Test small, fail quickly and move on to a new idea, or hopefully, see results and begin to spread the change.

The approach relies on three key questions:

- What are we trying to accomplish? (Develop a clear aims statement)
- How will we know that a change is an improvement? (Decide what you will measure)
- What changes can we make that will result in improvement? (What are your ideas to make improvements – refer to ideas from your Driver Diagram, see page 53).

These questions are answered by testing change ideas using PDSA cycles, which are a fantastic way of taking ideas, trying them in practice, learning what works and what doesn’t to help you achieve success.

- **Plan:** the change you want to test
- **Do:** carry out the test
- **Study:** observe and learn from the test
- **Act:** determine what should happen next based on the success of the test.

It usually takes a number of short testing cycles to refine a change idea before it is ready for full implementation.
Lean
Lean is the name given to the way that car manufacturers, including Toyota, have implemented QI since the middle of the last century. The term Lean is not used by Toyota when referring to its own QI approach; instead, this is known as the Toyota Production System (TPS). Lean as a term was coined in books about Toyota’s experience named ‘The Machine that Changed the World’ and ‘Lean Thinking’ by Womack and Jones (1990; 1993).

The aim of Lean/TPS is to make sure that value is delivered to the customer as quickly as possible by ensuring that products flow through the system, with as few mistakes and as little waste as possible. The main focus of Toyota is not on tools however, but on creating a culture of improvement where all employees are able to suggest and make improvements that can affect the whole company.

For a good example of a mental health trust that is using this methodology for lean transformation using the Virginia Mason Production System (VMPS) see Tees, Esk and Wear Valley NHS Foundation Trust’s QI System www.tewv.nhs.uk/site/gps-and-referrers/tewv-quality-improvement-systems

Six Sigma
Six Sigma was developed at Motorola in the mid-Eighties by Bill Smith. The core aim of this approach is to eliminate defects in the production of items, originally mobile phones. ‘Six sigma’ itself is a statistical term describing the level of defects that the overall approach is aiming to achieve; in this case, less than 3.4 errors per million products. This approach is heavily focused on using statistical tools to help to identify and eliminate problems, with such problems being cause by unwarranted variation in production methods.
Although many of the tools used in Six Sigma are the same as that used in Lean/TPS, the focus is more firmly on using these tools to control variation rather than removing waste (as in Lean/TPS). However, an approach to QI named ‘Lean Six Sigma’ has also been developed which aims to combine the complementary approaches into one.

**Theory of Constraints**

When we have blockages or bottlenecks in our healthcare systems, they slow down and determine the rate of flow through the system, causing constraints on the whole service we can deliver. By identifying where the constraints are, it is possible to focus improvement efforts where they will have the biggest impact on the overall flow across the system. The Theory of Constraints identifies a five-step process to achieve this continuous flow and improve services:

1. **Identify the system’s constraints**
2. **Get the most out of the constraint - exploit it**
3. **Support the system’s constraint - subordinate everything else to it**
4. **Elevate the system’s constraint**
5. **Go back to Step One, don’t allow inertia to become the system’s constraint**

For more information on how to put this into practice visit the link in the Further Information section at http://tinyurl.com/ory6otc
**Total Quality Management**

Total Quality Management (TQM) refers to a QI approach developed by WE Deming in the mid-Eighties. Deming had worked closely with Toyota on the development of the Toyota Production System, and felt that the USA needed an approach that matched its own cultural norms. Deming codified this approach in a book entitled ‘Total Quality Management’ (1984). Over the next eight years, Deming developed this approach further into what became his 14-point ‘Theory of Profound Knowledge’, which has had an important influence on other QI approaches since.

**Microsystem Coaching**

Healthcare systems are made up of multiple microsystems that link together in complex ways. A microsystem is another way to describe a single team or unit that works together to achieve a common purpose for the benefit of patients and carers.

In mental health settings this could be a recovery or IAPT team, a recovery college or a ward in a hospital setting etc. Often people needing healthcare access care from multiple microsystems. One person could receive care from a GP practice, recovery team, recovery college, pharmacy, crisis home treatment team and inpatient ward for example. They will see that each microsystem has its own culture, processes and ways of doing things. This can lead to lots of variation in the experience of care and when things go badly it can lead to confusions, safety issues and poor performance.

The quality and value of care produced by a large health system can be no better than the services generated by the small systems (microsystems) of which it is composed, so this is where an improvement culture needs to be embedded.
A Microsystems approach to improvement emphasizes the need for a systematic and in-depth approach to ‘diagnosing’ your systems before embarking on any improvement work. This is known as the 5 P’s assessment and it allows you to gain deeper knowledge and understanding of the way the it functions by looking at the Microsystems’ purpose, patients, professionals, processes and patterns.

This method of identifying problems avoids focusing on a single element of a service without considering how change would impact on other parts of it. For a good example of how this is being applied in the UK visit Sheffield www.sheffieldmca.org.uk


**Experience Based Co-design**
This is a person centred QI approach that supports people with lived experience of mental illness to work in partnership with staff to design services and pathways. This technique uses film, in depth interviews, group discussions and facilitated improvement exercises to understand what the current experience of the service is and then identify areas for improvement. See how this has worked across the UK and the impact this powerful technique has made at www.kingsfund.org.uk/projects/ebcd
Develop a Shared Purpose and Work Together
Develop a shared purpose and work together

The QI methods and tools in this section help you at the very beginning of your improvement journey.

They continue to be crucial throughout the whole improvement journey as it is often the ‘human’ elements of change such as behaviour, culture and custom that make up the “the way we do things around here” that can be the hardest part of any system to change, but the most transformational if achieved.

“Improvement in healthcare is 20% technical and 80% human”

Marjorie Godfrey (The Dartmouth Institute).
Getting and Keeping People on Board

Improvement tends to be a team effort; where people come together to make something better. If we use Formula One Racing Teams as an example, their steady improvement over the past 50 years has been achieved by a wide range of contributors; drivers, scientists, car, fuel and tyre manufacturers, psychologists/coaches, sponsors, medics and arguably even the crowds that cheer the teams on. Teams focus on making lots of small incremental changes and by continuously measuring performance against their improvement aims. Although small, the changes accumulate into large improvements over time.

