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step 1

KIS introduction to quality improvement

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About this resource

This resource should help you to understand what quality improvement is (and is not), and includes a list of recommended reading and useful websites. It also contains recommendations from the King's Improvement Science team for people who are thinking of setting up a quality improvement project.

If any of the links within this resource do not open straightaway, please copy them into your browser.

How to cite this resource

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Who is this resource for?

This resource is for healthcare professionals, social care professionals, managers, students, researchers, patients, service users and members of the public who would like to learn about quality improvement, and/or who are planning to undertake a quality improvement project within a health service or social care service.

You should find this resource helpful if you are new to quality improvement, if you have not yet formulated an idea for a quality improvement project, or if you have an idea but do not know where to start.

If you are already familiar with quality improvement, or have previously carried out a quality improvement project, then you might be interested in our other KIS resources, especially the Step 2: KIS guidance for deciding what to improve and assessing the feasibility of a quality improvement project and Step 3: KIS template for planning and evaluating a quality improvement project. Both resources are available on the King's Improvement Science website: www.kingsimprovementscience.org/QI-guides.

There is a full list of our resources, and information about help available from the King's Improvement Science team, at the end of this document.



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What is quality improvement?

(often abbreviated to 'QI')

A commonly cited definition of quality improvement in healthcare is that of improvement experts Paul Batalden and Frank Davidoff (both are involved in the Institute for Healthcare Improvement and the Dartmouth Institute for Health Policy and Clinical Practice at Dartmouth Medical School in the USA). They define it as: 'the combined and unceasing efforts of everyone – healthcare professionals, patients and their families, researchers, payers, planners and educators – to make the changes that will lead to better patient outcomes (health), better system performance (care) and better professional development (learning).'¹

¹ What is 'quality improvement' and how can it transform healthcare? Paul Batalden and Frank Davidoff. *BMJ Quality and Safety*, February 2007, volume 16, issue 1. <http://qualitysafety.bmj.com/content/16/1/2>.





Quality improvement in healthcare is about involving all relevant people at all levels in making (and sustaining) efforts that result in positive changes

It is about making services:

- | safer (for example, by reducing infection rates or other untoward events that might cause harm);
- | more efficient;
- | more effective;
- | more equitable (for example, by ensuring that patients do not have to travel far from their home to receive a service, or that people receive health care that does not vary because of their personal characteristics, circumstances or background);
- | more timely (for example, by reducing waiting times);
- | more patient-centred (for example, by providing care in line with the needs and wishes of patients and service users).²

These efforts do not have to be big initiatives or programmes of work. Quality improvement is often about relatively small, contained projects that aim to change how things are done at a very localised level – reducing waiting lists in a clinic, or improving communication between staff on a surgical unit, for example. It is hoped that if such efforts are being made everywhere and by everyone, this will have an important accumulative effect overall, leading to improved health services.

² Institute of Medicine. Crossing the quality chasm: a new health system for the 21st century. Washington DC: National Academy Press, 1990, p244.





What sets quality improvement apart from other ways to improve health services?

There are many different terms used to describe efforts to improve health services – developing the evidence base, service development, primary research, transformation, innovation, for example.

Many of the terms mean different things to different people. For example, some people think service development is simply introducing a change. For others, it means trying out and evaluating a new way of working. However, other people describe trying out and evaluating a new way of working as ‘innovation’.

A quality improvement project is not the same as a clinical audit. Audits involve collecting data to show whether healthcare is being provided in line with the expected standards – they do not involve planning or introducing a change. However, a quality improvement project may include audits to measure the impact of a change.

What sets quality improvement apart is the use of a methodical approach to introduce change that is likely to benefit patients, service users and staff (and very unlikely to cause harm), the effects of which are measured regularly to determine whether an improvement has been achieved.



What sort of change should quality improvement projects aim to make?

