NHS Improvement

Building capacity and capability for improvement:

embedding quality improvement skills in NHS providers

Institute *for* Healthcare Improvement

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Contents

Introduction

This is a guide for NHS organisations seeking to begin or do more to build improvement capacity and capability in their organisations. It should be used in conjunction with **Developing People - Improving Care**[1] an evidence-based, adaptive national framework published in December 2016 to guide action on improvement skill and capability building, leadership development and talent management for people in NHS-funded roles in England.

"For improvement to flourish it must be carefully cultivated in a rich soil bed (a receptive organisation), given constant attention (sustained leadership), assured the right amounts of light (training and support) and water (measurement and data) and protected from damage." (Shortell et al, 1998)

The guide builds on 2012 work from the NHS Institute of Innovation and Improvement and draws on the experience of healthcare providers. NHS Improvement has worked with the Institute for Healthcare Improvement (IHI) which have provided subject matter expertise in the development of this co-produced document.

It outlines the IHI 'dosing' approach to embedding quality improvement (QI) skills that several NHS trusts have found useful. It:

- outlines the scale of training and development required to embed quality improvement into the fabric of your organisation
- introduces some of the challenges leaders face around building capacity and capability
- introduces the concept of 'dosing'
- makes recommendations on how to frame and plan the development of a system-wide strategy to build improvement capacity and capability.

Building capacity and capability for improvement is grounded in experiential learning and the application of the concepts, tools and methods to daily work. Both classroom and virtual learning are part of the design principles.

[1] https://improvement.nhs.uk/resources/developing-people-improving-care/

The principles are not unique to the IHI approach. Most evidence-based method applications (such as 'Lean' and 'Six Sigma') promote a platform, matrix or hierarchy of different people requiring different knowledge and skills in differing degrees and contexts.

The approach can support NHS bodies to become learning organisations, a clear message delivered by the Berwick report (2013), and promotes a shared, empowering leadership approach highlighted in recent reports (The King's Fund 2017, 2014).

1. Defining key concepts

Quality improvement (QI): Over the years there have been many definitions of quality and of improvement: there is no single definition. However, the key elements are 'a combination of a "change" (improvement) and a "method" (an approach with appropriate tools), while paying attention to the context to achieve better outcomes' (The Health Foundation 2013).

Science of improvement (SOI): This term is used by a wide range of people and professions to mean different things but an article by Perla et al (2013) provides an historical review of SOI and its application in healthcare settings. SOI is the integration of ideas, concepts, and models between scientific disciplines to develop robust improvement models, tools and techniques with a focus on practical application and problem-solving.

Capacity: refers to the following characteristics:

- the ability to receive, hold or absorb new knowledge and skills
- the maximum or optimum amount of knowledge and skills individuals can absorb and retain
- the ability to learn or retain information
- the power, ability or possibility of doing something or performing
- a measure of volume; the maximum amount that can be held.

Capability: If capacity represents the potential for improvement, capability is the demonstration of what can be achieved. Furnival et al (2017) provide a good summary of improvement capability: "The organisational ability to intentionally and systematically use improvement approaches, methods and practices, to change processes and products/services to generate improved performance." The key word here is 'use'. While capacity provides the potential for improvement, it is the active application and use of improvement approaches and practices that determine whether improved results will be realised.

Dosing: The SOI concept of 'dosing' was first developed over 12 years ago by Dr Robert Lloyd at the IHI. (For a detailed explanation, see Lloyd (2017), Chapter 11.) It is derived from the principles used to establish the appropriate dose of a medicine.

For example, a group of patients all suffering from high blood pressure would not all be given the same dose of blood pressure medicine. Some might get 5 mg; others 10 mg and still others 20 mg. The dosage of the medicine would be based on the patient's needs. In a similar manner the 'dose' of the SOI will differ depending on the needs of the individual and their role in the making the QI journey a reality within their organisation.