At the beginning of an improvement journey it is important to spend time with people thinking about your aim and what you want to achieve. The next step is to test this aim widely with key stakeholders to see if it’s right and then to think about the kind of team that will be needed to make this aim a reality.

This section outlines tools and techniques that help to get and keep people on board during the improvement journey.
Articulating the case for change

If you believe a change is needed, be prepared to make the case for change really well. Work in a collaborative way, listening to other people’s opinions to capture different points of view and perspectives. This way the idea about what needs to change will be co-designed and ‘owned’ by the team that will go on to design and test ideas for improvement.

Tools that can help articulate the case for change include:

- The use of data to show how things currently are
- Feedback from surveys and focus groups
- Findings from research
- The use of films and stories to show the human impact of a poor system on a person
- Best practice from other areas
- Learning from complaints and compliments
- Picture representations (‘Infographics’) that demonstrate complex data in easy to understand formats
- Use social media to create blogs, videos, twitter storms, link into discussion forums, create podcasts and find out more through social networking.
Getting Involved and Co-production

At the beginning of an improvement journey it’s important to draw together a team of people that are prepared to get involved, meet regularly and take a share of the work. If your team is small this might include everyone. If you’re trying to improve a very complex issue across multiple organisations, then it is likely that the team will be made up of people from different sectors such as social care, voluntary organisations, acute and primary care. If your work involves clinical improvements it is important to ensure that people with lived experience of mental illness and carers and are a core part of the improvement team and that their expertise is at the heart of the process.

Co-Production

Co-production refers to the contribution of patients, carers and citizens in the design and development of health services. It recognises the patient as an expert. Co-production encourages a positive re-balancing of power, between health professionals and service users. It fosters new types of collaborative relationships. For inspirational case studies see https://imroc.org

http://personcentredcare.health.org.uk/sites/default/files/resources/what_is_co-production.pdf
There is no set format of who should be in the improvement team, but often you’ll need a range of people that between them:

- Feel comfortable using measurement and data
- Are knowledgeable about the clinical, technical, process and experience elements of services
- Are good communicators
- Can give you feedback as ‘customers’ or ‘end users’ of the change you are trying to make
- Are committed and resilient
- Know how to evaluate whether a change has been an improvement
- Understand how and when to use QI tools.

It is essential to have the support of senior leaders too, who can create the conditions for QI by:

- Empowering people to be able to influence and make real improvements within their local service environment
- Giving support to test changes, and learn from those tests
- Removing barriers to change and enabling new ways of working to emerge
- Helping to make change permanent and spread new ideas.

You can find a summary of the skills required to be a good QI leader here: http://www.healthcareimprovementscotland.org/previous_resources/implementation_support/ready_to_lead.aspx
It can be useful to create a space where people can regularly come to think, discuss and plan together as the improvement journey progresses. Some people call this dedicated project space an Oobeya or ‘Big Room’ and hold all the improvement meetings here.

Participants use the visual information to monitor progress, discuss issues, share experiences and agree next steps in the project. The ‘Big Room’ process offers an environment for real-time decision making that engages everyone. It can be used to help identify improvements to individual healthcare processes, with reference to their wider system impact, and then implement them successfully.

To get the most value out of meetings in the ‘Big Room’ use the ‘Effective Meeting Skills’ process developed by Sheffield Microsystem Coaching Academy http://www.sheffieldmca.org.uk/UserFiles/File/Effective_Meeting_Skills_One_Page_Book.pdf
Understand the Human Elements of Change:
When on the improvement journey it is important to pay lots of attention to the human elements of change, as they are the most commonly cited reasons that improvement journeys fail.

Be prepared for it to take time to develop a shared purpose and that people will require different levels and types of evidence to become involved. Allow plenty of space for discussion, disagreement and debate early on, so that everyone feels heard and involved. Investment in this process will help to clarify your improvement aims and measures.

For most of the improvement journey, the role of an improver is to keep motivation levels high and coach others that are new to this way of working and thinking to increase their confidence in the process and their own skills. Identifying easy to achieve ‘quick wins’ early on in the journey can help to motivate people and get people on board.

Understanding the different ways people react to change can also help to improve communication between staff and ensure the success of improvement projects. Elizabeth Kubler-Ross² depicted the human reaction to change as a curve. The chart below depicts the emotions people experience when embarking on change or an improvement journey. The coloured spots give helpful hints about the best response to people at each stage of the change curve.

People will move through the change curve at different speeds, and may even move back and forth between emotions as time goes by. Maintaining good lines of communication and using empathy will help to understand how people are reacting to change.

Typically, in any group of people there are a few that can be called ‘innovators’ and ‘early adopters’ who like to get involved early and contribute to the co-design of the improvements (see diagram on page 29). These individuals are important in getting an improvement journey going and they can be hugely influential on the people in the ‘early and late majorities’ groups.
Trying to convince the mass of a new idea is **useless**. Convince **innovators** and **early adopters** first.

Be prepared to listen carefully to those WHO are reticent about the need for change (often from the ‘late majority’ or ‘laggard’ groups) as they can often skilfully articulate important reasons why immediate action is unwise or potentially unsafe. Often these groups can help to develop improvement measures that can be used to detect whether a change is really an improvement or not. When they can see that their concerns have been taken seriously they often become keen supporters of the improvement process.

**Case Study: The Importance of a ‘First Follower’**

Whether the change you’re bringing is big or small, having a great ‘First Follower’ can make all difference between standing alone and getting acceptance from those you’re leading. Someone on your team is likely to be more passionate about your idea than others. They may bring more input, understand what you’re trying to do better, and be fired up by the challenge or opportunity. Channel that to increase your chances of success; they are your ‘First Follower’.

Give them a key role in helping take the next steps. Make room for them and their ideas. Remember: “If the leader is the flint, the First Follower is the spark that makes the fire.”

This video demonstrates the power of the first follower.
www.youtube.com/watch?v=fW8amMCVAJQ

**Communication**

Successful improvement is achieved through motivating people to change and so it is crucial to communicate well. Good communication does not just occur by itself, it has to be built into your approach right from the start. Even if you do this well, it is likely that at certain times in your improvement journey you will need to pay much more attention to communication than you initially thought.