Quality improvement projects often aim to make change by introducing evidence-based practice (clinical guidelines, for example), although this is not always the case. The way change (introducing training, for example) is made may also be tried and tested in previous projects.

Quality improvement initiatives should generally not introduce and test completely new treatments or ways of working: these should be tested using rigorous research methods that will demonstrate effectiveness and investigate potential negative, as well as positive, outcomes.





Quality improvement methods and tools

Quality improvement methods and tools are often used to help plan and carry out a quality improvement project, and to analyse the data that is collected as part of the measurement process. However, some quality improvement projects simply use a systematic approach and project management techniques.





Which quality improvement methods or tools?

There are numerous methods and tools that have been developed to support quality improvement projects: for example, Total Quality Management; Plan, Do, Study, Act cycles and the Model for Improvement; Lean thinking and Six Sigma.

At present, there is little evidence to show which approach works best.

NHS Quality Improvement Scotland (now Healthcare Improvement Scotland) conducted a review of quality improvement models in health care.³ This examined the literature on Total Quality Management, Continuous Quality Improvement, Business Process Reengineering, rapid cycle change, Lean thinking and Six Sigma. The authors concluded that the context within which the project takes place is more important in influencing its success than the specific improvement method used. They state: 'Importantly, there is no one right method or approach that emerges above the others as the most effective.'

It is worth noting that many quality improvement methods are quite similar, or at least not mutually exclusive. This means that it is possible to 'mix and match' different tools from different sources to create a bespoke approach that suits each particular project.

Your choice of which quality improvement methods or tools to use might be influenced by a number of factors such as your organisation's preference, inhouse expertise, or what seems to be the most practical/suitable approach for your specific project.

The Healthcare Quality Improvement Partnership has produced a useful guide about different quality improvement methods and tools (June 2015): www.hqip.org.uk/resources/guide-to-quality-improvement-methods

3 A systematic narrative review of quality improvement models in healthcare. Powell, Rushmer and Davis. NHS Quality Improvement Scotland, 2009. www.healthcareimprovementscotland.org/previous_resources/hta_report/a_systematic_narrative_review.aspx.





Measurement

One of the central principles of quality improvement is measurement or assessment. This might involve gathering quantitative (numerical) and/or qualitative (narrative) data.

It is important to collect information before a change is introduced to provide evidence that an improvement could be made. This measurement or assessment needs to continue throughout the project to demonstrate whether any changes introduced generate the intended improvement. Ideally, measurement or assessment should take place on an ongoing basis in order to show whether any positive changes are sustained over time. If we do not collect information to monitor the impact of a change, we can't be sure that an improvement has been achieved.

The Point of Care Foundation has a useful web page about measuring improvement: www.pointofcarefoundation.org.uk/resource/patient-family-centred-care-toolkit/measuring-improvement.





Stakeholders in quality improvement projects

A crucial part of a quality improvement project involves identifying, informing, consulting and involving groups and individuals who might be affected by the change you are proposing or who might be interested in your project – so called ‘stakeholders’.

Different stakeholders can influence your project’s success or failure in different ways. For example, staff members can help change how something is done in a service while patients or service users can offer valuable insights about the impact a proposed change might have on them. Stakeholders can also help to generate ideas for improvement and it is a good idea to discuss plans for change with representatives of groups and individuals likely to be affected/interested before you start to formulate your project proposal.



Stakeholder analysis

Stakeholder analysis is a process that can help to identify and plan engagement or involvement with the various groups of people and individuals who may be affected by your project (both positively and negatively) and/or who can help effect change, both within and outside of your organisation.

After you have completed a stakeholder analysis, you can work out how you are going to communicate with each group you have identified. See Communication: a practical resource at www.kingsimprovementscience.org/communication-practical-resource.

The analysis process can also help you think about the motivations of various stakeholders: some might act as facilitators (eg enthusiasm) or barriers (eg time pressures) to your project. You can then think about how any barriers might be addressed.