The dosing approach therefore establishes targeted levels of knowledge of and skill with improvement concepts, methods and tools through a variety of delivery mechanisms (including virtual learning, independent study, face-to-face workshops and, most importantly, experiential learning). It also articulates a progression of learning that begins with building general awareness throughout all roles in an organisation and culminates with a few individuals developed with deep expertise.

The key point of dosing is that not everyone in an organisation needs the same depth of knowledge about QI concepts, methods and tools. The deployment of improvement knowledge and practice must be fully aligned with the organisation's strategic aims, leadership approach and culture, and SOI dosing needs to be embraced by the senior management team and integrated into existing HR processes such as induction or annual performance reviews.

2. Background

Transformation of a system begins with transformation of the individuals working in the system. Deming (1994) offered a practical approach to help individuals transform their thinking. Throughout his career he stressed that if individuals want to improve the quality of their products or services they need to understand how four components interact to determine the quality of daily work:

- systems thinking (ie identifying all the systems involved in producing a product or service and the level of complexity in each system)
- understanding the variation that the different systems produce
- building knowledge about how and why work is done as it is
- appreciating the human side of change (that is, the psychology, motivation and engagement of everyone involved with the system, governance, management, staff as well as service users).

Understanding the inter-relations of these four components is essential for constructing successful capacity and capability building strategies. For example, deep knowledge of and skill with understanding variation is of no value unless placed in the context of the other three components. Individuals who receive a dose of all these four components will be better equipped to join in the improvement of a system but the challenge is to determine the appropriate doses for those who work at the point of care delivery, in middle management or supervisory roles, and at the top of an organisation.

The dosing approach helps leaders determine who needs to know what at each of these levels. (For more information on these four components and how they interact have a look at the IHI video explaining Deming's ideas in more detail.)

3. The dosing guide

The dosing approach does not prescribe a single set of numbers, percentages or mathematical formulae to determine the precise number of individuals to be trained. Doses vary depending on characteristics, including:

- size of organisation
- mix of services provided
- organisation history and current status of its quality journey
- resources committed to learning and employee development
- commitment of senior leaders to making quality the organisation's business strategy
- staff turnover rate.

Bearing in mind these characteristics, we offer a few general guidelines for different groups in an organisation:

- Everyone needs a general introduction to and awareness of QI concepts, tools and methods. This facilitates shared understanding, helps identify more opportunities for change and is essential to building an improvement culture. Typically this comes from virtual learning opportunities, new employee orientation and/or short workshops that provide overviews of the organisation's approach to QI. This work should be ongoing, with QI workshops at least once a quarter depending on the size of the organisation.
- All board members need to (1) agree and understand the organisation's QI approach and its components, (2) know how data is analysed in a QI context (ie looking at the variation in data over time rather than the use of summary statistics, aggregated data and red/amber/green reports), (3) know how to make the correct management decisions with data and (4) understand the strategic outcomes expected for the QI projects. This level of understanding is usually accomplished through brief presentations on QI and offering appropriate reading material and case studies.

