

# Chapter 4

## Identifying and justifying the need for service improvement

*Gillian Janes and Catherine Delves-Yates*

### NMC Future Nurse: Standards of Proficiency for Registered Nurses

This chapter will address the following platforms and proficiencies:

#### **Platform 1: Being an accountable professional**

- 1.8 demonstrate the knowledge, skills and ability to think critically when applying evidence and drawing on experience to make informed decisions in all situations.

#### **Platform 6: Improving safety and quality of care**

- 6.4 demonstrate an understanding of the principles of improvement methodologies, participate in all stages of audit activity and identify appropriate quality improvement strategies.
- 6.7 understand how the quality and effectiveness of nursing care can be evaluated in practice, and demonstrate how to use service delivery evaluation and audit findings to bring about continuous improvement.

#### **Platform 7: Co-ordinating care**

- 7.12 demonstrate understanding of the processes involved in developing a basic business case for additional care funding by applying knowledge of finance, resources and safe staffing levels.

## Chapter aims

After reading this chapter you should be able to:

- demonstrate an awareness of a range of appropriate evidence that can be used to identify quality improvements in practice;
- determine appropriate quality improvement-based solutions in practice based on evaluation of potential options, using relevant tools and frameworks;
- understand how to scope a sustainable quality improvement idea;
- understand the importance of planning to evaluate and measure the effectiveness of the improvement project.

*It seemed obvious to me from my first day that people got bored and more anxious the longer they had to wait to be seen. They were probably worried about the consultation and had nothing else to think about except watching the clock. Why aren't we capitalising upon this 'free time' by making a range of health promotion leaflets available in the waiting area?*

(Shella, student nurse, GP surgery)

## Introduction

Previous chapters have explored the nurse's role in improvement, and enabled you to assess and develop your improvement capability and how to work effectively with others to lead change. However, before any change can be implemented, a specific improvement intervention must first be identified and then justified, not only to convince others to support it, as successful, sustainable change is collaborative, but also to ensure there is benefit for all involved.

Identifying the need for improvement and then the appropriate solution is not always straightforward. Often, especially when you are new to an area of practice or context, ideas for improvement may jump out at you; this may be excellent practice you have seen elsewhere (sometimes termed 'learning from excellence' or 'positive deviance') or ways to enhance current care processes or outcomes (as we saw with Harry in Part 1 of this book). Such revelations can be a consequence of the 'fresh eyes' perspective we discussed in Chapter 1, or perhaps you bring a particularly curious or creative attitude to your work. However, what seems obvious to you may not even be recognised or viewed with the same motivation for change by colleagues. You may already have found yourself in this position, in a similar way to Shella, who shared her thoughts with us at the start of the chapter. While Shella's idea may be a good one, she needs to explore potential solutions and investigate the evidence to determine what the best solution might be. Ensuring there is evidence to underpin any improvement is crucial, plus as we learned in Chapter 3, influencing and persuading others is an important improvement skill that often also involves justifying any proposed change.

When undertaking a small or student-led improvement as part of a learning programme, for example, it is very unlikely you will be required to submit a formal **business case**, though more information on this is provided in the further reading section at the end of the chapter if needed. What you will need to do, however, is address all the issues that a formal business case would require you to consider. This involves providing a sound, evidence-based rationale for any proposed change, generating and appraising potential solutions to arrive at a well-justified recommendation for change or intervention that considers a wide range of relevant factors. As with a formal business case, this will need to include a cost–benefit analysis, therefore increasing your knowledge of how and when to draw on the specialist knowledge of colleagues, e.g. business development manager is a key element of developing your improvement skills. This type of comprehensive background analysis and justification is an effective means of ensuring precious time and other resources are targeted appropriately, but also crucially, of convincing others to lend their support or, if necessary, give permission for you to proceed (Carter, 2017). This chapter will therefore focus on the sources and types of evidence that can be used to identify and justify improvement, how to generate and appraise potential solutions and effectively **scope** a sustainable response based on effective, collaborative planning for evaluation and measurement.

## Evidence informed improvement

Any aspect of nursing practice should be evidence informed and, regardless of whether an improvement effort aims to enhance or spread excellent practice or address a problem or challenge, data is key. As this definition illustrates:

*Quality improvement (QI) describes systematic, data-guided activities designed to bring about immediate, positive changes in the delivery of healthcare in particular settings.*

(Dixon 2017, p5)

So, data is the basis of evidence; using data for improvement can include:

1. using evidence sources and information that are already available (healthcare is awash with data that is not used or employed to full capability, therefore using what is already available should always be the first priority);
2. collating data that is already being generated in practice but is not currently captured or used; or
3. only collecting or generating new information when absolutely necessary.

Data is used to inform various types of evidence. Typically, terms such as ‘data’ and ‘evidence’ are associated with empirical research; however, they are equally relevant for audit and quality improvement. The differences and similarities between research, audit and quality improvement were outlined in the Foundations chapter;

*Identifying and justifying the need for service improvement?*

however, there is overlap in terms of the data sources, types and sometimes collection and analysis methods.

## Sources of evidence

There are multiple and varied sources of evidence that can be used to identify and appraise improvement ideas and potential solutions.