For further information about stakeholder analysis visit:
http://webarchive.nationalarchives.gov.uk/20121116082002/https://www.institute.nhs.uk/quality_and_service_improvement_tools/quality_and_service_improvement_tools/stakeholder_analysis.html.





Involving patients and service users

Patients and service users, and their relatives and friends, can make a massive contribution to a quality improvement project. Combining their perspective and expertise with the perspective and expertise of all staff involved in a service can lead to robust and realistic proposals for change.

There are many different ways to involve patients and service users. You may find KIS advice about patient and public involvement helpful. This resource is available on the KIS website: <http://www.kingsimprovementscience.org/kis-PPI-advice>.

The Healthcare Quality Improvement Partnership (HQIP) has produced a useful guide: Patient and public involvement in quality improvement (November 2017): <https://www.hqip.org.uk/resource/a-guide-to-patient-and-public-involvement-in-quality-improvement/>.

The HQIP runs an online course: Introduction to quality improvement for patients and public: www.hqip.org.uk/resources/introduction-to-quality-improvement-for-patients-and-public/.





Learning about quality improvement

It can be difficult to know where to start, or which resources to read when learning about quality improvement. The KIS team has compiled the following list so that you can get started quickly instead of spending time searching for useful and accessible materials.



Online learning

The Institute for Healthcare Improvement (IHI) is a leading not-for-profit organisation in the USA. There are several, free, open access online courses about quality improvement available on the IHI website:

www.ihl.org/professionalcourses.

The University of Bath has developed a six week MOOC (massive open online course) – Quality improvement in healthcare: the case for change:

<https://www.futurelearn.com/courses/quality-improvement>.

The Healthcare Quality Improvement Partnership (HQIP) is an independent UK organisation established to promote quality in healthcare, led by the Academy of Medical Royal Colleges, the Royal College of Nursing and National Voices. The HQIP website contains several online courses:

www.hqip.org.uk/resources/elearning.

King's Health Partners staff (employees at Guy's and St Thomas' NHS Foundation Trust, King's College Hospital NHS Foundation Trust, South London and Maudsley NHS Foundation Trust and King's College London) can access a simple and interactive online learning module about quality improvement via the King's Health Partners Learning Hub (staff need to register with the Learning Hub to access this material): <http://learninghub.kingshealthpartners.org/course/quality-improvement-projects>. The module will take about an hour to work through in total, but does not need to be completed in one sitting.





Other useful websites

- | The Health Foundation: www.health.org.uk
- | The Point of Care Foundation: www.pointofcarefoundation.org.uk
- | 'QI Life' from East London NHS Foundation Trust: <https://qi.eft.nhs.uk>
- | The King's Fund: www.kingsfund.org.uk/topics/quality-improvement



Easy-to-read guides

The Health Foundation is an independent charity that aims to improve health and health care in the UK. The Health Foundation's website (www.health.org.uk) contains many useful papers and resources, for example:

- | Quality improvement made simple, The Health Foundation, August 2013: www.health.org.uk/publication/quality-improvement-made-simple.
- | Overcoming challenges to improving quality, The Health Foundation, April 2012: www.health.org.uk/publication/overcoming-challenges-improving-quality.

These are both good introductory documents providing accessible information about common approaches to quality improvement, and the likely challenges people might encounter.

The Handbook of Quality and Service Improvement Tools, (former) NHS Institute for Innovation and Improvement, 2010, focuses on the process of devising and running a quality improvement project: http://webarchive.nationalarchives.gov.uk/20160805122939/http://www.nhs.uk/media/2760650/the_handbook_of_quality_and_service_improvement_tools_2010.pdf.





Learning from improvement science and implementation science

Learning from the overlapping fields of improvement and implementation science can strengthen your quality improvement project. This learning can, for example, inform your selection of methods or techniques used to introduce and sustain a change.