Successful improvement is achieved through motivating people to change and so it is crucial to communicate well. Good communication does not just occur by itself, it has to be built into your approach right from the start. Even if you do this well, it is likely that at certain times in your improvement journey you will need to pay much more attention to communication than you initially thought.
Cleary allocating roles to people in the team and wider stakeholder group can help to inform; how often and when you need to communicate, what information is needed and how best to present it.

One way of doing this is to use a tool known as a ‘RACI matrix’ to decide who is Responsible, Accountable, Consulted or Informed.

- **Responsible** – Who is completing the task.
- **Accountable** – Who is making decisions and taking actions on the task(s).
- **Consulted** – Who will be communicated with regarding decisions and tasks.
- **Informed** – Who will be updated on decisions and actions during the project.

For more information: http://project-management.com/understanding-responsibility-assignment-matrix-raci-matrix

The Health Foundation offer a fantastic ‘Communications in health care improvement’ toolkit for health care professionals working in improvement who want to understand and use communications to better plan, implement and spread their work. See more at: www.health.org.uk/collection/communications-health-care-improvement-toolkit

“The single biggest problem in communication is the illusion that it has taken place.”

George Bernard Shaw
Stakeholder Engagement

To improve service delivery processes you may need to actively engage a wide variety of people who have an interest in your project, such as clinicians, administrative staff, patients and user groups. Thorough analysis and proper planning will help.

Here are some key steps to effective stakeholder management:

1. **Identify your stakeholders**
   Assemble a group of subject matter experts to brainstorm a list of all the people and groups likely to be affected by the proposed change. See our website for a list of ‘9C’s’ which might help you identify who your stakeholders are.

2. **Prioritise your stakeholders**
   Analyse the stakeholders in terms of their power over your project or change initiative.

3. **Understand your key stakeholders**
   It is important to know more about your key stakeholders and their level of interest in your project, such as how are they likely to feel about and react to your intended project outputs?
### 4. Managing your stakeholders

From the stakeholder mapping and analysis you can devise a communications plan that sustains supporters’ interest and commitment and wins round doubters. A simple plan will include the following information for each stakeholder or group of stakeholders:

- Method of communication: presentations, emails, newsletter, meetings, etc
- Frequency of communication: monthly, weekly, daily, etc
- Key messages you want to give regarding progress.

<table>
<thead>
<tr>
<th>High power</th>
<th>Manage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Key stakeholders who should be fully engaged through full communication, co-production and consultation.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Low power</th>
<th>Inform</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monitor</td>
<td>It may be helpful to take steps to increase the influence of groups in this category through active consultation to stimulate co-production.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Low impact / stake holding</th>
<th>Inform</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low impact / stake holding</td>
<td>It may be helpful to take steps to increase the influence of groups in this category through active consultation to stimulate co-production.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Low impact / stake holding</th>
<th>Manage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low impact / stake holding</td>
<td>Key stakeholders who should be fully engaged through full communication, co-production and consultation.</td>
</tr>
</tbody>
</table>
Discover and Understand the Problem
The methods and tools in this section help you to go deep and identify areas for improvement. They use data and information to find issues that if improved will have the biggest impact for the least effort. They will also help you to collect baseline facts and figures so that when you begin to make a change you will know if it was an improvement or not.

You don’t have to use all of the tools; just pick the ones that are most relevant.
Reviewing the Evidence and ‘Benchmarking’

It is important not to waste time reinventing solutions. Undertaking a literature search, looking at systematic reviews of evidence, topic scoping or accessing web sites for examples of other people’s work can show you what’s possible and give you ideas of how to get started.

**Tip:** This may seem like a lot of effort, particularly if you and your team are excited about making a change. However, taking the time to look at what has (and hasn’t) worked well elsewhere can give you some great ideas and save a lot of time in the long run (www.healthcareimprovementscotland.org/about_us/what_we_do/knowledge_management/knowledge_management_resources/methodology_toolkit.aspx)

If you’re unsure how to undertake a literature review, check if your organisation has access to a clinical library and staff who may be able to help you. You can also get access to online resources such as Athens (www.openathens.net) which will give you access to thousands of online articles and reviews.
Look for mental health QI case studies at www.mindsetqi.net and the international journal of healthcare improvement, BMJ Quality and Safety, is also an excellent resource for finding out about other improvement projects (http://qualitysafety.bmj.com). You can also look at NHS Trust websites that have structured improvement approach in place. An evidence toolkit developed for use by commissioners is available here: www.nhsevidencetoolkit.net

Benchmarking is a term describing the process of assessing how your team or systems compares to others, either locally, nationally or across the world. The process was developed by Xerox with the intention that you find out who is ‘best in class’ and actively learn from best practice. It can help a team articulate a case for change and make contact with other teams across the UK to learn about their approach. It can also help to motivate your team to improve, as you have evidence of what ‘good’ looks like.

**Useful Links:**
Measure local baselines using the Mental Health Information Network fingertips tool (http://fingertips.phe.org.uk/profile-group/mental-health)

Find out about how GPs/CCGs compare on prescribing (https://openprescribing.net)
Understanding your local context, systems and culture

Improvement happens within a complex system, context and culture. There are likely to be things in your system, context or culture that can either support your improvement work or make it harder.

- What does your benchmarking information tell you about your local context?
- What patterns can you see from your service data?

You might want to look at your team. Do you have a clear aim you all work towards? What are your patterns of working, how do you best communicate with each other and with your service users?

Do people feel safe? Listened to? Do people feel empowered to make changes? Is it a good place to be in? Does the building and technology you use support or hinder your work? Is there good access?

A good place to start in understanding your local system is to undertake a 5Ps assessment, a key tool from microsystem theory derived from Dartmouth Institute (www.clinicalmicrosystem.org). It looks at your system with regard to its:

- **Purpose:** ‘our system exists to...?’

- **Patients:**
  - Who do we care for? Are there any sub-populations we could care for differently?
  - What support do we need?
  - How satisfied are our patients/carers?
• **Professionals:**
  - Who provides care and who supports them?
  - What skills and talents are required?
  - What is the role of IT?
  - How is staff morale?