As Elisabeth's story at the start of Part 2 of this book illustrates, she has already reflected on her own experience and observation in practice regarding the challenges and risks to care quality and staff wellbeing associated with giving an effective patient handover. She has also used her previous experience and transferable skills as a journalist to identify a potential solution (i.e. the introduction of a structured handover tool) to enhance the effectiveness of handover in practice. However, Elisabeth is wisely planning to check out her initial ideas by reviewing the published literature on this topic before going any further. This is imperative but there are also other sources of evidence that Elisabeth would be wise to explore at this early stage and completing Activity 4.1 will help you to identify these.

### Activity 4.1 Evidence-based practice and research

Take a few minutes to re-read Elisabeth's scenario then make a list of other potential sources of information/data for her to consider.

Or, if you prefer, complete the same activity based on an improvement idea of your own, then discuss the potential sources and types of evidence you identify with your lecturer/practice supervisor.

*Compare your notes with the worked example at the end of this chapter.*

The relevant sources and types of data for each improvement topic or idea vary extensively. For example, routine staff/patient surveys yield a lot of very useful data but are unlikely to be specific enough for Elisabeth's needs in the example given, therefore in some cases it can be necessary to collect specific information to inform or evaluate improvement activity. This may be formal, or in the case of quality improvement, informal, for example by seeking feedback from staff on their experiences of handover during a routine team meeting, as part of everyday reflexive practice.

## Types of evidence

The type of evidence used to justify an improvement need, a potential solution and ultimately evaluate the effectiveness of an intervention, varies. Depending on the topic and context, the types of evidence may include:

- empirical, peer-reviewed research and evaluation research;
- grey literature such as expert opinion, policy documents, professional guidance and published reports;
- audit reports and data: national and local;
- formal feedback/surveys or consultation data, e.g. from service users, staff and other stakeholders;
- informal or opportunistic feedback, e.g. from service users, staff and other stakeholders.

In addition, the type of data may be quantitative (primarily numbers and equations based), qualitative (primarily words or themes based) or a mixture of both; with varying emphasis on the number of respondents, measurement versus perceptions or cause and effect for example.

#### Box 4.1 The value of analysing a practice issue: theatre trolleys

Staff were under pressure to increase the throughput of patients in a general theatre's suite. Delays were often experienced due to a lack of trolleys. The team's initial response was to develop an application for capital funding to buy additional trolleys, but they decided to investigate further first. Completing an inventory of the theatre trolley stock indicated that they had more than enough trolleys, but a high proportion were currently unusable. The team's investigation indicated various reasons for this, including some trolleys that needed repair. Thus, they set about addressing these issues rather than seeking additional funding and as a result, experienced a significant drop in the number of delays caused by a trolley not being available when needed.

## Identifying improvement-based solutions and evaluating potential options

### Analysing the issue and identifying potential solutions

It can be very tempting, and sometimes relatively easy, to immediately identify a change idea or potential solution when you see a need for improvement – however, this is to be resisted! Although ultimately the initial idea or obvious solution may be the one tested, it is crucial to keep an open mind at this stage. Shella's comments at the opening to this chapter illustrate this as she seems to have decided providing health promotion leaflets is the best solution, without apparently considering other options. Systematic consideration of all the factors involved and analysis of the relevant data is the best way to ensure all relevant potential solutions are considered and that any decisions are based on empirical evidence. This process of exploration and clarification also provides a sound basis from which to build support for any proposed change, not only in terms

of the information generated but also through involving the relevant stakeholders in this analysis that will underpin any resulting improvement activity.

Many frameworks and tools are available for you to use to support the analysis of practice and service outcomes, especially when a need for improvement is clear. You may already be familiar with the Root Cause Analysis (RCA) approach, which, though attracting increasing critique, remains commonly used by organisations when investigating reported incidents or near misses (Nicolini et al, 2011). A range of tools can support the identification of root causes. For example, the ‘5 Whys?’ is a relatively simple, very commonly used tool to support a basic review of simple problems. It involves writing down the issue at hand, then repeatedly asking ‘why?’ until the root cause of an issue is identified, enabling potential solutions to be developed. However, the 5 Why’s has been criticised as too simplistic when compared to other tools such as a ‘tree diagram’ (Card, 2017) which are more likely to identify a wider range of issues. For more complex issues, the 5 Whys can be combined with other methods, such as an Ishikawa (cause and effect) diagram (Wong et al, 2016). First developed by organisational theorist Kaoru Ishikawa, this is commonly known as a Fishbone diagram as the elements resemble the skeletal structure of a fish. In this case, starting with the problem statement at the ‘head’ of the fish, the main categories of causes related to that problem are identified (main branches) and then the 5 Why’s can be used to help identify the root causes for each main branch. It is important to use data to explain or justify each aspect of the Ishikawa diagram from the problem statement to each ‘bone’ of the fish. It can be helpful to start by considering generic categories such as: equipment, people (i.e. manpower, skills etc.), materials, measurement, environment for example. This prompts the team to think about issues with the system that lead to the topic being addressed, avoiding the temptation of blaming people or groups of people.

These are just examples of the tools you can use to analyse the practice problem you want to address or excellent practice you want to replicate and spread. You will find others in most improvement resource toolkits (see the further reading section at the end of this chapter). It is important to remember, however, to always use data when determining the problem statement and each of the causative factors. This data can be quantitative/numerical, but as we saw in Chapter 1, Activity 1.6 can also be from taking notice of what goes on around you during your everyday work and/or comments from colleagues or people accessing services.