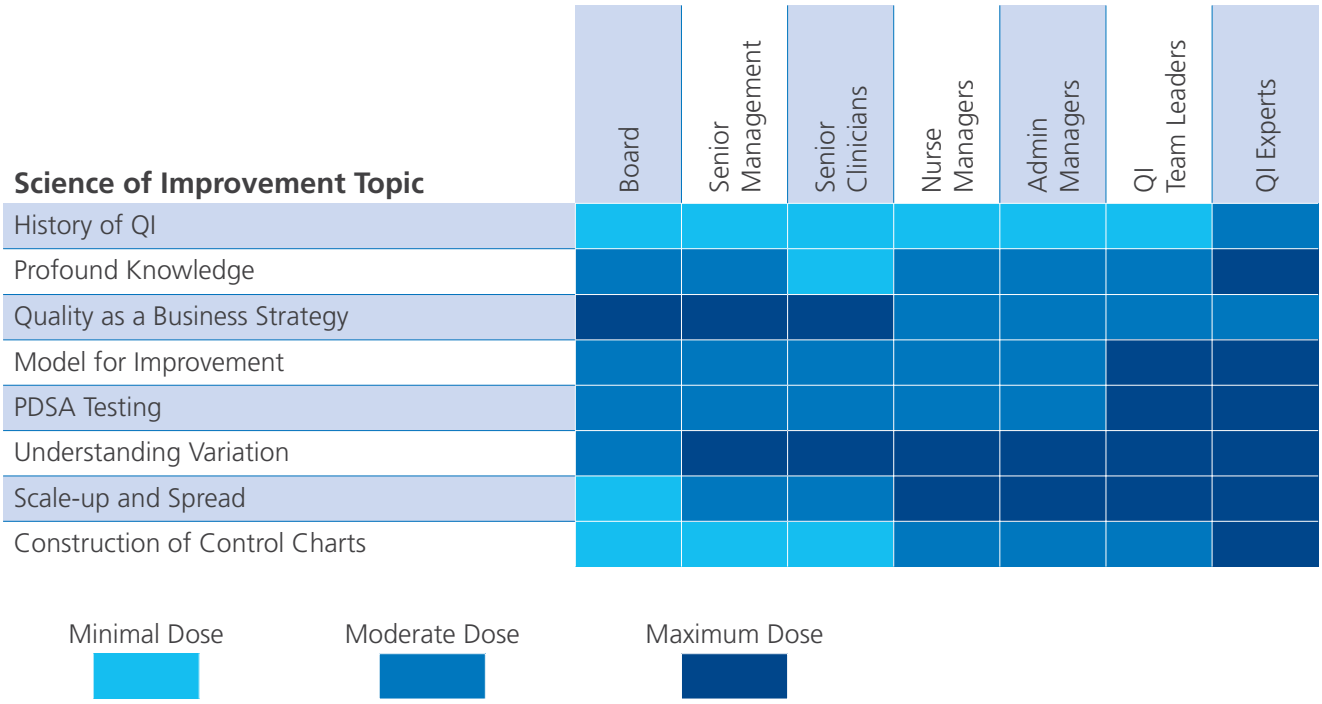
- All senior leaders need deeper knowledge of the SOI than board members. As senior sponsors for QI initiatives they need a working knowledge of the concepts, tools and methods, particularly how key measures are organised, and the difference between common cause and special causes of variation. They then need to be able to make the appropriate management decisions working with their teams when presented with each type of variation.
- All middle managers and supervisors need the same 'dose' as senior leaders but also need to understand the main aspects of being a sponsor and/or possible leader of an improvement team. This will involve understanding tools related to leading and coaching QI team meetings, organising and interpreting quality measures and helping staff members diagnose problems and develop and implement improvement strategies.

As well as the groups described above, an organisation needs two smaller groups of qualified staff to support day-to-day quality initiatives:

- Internal quality experts: As guides for the organisation's quality journey, these individuals need the deepest knowledge of the SOI in quantitative and qualitative methods, tools and concepts. They also need to be able to teach individuals at all levels of the organisation. The size of this group will depend on the size of the organisation and number of QI projects. An organisation with up to 4,000 employees would be likely to need approximately 15 to 20 quality experts.
- Quality coaches: Quality coaches are skilled in the human side of change and QI measurement and are able to use QI tools and methods to help teams achieve their aims. They coach colleagues to test new ideas and support teams with implementation and spread. Quality coaches should also have access to and the support of the quality experts. In many organisations the quality experts organise and manage the quality coaches. The number of quality coaches will depend on the number of projects. Typically, a quality coach who has protected time of roughly 20% to 25% as a coach can support three to four teams. Another way to estimate the number of quality coaches needed is to figure that roughly 5% of employees should be developed as QI coaches. Again for a 4,000-employee organisation this would be approximately 150 to 200 individuals developed as quality coaches over roughly five years.

Figure 1 illustrates how a dosing strategy might be laid out for an organisation. The rows indicate sample SOI content domains and the columns identify groups in the organisation that need a particular dose of the SOI. The shades of blue represent the intensity of the dose delivered to each group. The darker the blue, the deeper the required dose of the SOI. Again, the method of delivery (eg reading, computer-based training or workshops) will differ for each group and depend on resources.