• **Processes:**
  - How is care delivered? (core/supporting processes)
  - Do our operating hours match our customer’s needs?
  - How does technology support us?
  - How do we learn from our mistakes?

• **Patterns:**
  - Health outcomes
  - Cost of care
  - Interaction with other systems
  - Common work activities
  - What’s it like to work in the team?
  - Leadership
  - How often is quality and safety discussed?
  - Team traditions and rituals

The following link will be of help in carrying out a 5Ps assessment in a way that makes sense for your team:
[www.clinicalmicrosystem.org/workbooks/](http://www.clinicalmicrosystem.org/workbooks/)
Developing a Culture of Safety

A culture of safety is one where safety is seen as everyone’s responsibility, and not as someone else’s responsibility. Leaders in such a system are responsible for creating systems that allow safety concerns to be raised without staff feeling fearful of the consequences or feeling that nothing will change as a result.

Surveys that measure staff perceptions about the organisation’s culture regarding safety are often useful tools to assess the presence of a culture of safety, and can be useful in identifying areas for improvement.

Useful links:
www.health.org.uk/publication/measuring-safety-culture
www.ihi.org/resources/Pages/Changes/DevelopaCultureofSafety.aspx
www.ihi.org/education/ihiopenschool/courses/Pages/default.aspx (see Course PS 106: Introduction to the Culture of Safety)
Mapping what you do now

It can be really helpful to see what you currently do, as it is common to find out that the reality is far from what you expected. It’s also revealing to look at what you currently do from different perspectives; those of the patient, staff member, carer, commissioner, the community, citizen, police, ambulance team, GP, social care, businesses and other teams etc. Whilst your potential improvement might work in your bit of the system, will a change have any impact on others up or down stream?

What is the experience like of your current service?
Is it equal for all parties? Is everyone satisfied?

Tools that can help with mapping and can contribute data for your 5P assessment include:

**Patient experience data**
Patient experience belongs at the heart of QI. It can offer a human perspective on processes and pathways that are all too often reduced to facts and figures. Work that is well informed and influenced by patients has the potential to be more successful than projects that assume patient need. Patient experience data can be generated through formal Patient Reported Outcome and Experience Measures alongside focus groups, interviews and surveys designed to capture qualitative patient experience. It can also be crowdsourced through social media.
Patient Journey Shadowing
One simple way and quick way of generating empathy and understanding of the patient experience is to shadow someone on their journey through your health care system. Not only does this experience helps us to understand the journey from a human perspective and to experience the pathway alongside the patient, it often highlights barriers, steps that add no value and bottlenecks that staff are unaware of.

Staff experience data
The experiences of staff are invaluable in measuring the impact of QI. Asking staff what they understand to be the barriers and facilitators to success is an important part of the QI pathway. Engaging staff will often shed new light on stubborn problems and can lead to innovation.

How do we measure staff experience?
In order to understand staff experience it is necessary to ask them and in a way that captures the impact of the QI pathway. Survey methods are a useful and effective way to collect data on staff perception and attitudes but careful thought needs to be given to selecting the right tool for the job. There are a number of existing validated surveys that can be used, but before selecting which one is right for your improvement project, give some thought to:

- How the survey results will be used
- How the survey will be administered (interviews / paper questionnaires / online)
- What staff groups should be surveyed and how many
- Who will design and administer the questionnaire and analyse the results

Themes for surveys can be generated through qualitative methods such as focus groups, interviews and patient journeys.
For more information on how to gather and analyse staff data use the following link; www.qihub.scot.nhs.uk/knowledge-centre/quality-improvement-tools/gathering-experience-and-perception-data.aspx

**Evaluation**

One of the most important aspects of QI is the process of evaluation, as it helps to learn about what went well and what we could do better next time. Ideally it should be embedded from the beginning of every QI project and linked to the aims and measures of your driver diagram.

These simple videos will show you the basics:
Evaluation embed video links: http://tinyurl.com/nqncotz

**Experience Based Co-Design Toolkit**

This technique brings patients and staff together to design services and processes and uniquely focuses on emotional ‘touch points’; significant emotional events, either negative or positive, experienced by patients whilst in receipt of healthcare. Discussions, interviews and videos of patient’s experiences are used to provide insight and to facilitate change.

The Kings Fund EBCD Toolkit available at www.kingsfund.org.uk/projects/ebcd is an online comprehensive tool that guides you step by step through the process.

**Process mapping**

Process Mapping is used to develop a ‘map’ of a process within a system. It is often used to map all of the steps in a patient’s journey through a health care system. Although it is a simple tool, it can be extremely powerful for those involved. Often, it may be the first time that all the people involved get an appreciation of the whole pathway not just ‘their’ bit. Process mapping can be used to help a team understand where the problems are and identify areas for improvement. It can also be used to show how several microsystems connect with each other and map the flow across the whole system.
How to use it
The aim of process mapping is to make things clear and to provide insight. Simplest is often best!

First of all, decide where your process map will start and finish. A good place to start for clinical teams is from referral into a service to when a person is discharged. This is a complicated system, so stick to the main steps in the patient journey; identifying 5 to 10 of these big steps in half an hour is a good start. This helps to establish the scope of the process and identify significant issues. Here is a simple example of such a ‘high level’ process map.

Key to process map
- **Box** - Shows the activities of the process.
- **Diamond** - Represents the stage in the process where a question is asked or a decision is required.
- **Oval** - Shows the start of a process and the inputs required. Also used to mark the end of the process with the results or outputs. The symbol is the same for the start and end of a process to emphasis interdependency.
- **Arrows** - Show the direction or flow of the process.
Once you have your high level process map you will start to be able to understand how the process works and see where there are problems; note these on the high-level process map so that everyone can see where they occur in the system. If needed, you can then carry out a more detailed process map looking at a specific part of the system.

When you look at your process map, try to consider how the person moving through the system sees it; which steps are valuable to them? Being seen for an assessment will probably be valuable, whereas time sitting on a waiting list won’t be. Wherever possible, try to remove the steps in the process that aren’t valuable or try to speed them up or reduce the impact that they have on the valuable steps.