## Environmental analysis

Appropriate analysis of the local and wider context is a crucial aspect of any successful improvement work. This process is commonly known as an ‘environmental analysis’ or ‘situational analysis’ and is particularly important in terms of assessing readiness for change. Various tools can be used to ensure a systematic and comprehensive approach. Some, e.g. SWOT (Strengths, Weaknesses, Opportunities, Threats) or SWOC (Strengths, Weaknesses, Opportunities and Challenges) you may already

be very familiar with. These are more generic and can be applied to internal or external assessment. SWOT is best combined with more specific frameworks that are designed to help identify relevant external (e.g. PESTLE) and internal (e.g. McKinsey 7S) factors to be considered regarding your chosen issue to enable a comprehensive analysis. Complete Activity 4.2 now to increase your familiarity with these commonly used tools.

## Activity 4.2 Measuring

Take a few minutes to look at a brief overview of two frameworks that are commonly used to inform an environmental analysis before instigating change:

1. PESTLE: PESTLE analysis – YouTube;
2. McKinsey 7S: <https://www.pocketbook.co.uk/blog/2012/02/28/on-competition-internal-forces-and-the-7-s-model/> (McKinsey 7Ss).

Completing an environmental/readiness for change analysis may indicate, for example, that despite the need for a specific improvement being clear from the data, other factors, e.g. competing priorities or low morale following a previously unsuccessful change, may mean that it would be inadvisable to take forward a certain improvement at a particular point in time. This does not mean the idea should be abandoned altogether but other interventions or external change may be necessary before there can be any chance of it succeeding.

Force Field Analysis can also be useful for assessing readiness for change. You may find it helpful to review Chapter 3, where Lewin's (1951) theory of change was introduced. This involves the identification of driving and resisting forces relevant to the change being considered, along with their relative strengths. The analysis can be focused on the team, departmental, organisation or sector/societal level. Figure 4.1 provides an example of the application of this tool to Elisabeth's situation.

Some key points to consider when using Force Field Analysis are:

- increasing driving forces may seem attractive but result in an increase in resisting forces; the equilibrium does not change but is maintained under increased tension;
- to effect change it is preferable to reduce resisting forces to allow movement toward the desired state without increasing tension;
- driving forces are not necessarily 'positive' as resisting forces are not necessarily 'negative';
- Force Field Analysis is about *perceptions* so requires inclusion (i.e. a broad, outward-facing perspective) by involving wider stakeholders and careful listening;
- the means identified for dealing with resisting forces need to be creative.

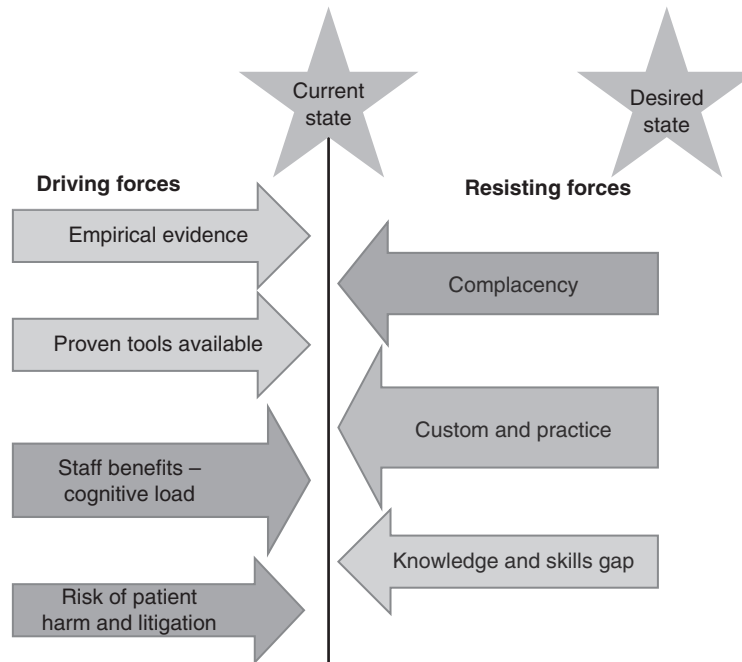


Figure 4.1 Example Force Field Analysis for the introduction of a structured nursing handover tool

The final tool we will consider here in terms of analysing the issue is a driver diagram. These are increasingly used by teams to help develop and depict their working theory about what ‘drives’ or contributes to the achievement of an improvement aim. A driver diagram demonstrates visually the relationship between three main groups of factors: the primary (or key) drivers that directly contribute to achieving a project aim, secondary drivers (components of the primary drivers) and potential change ideas to test relating to each secondary driver. This is useful for enabling a shared understanding among the core improvement team but also provides a useful tool when communicating with a range of wider stakeholders for any given improvement project (see Chapter 5 for an example of how Harry might use a driver diagram when progressing his change idea).