Figure 1: Applying the dosing principle to an organisation



Note the intensity of the colour reflects the 'dose' of the science of improvement knowledge and skills that would be administered to each respective group. The mechanisms for administering the allocated dose would range fromm virtual learning (eg IHI Open School) to face-to-face workshops on the SOI.

Source: Lloyd R (2017) Quality Health Care: *A Guide to Developing and Using Indicators*, 2nd edition, Jones & Bartlett Publishing. Used with permission of R Lloyd and Jones & Bartlett Publishing.

4. Starting your journey

When an organisation starts its QI journey the 'doses' described in Figure 1 need to be administered gradually and over a period of time. Some organisations decide to start at the top of the organisation, while others send individuals who actually deliver care to training and developmental workshops. This can result in a disconnect between those developing a vision and strategy for the organisation and those delivering care. Organisations that succeed in embracing QI as a central business strategy, design a system of learning and application throughout the organisation.

We therefore recommend organisations to plan to gradually 'dose' key individuals throughout the organisation. Transforming an organisation into a centre for quality excellence is not a sprint but a marathon and requires a plan, momentum and a direction.

There is no prescription in relation to the sequence. Some organisations have trained a few QI experts and a large number of staff in core improvement skills while developing fluency at board level in parallel. Other organisations have trained experts, leaders and executives and taken a just-in-time (JIT) approach. This involves gradually building improvement skills through on-the-job support and/or intense improvement events; supporting frontline staff to deliver successful improvement projects and receive training at the same time.

The dosing approach is designed to strengthen both individual and organisational capacity and capability. Creating the conditions for Improvement is a vital aspect of this (Kaplan et al, 2010; Ovretveit, 2011; Lloyd 2017). The two aspects are interdependent. Organisations focused solely on filling individuals with content by sending them to training programmes will not necessarily improve capability.

Creating the conditions includes attention to the following:

- Leadership commitment: Many healthcare organisations have found it difficult to maintain constancy of purpose. They have been inconsistent in their approach to improving quality and as a result their efforts are not sustained. A 'flavour of the month' approach to improvement will not work and can lead to inefficient use of resources. In many ways constancy of purpose is more important than which model or approach is used, as it requires the leadership's commitment to making quality the real strategy for the organisation.

- Making a plan: A basic feature of the dosing approach is an organisation-wide plan for dispensing the appropriate dose of the SOI to the appropriate individuals. For example, senior leaders and board members do not need to know all the statistical nuances of control chart construction but they do need to know what a control chart is; why it is preferred over aggregated summary statistics and red/amber/green displays of data; how to determine common cause from special cause variation and, most importantly, what management decisions they should make when observing common cause or special causes of variation.
- Making it 'the way we do things here': Building improvement capability is an ongoing strategic and tactical commitment to the future; it is not a one-off event.
- Understanding key concepts: The concepts of QI and quality assurance are often misunderstood and used interchangeably. Quality assurance is primarily concerned with measuring compliance with standards. QI is about continuously improving processes to meet standards. It is vital that an organisation beginning its QI journey understands these key concepts and the implications of each for different phases of its work (Inglis, 2015).
- Recognising the limitations of 'tools': There are a variety of QI tools that can help diagnose, analyse and drive improvement work. They are critical to the success of improvement teams but should not be used in isolation, outside improvement approaches, strategies and action. It is easy to become enamoured with particular tools such as process maps, flowcharting or cause and effect diagrams but more important to understand when they should be used and how they fit into the QI approach.

These conditions are all important for keeping the QI journey on track.