Improvement science

The Health Foundation defines improvement science as ‘finding out how to improve and make changes in the most effective way. It is about systematically examining the methods and factors that best work to facilitate quality improvement.’⁴

There is information about improvement science on the King’s Improvement Science website, www.kingsimprovementscience.org/what-is-improvement-science, and on the Health Foundation website, www.health.org.uk/theme/improvement-science.

⁴ Evidence scan: improvement science. The Health Foundation. January 2011. <http://www.health.org.uk/publication/improvement-science>.





Implementation science

The Implementation Science journal is an open access journal that publishes the results of research studies about implementation (<https://implementationscience.biomedcentral.com/>). It defines implementation science as 'the scientific study of methods to promote the uptake of research findings into routine healthcare in clinical, organisational or policy contexts.'⁵

Another definition of implementation science (from researchers) is: 'the study of theories, process, models and methods of implementing evidence-based practice.'⁶

Find out more about implementation science on the web pages of the Centre for Implementation Science (CIS) at King's College London: www.clahrc-southlondon.nihr.ac.uk/centre-implementation-science. You can also download the Implementation Science Research Development (ImpRes) tool and guide, developed by KIS fellow Louise Hull, from the King's Improvement Science website (<http://www.kingsimprovementscience.org/ImpRes>).

Anyone interested in improvement and implementation science can attend monthly seminars in south London about improvement and implementation that are organised by the KIS team: see <http://www.clahrc-southlondon.nihr.ac.uk/centre-implementation-science/research-team/seminars> for more information.

⁵ Welcome to implementation science. Eccles and Mittman. Implementation Science, 1: 1, 2006. <https://implementationscience.biomedcentral.com/articles/10.1186/1748-5908-1-1>.

⁶ Challenges, solutions and future directions in the evaluation of service innovations in health care and public health. Papousti et al. Health Services and Delivery Research, 4, May 2016. https://www.ncbi.nlm.nih.gov/books/NBK361182/pdf/Bookshelf_NBK361182.pdf.





Recommendations for people who are setting up a quality improvement project

Between 2013–2016, KIS supported five quality improvement projects at the three NHS organisations that are part of King’s Health Partners: Guy’s and St Thomas’ NHS Foundation Trust, King’s College Hospital NHS Foundation Trust and South London and Maudsley NHS Foundation Trust. The projects were instigated and led by health professionals and involved patients and service users as well as managers. You can find out more about each project on the KIS website: www.kingsimprovementscience.org/kis-projects.

The following recommendations are based on the experience and knowledge we gained while working on those projects.

Gain organisational support. Ensure that the goals of your improvement project align with the organisation’s priorities. Seek endorsement for your project from people in relevant leadership roles.

Allocate ample clinician time. Each quality improvement project needs a local clinical champion, and each clinical champion needs support and recognition from their organisation. Quality improvement projects must be allocated ample clinician time: support from your organisation’s leaders can help you negotiate that time.



Allow a realistic amount of time to enable you to engage everyone potentially affected by change. The views and experiences of all stakeholders are an important source of information for shaping any quality improvement project. Engaging stakeholders and developing mutually respectful relationships takes time and energy. This in turn has a profound effect on the timeframes required to carry out projects effectively.

Be clear about what patient and public involvement actually means, and allow enough time to nurture relationships. A shared understanding of patient and public involvement leads to more inclusive and effective involvement processes, and greater impact in quality improvement work. Good co-production relies on there being time and skills to facilitate collaborative relationships.

Use plain English where possible and explain any jargon that you use. The language that is used in quality improvement can be alienating and act as a barrier to people's engagement with improvement work. Be clear about definitions of terms you use: different terms can mean different things to different people.

Think carefully about how you are going to collect data to enable you to judge whether a change is successful in generating improvement. Regular measurement is central to quality improvement but often poses challenges. Relying on individuals to collect data (via regular manual audits, for example) is not a time-efficient or sustainable method. However, key data are often unavailable in electronic format. This is particularly likely to be the case where quality improvement projects seek to change and measure processes (the way that things are done) as well as clinical outcomes (the result for the patient or service user).