## Generating potential solutions or improvement intervention ideas

Having identified then analysed an excellent aspect of practice you want to spread or an issue to be addressed, the next step is to identify potential solutions or interventions for testing. The aim here is to be as open as possible, to generate a wide range of ideas. Many tools can support this process; we introduce just two here: brainstorming and the ‘Z Technique’. You may already be very familiar with brainstorming as a commonly used, creative problem-solving approach in which individuals or small groups contribute their ideas for potential solutions in response to the identified topic or problem.



## Options appraisal

As we learned earlier, forging ahead with a single solution without having considered alternative options must be avoided if you want to maximise the chances of success. This is where evaluating each potential solution, also known as options appraisal, is important – it is also normally a requirement of any business case. However, we first need to organise the large number of ideas it is likely we will generate. An Affinity Diagram is often used at this stage to group ideas into categories (commonly 3–6 categories) so that similar ideas can be considered together. Complete Activity 4.3 for further information on how to develop an Affinity Diagram and other stages of the project cycle in which this tool might be useful.

### Activity 4.3 Building knowledge

Access this step-by-step guide to Improvement Science, which explains how to develop and when to use an Affinity Diagram and the other stages of a project where it might be useful:

[https://www.cec.health.nsw.gov.au/\\_\\_data/assets/pdf\\_file/0010/445447/Improvement-Science-Step-by-Step-Guide.pdf](https://www.cec.health.nsw.gov.au/__data/assets/pdf_file/0010/445447/Improvement-Science-Step-by-Step-Guide.pdf)

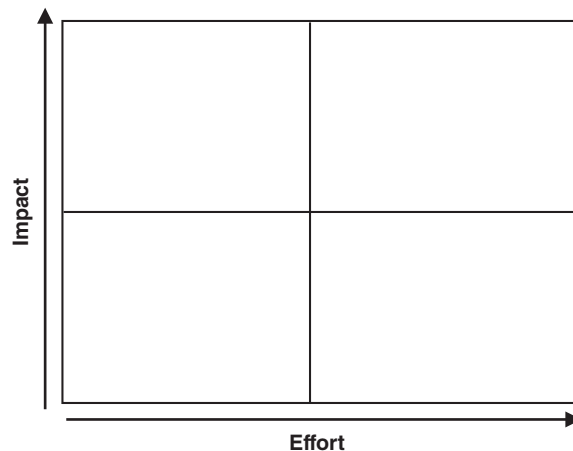
## Determining which change ideas to take forward and in which order

Dot voting is a common method of agreeing priorities within a group. Each participant is given a number of tokens (dots) and places these against the options they think should be prioritised and those with the most dots or ‘votes’ are taken forward. One disadvantage of this method is that individuals’ priorities may not be based on explicit or shared criteria. Being systematic in how individual ideas are appraised is important so that the merits of each against the project aim are considered. Some ideas may need clarifying, e.g. what exactly would be tested and how, then each can be considered in terms of pre-identified criteria. NHS Scotland proposes using a simple 2x2 prioritisation matrix for this (see Figure 4.2) based on:

- Effort – *Ease of implementation (easy or hard)*, e.g. how costly will it be? can it be tested relatively soon? how long will it take to test – hours, weeks, months? will many people need to be retrained? are those affected likely to welcome the idea and why?; and
- Impact – in terms of *the aim (high or low)*, e.g. how much will the change idea affect the problem? what will be the effect on outcomes? what other indirect effects might there be?

A collaborative approach to this process, involving key stakeholders, helps generate buy-in and increases the likelihood of successful intervention because key groups have

participated in the prioritisation process. A step-by-step guide to the process is included in the additional resources section at the end of the chapter but, in summary, each idea is written on a post-it note and placed on the chart, with the group deciding where this should be. This can be done quite quickly and the final results refined through group discussion. Once completed you should be able to see the priorities towards the upper half of the matrix, with the ‘quick wins’ (lower effort and greater impact) toward the top left. This options appraisal can then be used to inform subsequent prioritisation of the ideas generated, i.e. just because an idea is assessed as hard to implement this does not necessarily mean it should be low priority if the likely impact is great. Free electronic whiteboard software, e.g. Padlet or Miro, can also be used to facilitate this process in a virtual format.