The following resource may be helpful:
Using a Spaghetti Diagram

A spaghetti diagram is a quick and easy tool that can be used to trace the path of an item or activity or person through a process. It can help you to identify wasteful or unnecessary steps in the work flow and opportunities to make the process more effective.

Below is an example of a spaghetti diagram of the layout of Child and Adolescent Mental Health admin office. It maps how members of staff move around the office. This simple data, captured quickly on just one working day, helped to redesign the office to save time, make the workplace safer and staff feel less frustrated.

Child and Adolescent Mental Health Service Admin Office
To learn how to do this look at:
http://www.qihub.scot.nhs.uk/knowledge-centre/
quality-improvement-tools/value-stream-mapping.aspx
http://asq.org/learn-about-quality/process-analysis-tools/
overview/spaghetti-diagram.html

Mapping your system can help you discover lots of issues and problems and then we need to understand why they are happening and what their root causes are. A range of tools exist to help you do a deeper dive.

Root Cause Analysis

What is Root Cause Analysis?
What we see as a problem that needs fixing is often not the cause of the issue at hand. Sometimes we need to explore the problem in depth to find out the true cause, or, the root cause.

Root Cause Analysis (RCA) investigation is a well-recognised way of doing this. It is used to identify areas for change and to develop recommendations which deliver safer care for patients. It seeks to:

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

There are various tools you can use to undertake a root cause analysis - for example, the Five Whys Technique.
An example of ‘5 Whys’ in practice:

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

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

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

WHY: Did the mental health nurse injure herself?

BECAUSE: She tripped over a rug.

WHY: Did she trip over the rug?

BECAUSE: She failed to notice it.

WHY: Did she fail to notice it?

BECAUSE: She was in an unfamiliar environment.

WHY: Was she in an unfamiliar environment?

BECAUSE: She was undertaking a new home visit and had not had time to undertake a risk assessment of the environment.

WHY: Had she not had time to undertake a risk assessment?

BECAUSE: She was significantly delayed by traffic and was late arriving to the appointment.

Now start to think of solutions
A fishbone diagram (so-called because the diagram resembles the skeleton of a fish!) is used when there are multiple causes for an effect or problem. A fishbone diagram can be used by a team to sort ideas into useful categories that can then be investigated further.

For an example, see below:

**Fishbone diagram**

**Patient**
- Break down of family unit
- History of substance misuse
- Intermittent periods of homelessness

**Communication**
- Carer not consulted
- Mental health services only communicating with solitary GP
- Information from other agencies not available

**Environment**
- No supported housing available

**Task**
- No assessment of housing needs
- Risk assessments and support planning were inadequate and incomplete
- No carer’s assessment undertaken
- Delay in collecting medication from pharmacy

**Skills and knowledge**
- Staff had not had carers assessment training

**Organisation**
- Risk assessments not shared with carer.

For more information on using the Fishbone please watch this short video; www.youtube.com/watch?v=387chd8p54c&list=PLD0CB3B29BC1E2502
Identifying the ‘Vital Few’: using a Pareto analysis

Pareto analysis is a creative way of deciding where to focus improvement efforts to have the greatest impact by identifying the ‘vital few’ from the ‘trivial many’. It uses the Pareto Principle (also known as the 80/20 rule); this is the idea that 80% of the work in a system is caused by 20% of the causes. For example, you may have identified a high rise in the number of complaints. The complaints concern a variety of causes, but you don’t know which to tackle first to have the greatest impact. Using the Pareto analysis on the data below it is clear that focussing how to improve team communication, care plans and the quality of care will have the biggest impact.

Although it looks complicated, there are lots of tools out there to help you. For more information on using Pareto Charts please watch this short video; www.youtube.com/watch?v=zbDRH2ASyqQ

An easy to use template can be found here:
http://asq.org/learn-about-quality/quality-tools.html
Get Creative, Design and Test
So you now know your system really well. You know what you do well and what needs improvement. You also know which areas if improved will give you the greatest impact.

It is useful to organise this information onto one page, particularly highlighting the areas of your system that can have a positive influence your goal for improvement. One of the best ways of doing this is by using a driver diagram.
Driver Diagram

Driver diagrams are a type of structured logic chart with three or more levels:

- a goal or vision: a clear aim
- the high-level factors that you need to influence in order to achieve this goal (called ‘primary drivers’)
- specific projects and activities that would act upon these factors (called ‘secondary drivers’).

Four steps for a successful driver diagram:

1. Set out what you want to achieve in your Aim. Make it specific and measurable.
2. Identify the big topics and important areas that need to be addressed to achieve your aim in the Primary Drivers, such as Patient Choice.
3. Consider which activities can positively influence the Primary Drivers. In the case of Patient Choice it might be complaints or a ward round. These are Secondary Drivers, which can influence more than one Primary Driver and help you identify relevant Change Ideas.
4. Think very carefully about your Change Ideas. They should have an effect on at least one Secondary Driver and help achieve your aim. These are the important changes that will go into your project plan.
To improve the inpatient experience for adult female inpatients on a mental health unit in order to increase satisfaction by 25% in 10 months.

**Ward Environment**
- Bed occupancy
- Improve ward
- Nursing input
- Pharmacy input
- Family Support

**Multidisciplinary Ward Team Process**
- Review of delays at weekly bed meetings
- Ensure 1:1 time with named nurse
- Offer pharmacy advice to every patient during stay
- Train one staff member on each ward to use support skills

**Patient Choice**
- Increase access to CBT and peer support

**Ward Activities**
- To change OT programme content
For a range of great mental health driver diagrams see the Scottish Patient Safety Programme Mental Health work-streams www.scottishpatientsafetyprogramme.scot.nhs.uk/programmes/mental-health

The programme includes the following packages with downloadable Driver Diagrams:

- Communication at Transition Driver Diagram and Change Package
- Leadership and Culture Driver Diagram
- Medicines Management Driver Diagram and Change Package
- Restraint and Seclusion Driver Diagram and Change Package
- Risk Assessment and Safety Planning Driver Diagram and Change Package

Now that you have your driver diagram you can see what needs to be improved. The design step of the journey helps you to look at the secondary drivers and generate ideas about how they can be improved.