Be aware of potential difficulties when working across organisational boundaries. Collaboration across organisational boundaries is often a crucial aspect of quality improvement work but it is also very challenging in practice. It can be difficult for people to feel a sense of ownership for a project that spans organisational boundaries. Agree roles and responsibilities and discuss the benefits of collaborative working at the outset of the project.

If possible, work towards continuous improvement rather than conducting a project that has a defined end point. Positive change can be difficult to sustain beyond the life of a fixed-term project because staff members and the local environment change over time.

If you ask people to do something new or different, consider how to remove other tasks so they are not over-burdened. Quality improvement projects involve introducing and sustaining a change but staff cannot be expected to do more and more tasks.





Next steps

Once you have familiarised yourself with quality improvement methods and tools, the next step is to formulate an idea for a quality improvement project and assess whether the proposed project is feasible. See our resource [Step 2: KIS guidance for deciding what to improve and assessing the feasibility of a quality improvement project: www.kingsimprovementscience.org/KIS-QI-guide-step-2.](#)



Help available from the King's Improvement Science team

This resource was created by King's Improvement Science (KIS), a specialist team of improvement scientists, senior researchers and fellows, based at King's College London. KIS was set up in 2013 by King's Health Partners, an academic health science centre comprising three NHS trusts – Guy's and St Thomas' NHS Foundation Trust, King's College Hospital NHS Foundation Trust and South London and Maudsley NHS Foundation Trust – as well as King's College London. The work of the KIS fellows has been funded by Guy's and St Thomas' Charity and the Maudsley Charity. The work of KIS fellow Louise Hull has also been supported by the NIHR CLAHRC South London.

KIS is now part of the [Centre for Implementation Science](#) at King's College London. The Centre for Implementation Science is part of the [NIHR CLAHRC South London](#).

KIS resources

The KIS team have developed the following resources:

Quality improvement guides

- Step 1: KIS Introduction to quality improvement
- Step 2: KIS guidance for deciding what to improve and assessing the feasibility of a quality improvement project
- Step 3: KIS template for planning and evaluating a quality improvement project

KIS advice about patient and public involvement

Implementation Science Research Development (ImpRes) tool and guide

KIS guide to evaluation resources

Communication: a practical resource

KIS glossary of terms used in improvement and implementation

You can download the resources at:

www.kingsimprovementscience.org.

This website also contains information about quality improvement projects carried out by the KIS team.

The KIS team can advise anyone who wants to carry out a quality improvement project in south London, or further afield.

Advice clinic for quality improvement and implementation science projects

If you are planning a quality improvement or implementation science project and need expert advice, you can book a place at our advice clinic at King's College London. To find out more, visit: www.clahrc-southlondon.nihr.ac.uk/training-and-education/advice or email: clahrcshortcourses@kcl.ac.uk.

Monthly seminars about improvement and implementation

Leaders in the field of improvement and implementation share and debate their experiences at these monthly seminars. They are open to anyone interested. Find out more: www.clahrc-southlondon.nihr.ac.uk/centre-implementation-science/research-team/seminars.

Evaluation

Any organisation can commission the KIS team to evaluate improvement / implementation programmes or projects, or to help set up ongoing evaluation procedures. We are also happy to discuss the possibility of collaborating as an evaluation partner on a grant application. Email us to find out more: kis-team@kcl.ac.uk.

Training and education

Members of the KIS team teach on the following courses:

Principles of Implementation and Improvement Science:

This is a standalone masters module at King's College London. It involves 10 days in the classroom spread over one or two terms. For more information, email clahrcshortcourses@kcl.ac.uk.

Implementation Science Masterclass: This is a two-day Masterclass for health professionals and researchers held each summer in London. Patients and service users who have experience of research may also be interested. Find out more: www.clahrc-southlondon.nihr.ac.uk/short-courses.



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