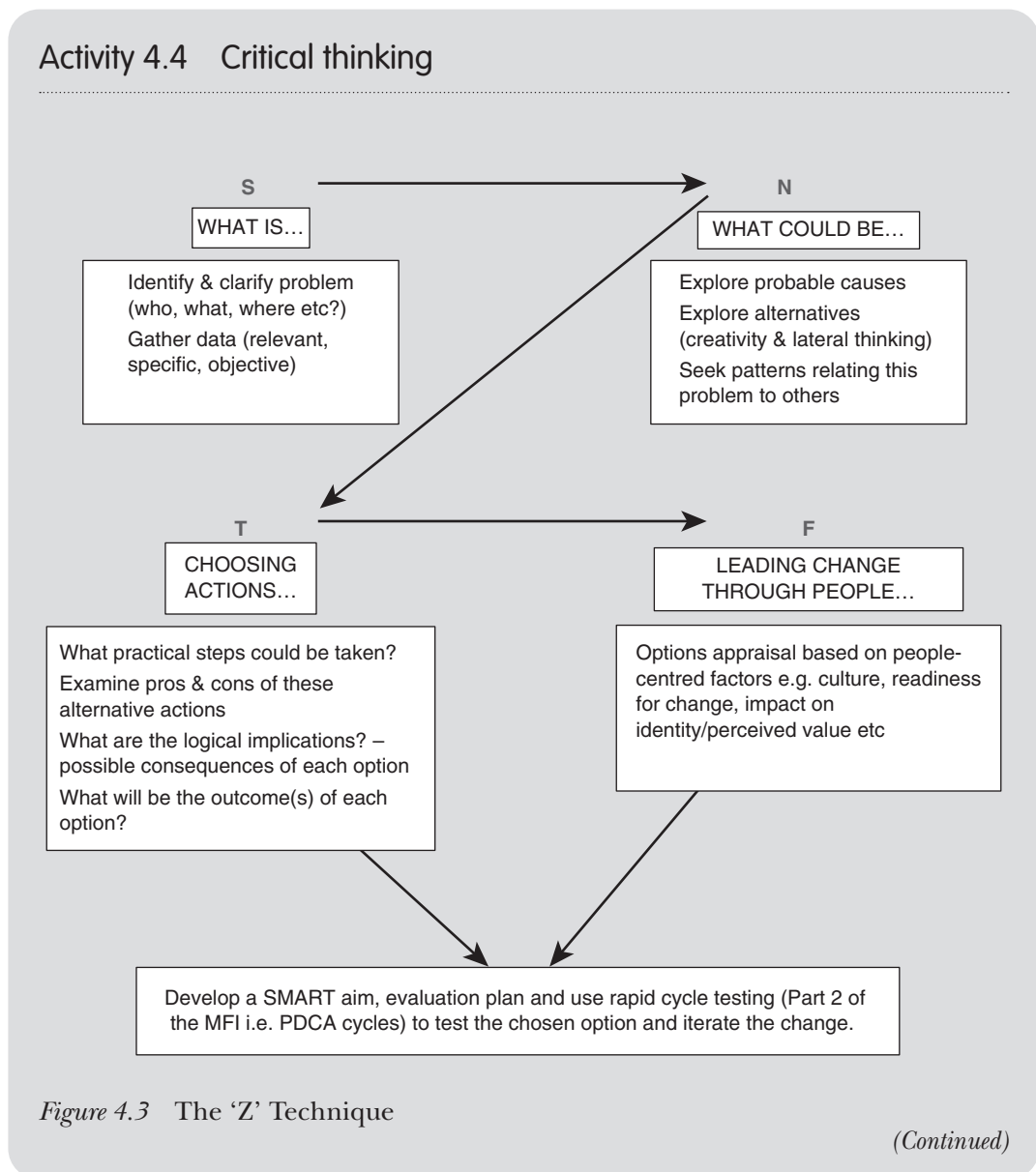


*Figure 4.2* Prioritisation matrix

The ‘Z Technique’ combines a more structured approach to ideas generation with options appraisal and is designed to ensure all sides of the issue and different types of solution are considered. Based on psychological theory, this technique, created by Isabel Myers and further developed by Gordon Lawrence, uses preferences from the Myers-Briggs Type Indicator<sup>®</sup> or MBTI<sup>®</sup>. It can be used to guide individuals and groups through a structured approach to creative problem-solving to ensure consideration of a wide range of options. It can therefore be useful for supporting the application of Part 1 of the MFI and Figure 4.3 provides an overview of an adaptation of this technique. The ‘S’ and ‘N’ in the model are used to depict different ways individuals prefer to take in information. ‘S’ tends to pay attention to what they perceive through their senses: seeing, hearing, touching, smelling and tasting, paying attention to detail, facts and what is real. ‘N’ on the other hand, tends to pay attention to their ‘sixth sense’ – or ‘gut reaction’ – which is driven by an unseen world of meanings, inferences, hunches, insights and connections, focusing more on information in terms of what could be, theoretical possibilities and novelty. The ‘T’ and ‘F’ elements of the model depict different preferences for decision-making. ‘T’ prefers to base decisions on impartial criteria, cause-effect reasoning, constant principles or truths, and logic. ‘F’ on the other hand prefers making decisions based on values, person-centred criteria and seeking harmony. All preferences

have equal value and refer to preferred ways of operating rather than ability; however, considering and planning for individual preferences as guided by this model can be very effectively used when considering how to engage others in the change process. Further information is provided in the further reading section at the end of this chapter.

Whichever techniques are used to generate potential ideas and appraise potential solutions, the key is to involve all the stakeholders in the process. This will ensure the widest possible range of ideas is generated for testing and promotes buy-in from key individuals and groups for the identified change.



(Continued)

Get together a small group of peers or work colleagues and use the Z Technique outlined in Figure 4.3 to generate as many potential solutions to your chosen practice issue as possible. Remember, your chosen issue need not necessarily be a problem to be fixed but could focus on how to spread an element of good practice. Once this is completed, use the 2x2 prioritisation matrix in Figure 4.2 to agree as a group one solution to test.

## Scoping a sustainable improvement idea

Determining the scope of any improvement can mean the difference between success and failure. Developing and agreeing with stakeholders a clear aim helps to define the scope of the improvement effort, hence why we spent time in Chapter 2 looking at what SMART is and the importance of developing a SMART aim, so take a minute now to review that section before moving on.

To develop a SMART aim you will need to answer the first two questions in Part 1 of the Model for Improvement:

- what are we trying to accomplish?
- how will we know that change represents an improvement?