At first your aim is to generate lots of fresh ideas with as many key stakeholders as possible. Once you have agreed the idea you think will make the biggest change you then begin the prototyping and testing process.
Creative Idea Generation

Teams can be supported to generate innovative and exciting ideas using many simple techniques. A great resource is the Thinking Differently toolkit from NHS Institute for Innovation and Improvement
www.slideshare.net/NHSIQlegacy/thinking-differently-32932194?qid=e91ec380-f002-4b24-bee6-0368ba8840a8&v=qf1&b=&from_search=5

and www.mindtools.com

Ideas can then be streamlined into themes or steps in a process in preparation for group decision making.

Dotmocracy
Dotmocracy is a rapid and effective tool for workshops and meetings. It allows participants to show support for ideas and to vote through mark making with dots or stickers or through ratings systems.

What is Dot Voting?
• Ideas / proposals / statements displayed
• Participants encouraged to vote by mark making / applying stickers
• Dots aggregated to identify winning ideas
  ü Rapid and visual
  ü Easy to run and understand

  X Vote splitting can result in skewed results
  X New ideas / creativity limited as no mechanism to generate ideas along the way
  X “Choice overload” too many options can cause confusion
What are Ideas Rating Sheets?
- Participants generate own ideas individually
- Write statement, one idea per sheet
- All participants rate their own level of agreement, one dot per statement
- Results show collective attitude towards each statement / facilitates the formation of collective decisions
- Effective for larger groups
- Can generate new ideas along the way
- Immune to vote splitting
- Built in spaces for further commenting

Prototyping
Prototyping is traditionally done with physical objects, for example a new car design. However in QI, prototyping tends to be about processes, for example patient journeys or service redesign. This part of the improvement journey is important as it channels the group’s wider ideas into actionable tangible plans. For example, an identified need to improve cardio vascular health for people with serious mental illness may result in the development of a new primary care pathway as well as improved patient materials. Prototyping of the patient pathway will enable it to be seen at all angles by everyone who has a stake in it. This approach is often seen as a “greenhouse” to nurture good ideas and to grow ideas before road testing them in practice using PDSA cycles.
Plan Do Study Act (PDSA) is a simple method for testing your ideas.

**Act**
- What changes are to be made
- Next cycle

**Plan**
- Objective
- Questions / Predictions
- Plan to carry out cycle (who, what, where and when)

**Study**
- Compare Analysis of data
- Compare data to predictions
- Summarise what was learned

**Do**
- Carry out plan
- Document problems and observations
- begin analysis
The approach relies on three key questions:

- What are we trying to accomplish? (Develop a clear aims statement)
- How will we know that a change is an improvement? (Decide what you will measure)
- What changes can we make that will result in improvement? (What are your ideas to make improvements – refer to ideas from your Driver Diagram, see page 53).

These questions are answered by testing change ideas using PDSA cycles, which are a fantastic way of taking ideas, trying them in practice, learning what works and what doesn’t to help you achieve success.

**Plan:** the change you want to test  
**Do:** carry out the test  
**Study:** observe and learn from the test  
**Act:** determine what should happen next based on the success of the test.

It usually takes a number of short testing cycles to refine a change idea before it is ready for full implementation.
What are we trying to accomplish?

How will we know that a change is an improvement?

What changes can we make that will result in improvement?

What are we trying to accomplish?

Learning from DATA

Changes that result in improvement

Implementation of change

Follow-up test

Wide-scale tests of change

Very small scale test

Hunches, Theories, Ideas

Very small scale test

Follow-up test

Wide-scale tests of change

Implementation of change

Changes that result in improvement

Learning from DATA

Hunches, Theories, Ideas

Very small scale test

Follow-up test

Wide-scale tests of change

Implementation of change

Changes that result in improvement

Learning from DATA

Hunches, Theories, Ideas

Very small scale test

Follow-up test

Wide-scale tests of change

Implementation of change

Changes that result in improvement

What are we trying to accomplish?

How will we know that a change is an improvement?

What changes can we make that will result in improvement?
Start with a small scale test and use a simple form to capture your aim, your plan, what you actually did and what you learnt through doing it. This will then inform your next PDSA cycle. Download a free version from Healthcare Improvement Scotland http://www.healthcareimprovementscotland.org/our_work/patient_safety/tissue_viability_resources/plan_do_study_act_pdsa.aspx

**Aim:** there are two types of aims you might use when developing your PDSA cycles.

**Overall Aim (overall goal you wish to achieve):** To increase the number of annual physical health assessments for people with serious and enduring mental illness at the GP practice from 80% to 100% by 31.3.17

**Specific Aim:** To test an assessment clinic approach with a primary care practice nurse (David) and a registered mental health nurse (Suki) for one day to see if this approach:

- Increases the number of people assessed
- Is easier for people to access than attending for a standard GP appointment
- Increases the practice nurse’s confidence to undertake these assessments

Every goal will require multiple smaller tests of change.

### Describe your first (or next) test of change:

<table>
<thead>
<tr>
<th>Person responsible</th>
<th>When to be done</th>
<th>Where to be done</th>
</tr>
</thead>
<tbody>
<tr>
<td>David</td>
<td>6.12.16</td>
<td>GP surgery</td>
</tr>
</tbody>
</table>

To run a 3 hour bookable assessment clinic in a GP surgery with a practice nurse and a registered mental health nurse
### Plan

<table>
<thead>
<tr>
<th>List the tasks needed to set up this test of change</th>
<th>Person responsible</th>
<th>When to be done</th>
<th>Where to be done</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Co-design this idea</td>
<td>David and Suki</td>
<td>16.11.16</td>
<td>GP surgery</td>
</tr>
<tr>
<td>• Calculate how many assessment slots can be offered in 3 hours</td>
<td>Immy</td>
<td>20.11.16</td>
<td></td>
</tr>
<tr>
<td>• Find out how many patients registered at the practice may require this service</td>
<td>Immy</td>
<td>20.11.16</td>
<td></td>
</tr>
<tr>
<td>• Phone and offer an assessment</td>
<td>David</td>
<td>21.11.16</td>
<td></td>
</tr>
<tr>
<td>• Print off the two likert scales for the evaluation and have pens and clipboard ready</td>
<td>Suki</td>
<td>17.11.16</td>
<td></td>
</tr>
</tbody>
</table>