A clear aim statement is also a useful tool for convincing other people to support the improvement – it is part of your ‘elevator pitch’ – a strategy for influencing others that you may have come across before. Using a template consisting of four basic questions provides the building blocks for a SMART aim; Table 4.1 illustrates this using Elisabeth’s improvement idea from the opening part of this section of the book.

### Box 4.2 Elisabeth’s SMART aim statement

Elisabeth developed her SMART aim statement in two stages. She started by completing the Aim Statement Template below with the help of her practice assessor:

Prompt question	Response
What do we want to achieve?	The use of a structured communication tool by nurses during shift change handovers
Where/who for?	On Primrose Unit, at each nursing shift change handover
How much?	80% of all shift handovers
By when?	June 2022 [use a realistic target date – improvement inevitably takes longer than people anticipate]

Table 4.1 Developing Elisabeth’s SMART aim statement

The second stage was to turn the answers to the four questions in the template into an aim statement:

Our aim is that a structured communication tool will be used by nurses during 80% of all shift change handovers on Primrose Unit by June 2022.

It can be tempting, especially if you have a particular solution in mind and are zealous about the 'S' of SMART, to name your chosen solution in the aim statement. Generally, you should try to avoid this because it could be that your original solution is not the best option in practice. Elisabeth has noted this advice and used the more general 'structured communication tool' terminology in her aim. While at the start of her idea she thought the SBAR (Situation, Background, Assessment, Recommendation) tool would be the best solution, she can now appreciate that SBAR is only one of many such tools, so by using this broader term she is not limited to SBAR if this is not the one that is found to work best in her practice context.

#### Activity 4.5 Critical thinking

Copy a blank version of the template Elisabeth used in Table 4.1, then complete it based on an improvement idea you've identified from your own practice experience; then develop a SMART aim statement from the responses as Elisabeth did. Share this with your practice assessor or peers for feedback.

Further examples of how to use this approach to developing a SMART aim can be found in this short video: <https://www.youtube.com/watch?v=rWcV7IE8g2U>

Answering the prompts to develop an aim statement for your improvement initiative and using the SMART approach requires some scoping of your improvement. This includes being very clear about what will not be included or achieved as well as what can be expected. Factors to consider when determining the scope of any improvement activity include but are not limited to:

- readiness for change in the target area and/or team members (the findings from the environmental analysis discussed earlier will act as a guide here);
- available resources, e.g. people, equipment, knowledge and skills;
- equipment needed (if relevant).

For example, Elisabeth scoped her aim to include just one clinical area, i.e. Primrose Unit. Some of the factors that influenced this decision are likely to have included for example:

- she had some influence in this setting as it was the placement area she was working in;
- she had discussed the idea with her practice assessor who thought the team would be open to it and willing to help test;
- the initiative would not require any special equipment or resources.

Establishing the scope of any improvement activity, as well as determining the best solution, are crucial aspects of ensuring the change is not only successful but also sustainable. Many projects only succeed because a certain set of circumstances prevail but are not sustained when these change. Addressing the sustainability of any change throughout, beginning right at the start of the improvement process, i.e. during the options appraisal, helps prevent people and systems reverting back to the status quo even following a successful change intervention. As we saw in Chapter 3, Lewin (1951) calls this stage of the change process 'refreezing'.

## Sustainability

The sustainability of an improvement is said to have been achieved when a new way of working or a particular outcome becomes the norm or 'business as usual'. There is little point in making any positive change unless it can be sustained in the long term. In fact, introducing a successful change that cannot be sustained can have a detrimental impact as it raises staff or service user expectations that cannot then be maintained. It is therefore crucial that the sustainability of any proposed improvement is considered during the early stages of development. Addressing sustainability is closely connected to scoping an improvement. For example, it is unlikely that Elisabeth could ensure a structured communication tool is used for all nursing shift-change handovers in every clinical area in her organisation, so aiming to achieve this in just one area initially offers a much better chance of making the change 'stick' or become part of everyday practice there, before seeking to spread the change to other areas. A very useful tool to help us address sustainability when planning an improvement was co-produced with groups of frontline staff, administrative and clinical leaders, academics, improvement experts and individuals with relevant expertise from other industries. This NHS Sustainability Model (Maher et al, 2010) can be used as a diagnostic tool to assess the likelihood of your improvement being sustained by identifying the strengths and weaknesses of your change plan in relation to ten key factors in three main areas. Some considerations in each of these areas include:

- *Staff* – e.g. to what extent have staff been involved in developing the proposed change? Do the staff see the proposed change as an improvement worth sustaining and have any concerns been taken account of? To what extent are senior and clinical leaders involved and 'championing' the initiative? What infrastructure is in place to identify and address staff knowledge and skills gaps in relation to the new way of working?
- *Process* – e.g. how credible is the evidence on which the proposed change is based? Does the change rely on a specific individual or group and can it be sustained if these are removed? Are mechanisms in place to monitor and assess progress?
- *Organisation* – e.g. how well does the proposed improvement align with the organisation's goals, vision and current strategic priorities, values and culture? To what extent does the infrastructure (such as role descriptions) enable the proposed change?

Having assessed the likely sustainability of a proposed improvement, you can then use the NHS Sustainability Guide part of the model as a practical guide for how to increase the chances of sustaining the change in the longer term.

### Activity 4.6 Measuring

Access the NHS Sustainability Model template (see the further reading section at the end of this chapter). Answer the prompt questions in the three areas then add the scores for each and plot them on the Master Score page; then add them together to produce your Sustainability Total Score. You can then plot this information on the portal (spider) diagram and/or the bar chart template to identify potential areas in which sustainability might be improved. You should then review the Sustainability Guide (see the further reading section at the end of this chapter) for practical tips on how to address the aspects of the improvement the sustainability assessment highlights as potential areas for enhancement and amend your plan accordingly. Discuss this assessment with your practice assessor and/or peers.

## The role of evaluation and measurement planning

The importance of planning how you will evaluate whether any improvement actually results in positive change and identifying the appropriate measures you will use for this was introduced in earlier chapters. There we considered the need to include planning for evaluation of any improvement activity as a core part of the initial design, rather than a later ‘add on’ as is often the case. Evaluation is particularly important for supporting sustainable improvement. This is one of the advantages of using the MFI (Langley et al, 2009) to guide any improvement because the measurement/evaluation data from each rapid test PDCA cycle not only helps determine the effectiveness of each iteration or ‘tweak’, but crucially also helps to build real-time evidence regarding the impact of the change as it progresses. Where negative effects are identified, this can prevent waste, which might include time and other resources, but also minimises risk as any negative impact is determined early. Where positive, evaluation data can be used to support a future expansion or a business case for wider application of the change.

The Seven Steps to Measurement for Improvement (NHS England/Improvement, online) provide a structure and method to support the development of effective measures in practice. After defining the aim (Step 1), choosing and defining your measures (Steps 2 and 3) must be completed before the collection of any data.

Using a range of different types of measures maximises the comprehensiveness of the evaluation. As we learned in Chapter 2, any change in one area of a complex adaptive system like healthcare invariably has an impact on others. Therefore, as well as

*Identifying and justifying the need for service improvement?*

using outcome and process measures to determine what the outcomes of the improvement and experiences of the process of change and new way of working are, wider impact in the system can be determined by the judicious use of balance measures. This enables identification of any unintended consequences. For example, if the assessment of patients likely to require an x-ray is streamlined and made more efficient in A&E, this may create a backlog in the radiology department that will have a detrimental effect on the patient experience overall and will not support effective collaboration between departments if not considered, and the radiology department staff consulted, before the change is made. This serves as an important reminder of the importance of identifying and involving all the key stakeholders, as we discussed in the Introduction chapter and have developed in subsequent chapters. If you are unsure of what an outcome, process or balance measure is, you should review the ‘measuring for improvement’ section in Chapter 2 now before moving on to complete the activity below, where you will put this knowledge into practice. Ensuring that you make measurement part of the normal work routine and wherever possible, using data and data collection systems that already exist, will improve the chances of data being collected reliably and sustainably by reducing the burden on staff.

When considering the relevant measures for your improvement, you will need to consider what data you will collect for each measure and how. The sources of evaluation data and the methods used to collect and analyse it can be similar to those used for research, but their use in the context of improvement is different. You may find it helpful to review the ‘Differentiating quality improvement from audit and research’ section in the Foundations chapter as a reminder of these differences before moving on.

### Activity 4.7 Measuring

You are a member of the team helping Elisabeth to progress her improvement idea to introduce a structured patient handover. Fill in the template below by identifying at least one measure for each of the categories that you would suggest she uses – you can add extra lines! Discuss your ideas with your peers and practice assessor or lecturer.

*A worked example is provided at the end of the chapter for you to review after completing this activity.*

Type of measure	What will you measure?	Why did you choose this measure? How will it help you determine whether or not the change is an improvement?	What data will you collect and how?
Outcome			
Process			
Balance			



## Chapter summary

This chapter has introduced some key considerations and commonly used tools to enable you to identify and develop an evidence-based, contextualised and sustainable improvement idea of relevance to practice. In doing so it has built on concepts introduced in earlier chapters such as the complexity of healthcare, involving and working with others, designing sustainable improvement and the role of measurement and evaluation throughout the improvement process. This chapter has focused primarily on how to apply Part 1 (i.e. the three questions) of the Model for Improvement (Langley et al, 2009):

1. What are we trying to accomplish?
2. How will we know that change represents an improvement?
3. What changes can we make that will lead to improvement?

and has introduced you to a range of tools that are commonly used to support this. Completing the suggested activities and using the worked examples at the end of the chapter has enabled you to experience applying the chapter content to your own improvement idea or Elisabeth's situation. The following chapter will focus in more detail on evaluation as a core aspect of any improvement activity.

## Glossary

**Scope:** concerns the extent of something. Establishing clear aims and objectives helps to establish the scope of any endeavour as they can be used to determine clear boundaries regarding what will be excluded as well as what will be included.

**CQC:** the Care Quality Commission is the independent regulator for health and social care in England. Other nations have similar bodies. Examples include: RQIA (Regulation and Quality Improvement Authority, Northern Ireland); the Care Inspectorate (Scotland and Wales); Commission on Safety and Quality in Health Care (Australia); US Department of Health and Human Services (HHS); Office of the Inspector General (OIG); Norwegian Board of Health Supervision.