### Predict what will happen when the test is carried out

**We predict that:**

- The number of physical health assessments will increase
- All assessment slots will be used
- People attending will rate this service as being easier and better than the current system
- The practice nurse will feel more confident

### Measures to determine if prediction succeeds

- Number of completed health assessments
- Attendance rates and the number of slots not filled
- Simple survey and open questions at the end of the clinic will capture people’s opinions
- Baseline Likert scale of confidence level taken at start of day and at end of day, combined with qualitative feedback
Do - Describe what actually happened when you ran the test
12 assessments were offered. 11 people attended. One person phoned to say they were ill and could not attend. The short survey about the clinic was easy to use and 100% people filled it in. The qualitative feedback was easy to read and understand.

Suki led the first four assessments using the protocol that had been tested in PDSA cycle 4. David then ran the rest, asking for feedback and reflection. David’s confidence in the process rose.

Study - Describe the measured results and how they compared to the predictions
The total number of physical health assessments completed in the GP practice increased by 11.

All assessment slots will be used: 11 out of 12 assessment slots were used. One person was ill on the day so could not attend.

People attending will rate this service as being easier and better than the current system: 10 out of the 11 people who attended said that this service was better, faster and easier than booking in to see their GP like normal and that they would use this service again if it was available next year.

The practice nurse will feel more confident: David reported feeling much more confident that moving 4 points on the Likert scale and now feels that he would feel confident to run a clinic on his own.

Act - Describe what modifications to the plan will be made for the next cycle from what you learned
Next test: David to run the clinic in the same format, for a day next week but on his own this time.
Keeping a record of ‘lessons learned’ can be an invaluable way of tracking adaptations you or others had to make. It can help you when planning future improvement projects, as well as being useful for others working in the same area. Mental Health services are a good example of what is known as a ‘complex adaptive system’. This means that changes in ‘your’ part of the system may have an unforeseen impact on other microsystems. Any learning you make here may be really helpful for other people wanting to adopt your ideas.
Measure, Evaluate, Learn and Re-Test
Measuring for Improvement

Measuring for improvement is different from measuring to manage performance or for research purposes. It does not seek to prove or disprove whether clinical interventions work – it seeks to answer key questions; “How do we make it work here?” or “How do we know a change is an improvement?”

It is critically important to undertake a baseline measurement, and to continue measuring against the baseline throughout the project.

Planned well, measurement should be:

• Highly relevant
• Quick to produce, analyse and share
• Motivating

It is better to measure little and often, gathering data as you go rather than waiting for one big collection at the end of the project. That way if your PDSA cycles aren’t working, you will find out fast.
If you would like to learn more the Institute for Healthcare Improvement (IHI) offer a great introductory training in measurement through their Open School OJ 104: Interpreting Data: Run Charts, Control Charts, and other Measurement Tools.

It is helpful to keep these three types of measures in mind when planning your driver diagram and PDSA cycles.

Types of measures

1. **Outcome measures** reflect the impact on the patient and show the end result of your improvement work.
2. **Process measures** reflect the way your systems and processes work to deliver the outcome you want.
3. **Balancing measures** reflect what may be happening elsewhere in the system as a result of the change. This impact may be positive or negative.

A run chart is the best tool to measure the cumulative impact of your PDSA cycles over time because small amounts of data can be collected regularly and compiled to review the impact of a change over a period of time.

Run Charts focus on variation.

- A run chart acts a bit like a camcorder, showing you every up and down.
- Whereas snapshot audits are more like a camera, taking a picture of what things look like at just one point in time.
To show that things have sustainably improved you need to know that the change is not a one off.

Typically a Run Chart has two axis that measure: 1) the impact of change (vertical) against 2) time (horizontal). It gives a pictorial view of changes being tested or implemented and the impact that they have.

Regular discussion about what your process, outcome and balancing measures and your run chart is telling you in your meetings can help you to decide what PDSA cycle to do next, helping you to measure, evaluate, learn and retest until you achieve your aim.
Looking at your run chart you will start to see variation. We see variation everywhere: the weather, different cars, buildings, animals, people with different height and weight, and so on.

Variation can be naturally or artificially caused;

Natural variation is an inevitable feature of healthcare systems. Examples include:

- Differences in clinical presentation and need
- Socio-economic or demographic differences
- People’s skills, motivation etc.
Artificial variation is created by the way the system is set up and managed. If we were looking at access to services, for instance, we might see variation that is caused by our decisions to run services in particular ways like our choice of:

- Opening hours
- Location
- The working hours of staff and how staff leave is planned
- The order in which we see and treat patients
- How much work we group together and deal with in batches
- How we manage clinics to deal with priority or urgent cases

On your run chart you will plot the median over time. This allows you to be able to detect random or non-random variation;

- Random variation is caused by inherent parts of our system (processes) over time. They affect everyone working in the system and can affect all outcomes of the system.
- Non-random variation is caused by elements of the system that are not present all the time. They arise under specific circumstances and do not affect everyone within the system.
See how a run chart is used:
www.youtube.com/watch?v=YQd1QoMHYwU
www.youtube.com/watch?v=8e38RCU8-uA

A control chart, or Shewhart chart, allows you to identify common cause and special cause variation as the data is plotted against the mean rather than the median.

- Common cause describes variation that is predictable and expected. For example if a service is open from 9am to 5pm
- Special cause describes variation that is unusual or unexpected. Examples of special cause variation include a large-scale change creating a peak in demand, unexpected weather conditions, power cuts or train strikes and flu epidemics. On a smaller, but no less important scale, a safeguarding or risk issue could trigger a ‘special cause event’ in a clinic where other work has to be cancelled to help keep someone safe.