**Business Case:** structured document succinctly laying out, for an intended audience of approvers and/or funders, the evidence-informed rationale, justification and details of a proposed practice or service improvement.

## Answers to activities

### Activity 4.1 Evidence-based practice and research

Additional sources of information Elisabeth might use to inform her handover improvement idea might include:

- *Friends and family data* – is there any learning from recent friends and family reports that involves the handover process/effectiveness?

Identifying and justifying the need for service improvement?

- *Audit data* – is there a recent handover audit and what were the findings/recommendations made?
- *Complaints and compliments data* – is handover a factor in any recent complaints or compliments and what might this tell us?
- *Adverse Events and near miss data* – is handover a contributory factor associated with any of these? If so, in what way?
- *Clinical outcomes data*, e.g. safety thermometer
- *CQC reports* – is there anything in recent CQC reports relating to handover? – this may be most likely found in the ‘safe’ or ‘effective’ standards sections
- *National safety alerts* – have there been any recent safety alerts associated with patient handover practices?

### Activity 4.7. Measuring

Type of measure	What will you measure?	Why did you choose this measure? How will it help you determine whether or not the change is an improvement?	What data will you collect and how?
<b>Outcome</b>	Number and/or percentage of shift handovers in which the structured communication tool was used	To determine the extent to which the project aim (i.e. tool used in 80% of all handovers) has been met	Project lead (or designated colleague) keep tally chart of whether or not structured handover tool was used at each shift change.
<b>Process</b>	Staff views on the new-style handovers e.g. - How easy to use? - Anything unclear? - Do the sections make sense, are they fit for purpose/usable? - How easy is the relevant handover paperwork (eg SBAR) pad to find? How often is it missing/empty?	To determine how the format and other characteristics of the new style handover are working for those involved. This will enable adjustments to be made that will support staff engagement with the change and to what extent it is sustained over time to become normal handover practice.	<b>What:</b> verbal staff comments and views on their experiences of using the tool and/or being in a handover when it is used.  Notes from tally chart of contextual factors that promoted/enabled or prevented use of structured handover tool.  <b>When/how:</b> (1) during weekly team meeting (arrange to agenda 5-10min discussion); (2) opportunistically – staff can provide email/verbal comments to project lead on an ad hoc basis.
<b>Balance</b>	Number and type of queries from colleagues seeking more patient information or clarification after the handover	This will indicate if the all the relevant information is being included in the handover.	Staff feedback on the frequency and types of additional information sought by colleagues post handover and potential causes of this.

Type of measure	What will you measure?	Why did you choose this measure? How will it help you determine whether or not the change is an improvement?	What data will you collect and how?
	Any untoward incidents or near misses associated with missing handover information involving the new-style handover process?	Handover is a crucial and complex clinical activity that has significant implications for patient safety and quality of care. Measures will therefore be needed to check that the new handover process does not lead to increased risk.	Routinely collected serious untoward incident (SUI)/ near miss data.

### Useful websites

<https://www.bhf.org.uk/information-support/publications/healthcare-and-innovations/business-case-toolkit-template#> British Heart Foundation – Business Case Toolkit – Includes a business case checklist/template.

<https://www.imperial.ac.uk/media/imperial-college/administration-and-support-services/staff-development/public/impex/Decision-making-using-MBTI.pdf>; MBTI® Z model and decision-making <https://collegiategateway.com/improve-your-decision-making-use-the-zig-zag-model/>

<https://learn.nes.nhs.scot/3138/quality-improvement-zone/qi-tools/measurement-plan>  
Measurement Plan Template and further information

<https://www.england.nhs.uk/sustainableimprovement/qsir-programme/qsir-tools/> NHS Quality Improvement Toolkit – access to a wide range of improvement tools.

<https://www.england.nhs.uk/improvement-hub/wp-content/uploads/sites/44/2017/11/NHS-Sustainability-Guide-2010.pdf> NHS Sustainability Guide

<https://www.england.nhs.uk/wp-content/uploads/2021/03/qsir-sustainability-model.pdf>  
NHS Sustainability Model

<https://www.pocketbook.co.uk/blog/2012/02/28/on-competition-internal-forces-and-the-7s-model/> 7S Framework

<https://www.england.nhs.uk/wp-content/uploads/2021/03/qsir-pareto.pdf> Pareto analysis  
A simple way of determining the issues with the greatest potential for improvement based on relative frequency or size. It is based on the 80/20 rule that in a given situation 80% of effects come from 20% of the causes.

<https://learn.nes.nhs.scot/> Prioritisation Matrix – Step-by-step guide to using a Prioritisation Matrix Access to quality improvement resources and training

<https://www.publichealth.hscni.net/directorates/health-and-social-care-quality-improvement>  
Health and Social Care Quality Improvement Northern Ireland

<https://www.healthcareimprovementscotland.org/> Healthcare Improvement Scotland

<https://www.england.nhs.uk/improvement-hub/> NHS England Improvement Hub

<https://www.england.nhs.uk/improvement-hub/wp-content/uploads/sites/44/2017/11/NHS-Sustainability-Model-2010.pdf> NHS Sustainability Model

<https://heiw.nhs.wales/education-and-training/dental/quality-improvement/> Quality Improvement Wales