See how control charts are applied:
www.youtube.com/watch?v=9kmblj5zRtA
www.youtube.com/watch?v=lQ3woMr822U

An excellent overview:
www.youtube.com/watch?v=Za1o77jAnbw

For more information on presenting and understanding data for improvement projects see:
Implement and Spread
Helping other people to learn from your experience, helps to spread good practice to other areas. The temptation is to move on quickly to the next problem area you’ve identified. However, it is crucial that as a mental health community of practice we start to share our results and how we achieved them. We would like to encourage you to share your work widely through:

- Posting it on twitter by using #MINDSetQI and sending it to us
- Consider publishing it on BMJ Quality and Safety
- Sharing it within your local community

Don’t feel that other people will only be interested in projects that have been successful (although it’s always nice to share success stories!). It will be just as valuable to share information on projects that have not been successful or where things didn’t go quite to plan. This is where keeping a ‘lessons learned’ log as you go through your improvement journey is useful, as it will help you remember the ups and downs of delivery.

This final phase of the journey is often called ‘dissemination’ or ‘diffusion’; have a look at the table below for the difference between the two terms.
Spread – Dissemination versus Diffusion

Spread can be defined as the process of communicating and sharing new ideas or innovations outside the original system. This process is important because it increases the impact of successful improvement for more patients.

There are two widely-recognised approaches to spread: dissemination and diffusion. It must be noted that these are the two ends of the spectrum and not distinct and independent approaches.

When planning spread, a combination of both approaches is recommended as both can be effective ways of spreading innovations.
<table>
<thead>
<tr>
<th><strong>Definition</strong></th>
<th><strong>Dissemination</strong></th>
<th><strong>Diffusion</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Spread of innovation is planned, formal, centralised and occurs through vertical hierarchies.</td>
<td>Spread of innovation is unplanned, informal, decentralised and largely horizontal or peer-mediated.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Methods</strong></th>
<th><strong>Dissemination</strong></th>
<th><strong>Diffusion</strong></th>
</tr>
</thead>
</table>
| Wide range of methods: | | • Word of mouth through existing professional and social networks.  
| • Presentations at events and meetings | | • Use of opinion leaders, champions and boundary spanners can accelerate the diffusion of innovation.  
| • leaflets | |  
| • peer-reviewed publications | |  
| • formal dissemination programmes | |  
| • websites | | |

<table>
<thead>
<tr>
<th><strong>Strengths of approach</strong></th>
<th><strong>Dissemination</strong></th>
<th><strong>Diffusion</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>The message and means of communication used can be tailored depending on the target audience.</td>
<td>Fewer resources required, as it happens more naturally and organically. Effective if influential key people buy into the idea.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Weaknesses of approach</strong></th>
<th><strong>Dissemination</strong></th>
<th><strong>Diffusion</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>It usually attracts early adopters only. Often the initial will of early adopters fades away before any action has been taken.</td>
<td>No control of the message and its reach.</td>
<td></td>
</tr>
</tbody>
</table>
When looking at examples of improvement projects that have worked elsewhere, it’s important to remember that every team and service is different, both in its systems and processes and its culture. Culture can be defined as ‘the way we do things around here’, and consists of the spoken and unspoken rules that govern our day to day work. Some of these rules can be almost invisible to the people working within teams, as it has just become ‘how things are done’. Someone once said that ‘culture eats strategy for breakfast’, meaning that no matter how sensible an improvement project may seem, if it is too different to the current culture it’s likely to fail.

The graph above shows how a project that has been very successful in one area or in teams that are very similar (the blue dots) may be much less successful in teams that are very different in context (the pink dots).

IHI faculty Carol Haraden and Roger Resar developed the “Seven Spreadly Sins” to give teams practical tips for overcoming challenges that impede successful spread.

**Tip:** When you look at other improvement projects, think carefully about how similar or different your service may be to the one described in the project. Don’t be afraid to get in touch with the person who did the original project to get more information. This may seem very time consuming, but it may save some difficulty for you later on.
PRACTICAL TIPS FOR SUCCESSFUL SHARING

SIN: Expect huge improvements quickly then start spreading right away.
DO THIS INSTEAD: Create a reliable process before you start to spread.

SIN: Don’t bother testing—just do a large pilot.
DO THIS INSTEAD: Start with small, local tests and several PDSA cycles.

SIN: Check huge mountains of data just once every quarter.
DO THIS INSTEAD: Check small samples daily or frequently so you can decide how to adapt spread practices.

SIN: Give one person the responsibility to do it all. Depend on “local heroes.”
DO THIS INSTEAD: Make spread a team effort.

SIN: Require the person and team who drove the initial improvement to be responsible for spread throughout a hospital or facility.
DO THIS INSTEAD: Choose a spread team strategically and include the scope of the spread as part of your decision.

SIN: Rely solely on vigilance and hard work.
DO THIS INSTEAD: Sustain gains with an infrastructure to support them.

SIN: Spread the success unchanged. Don’t waste time “adapting” because, after all, it worked so well the first time.
DO THIS INSTEAD: Allow some customization, as long as it is controlled and elements that are core to the improvements are clear.

SOURCE: Institute for Healthcare Improvement – Seven Spreadly Sins. Used with permission.
Join the QI Movement

Hopefully a read through this guide has whetted your appetite to learn more about QI and put this into practice.

So, go on... get involved! Here are some tips to help you:

- Practice the habits of an improver and start to look around you with the eyes of an improver.
- Best of all- get involved by joining an improvement team or by leading a project yourself. It doesn’t matter how small the project is, just have a go and get used to the tools. Skill yourself up and increase your confidence. Remember that QI does not have to be delivered in a clinical setting; it works just as well for finance teams, hotel services, human resources teams, estates (the list goes on!).
- Share this guide with anyone you think may be interested.
- Free downloadable PDFs are available from www.mindsetqi.net
- Share your learning about improvement at MINDSet www.mindsetqi.net
- Link to us on twitter #MINDSetQI
- If you are interested in further QI training try this free online course: www.futurelearn.com/courses/quality-improvement
- For more excellent resources please visit East London NHS Foundation Trust Quality Improvement site: https://qi.elft.nhs.uk/resources/improvement-tools

We can all play an important role in transforming care. Lots of small incremental changes can make a HUGE DIFFERENCE!
Notes