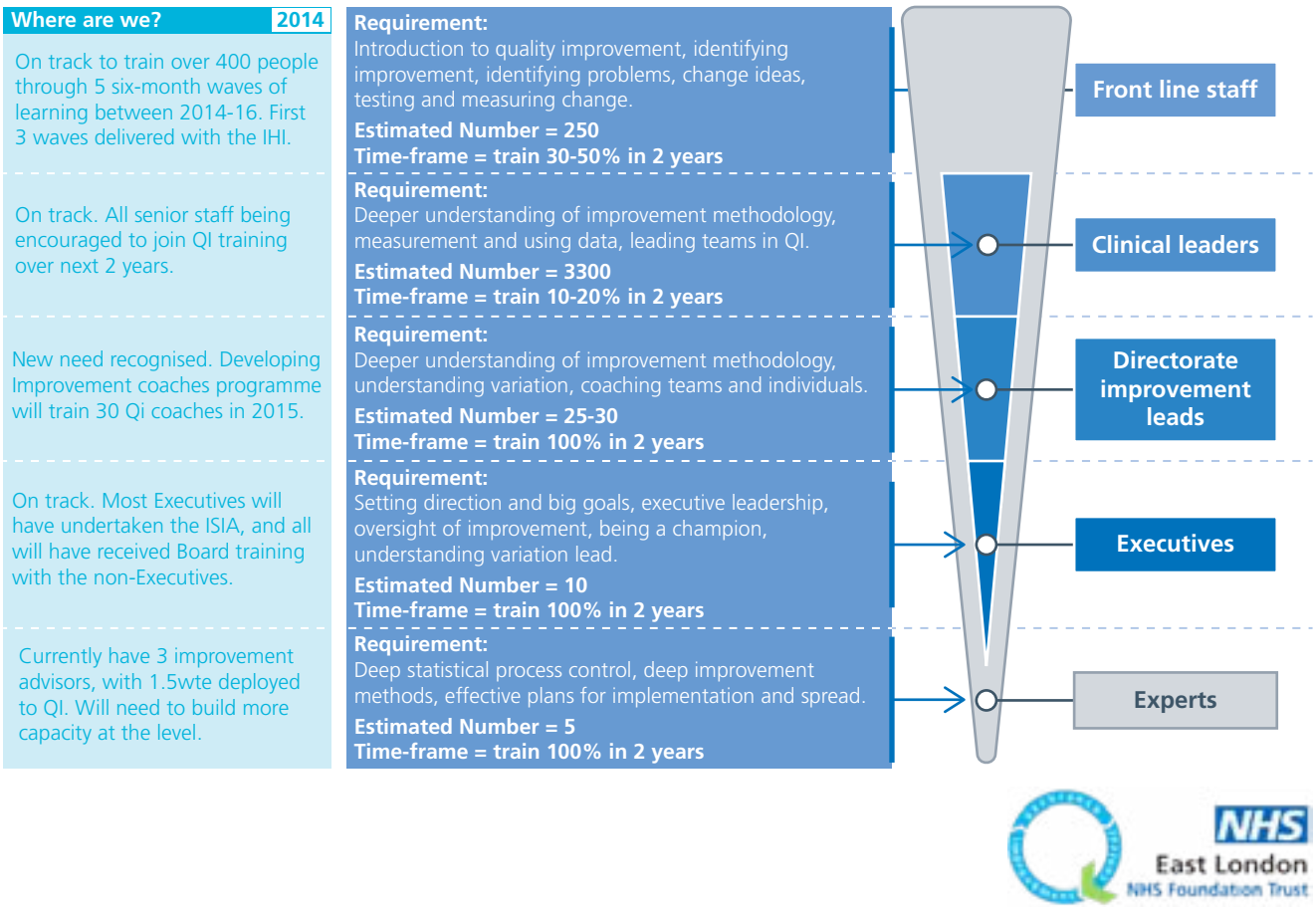
5. Building a strategy: case studies

Here are two case studies of NHS organisations that are developing their capability and capacity for quality improvement. We are keen to learn from and to share other provider experiences of leading this type of work. If you are interested in helping with this, we encourage you to share your story on our Improvement Hub or contact us at NHSI.DevelopmentTeam@nhs.net.

1: East London NHS Foundation Trust: building a dosing strategy

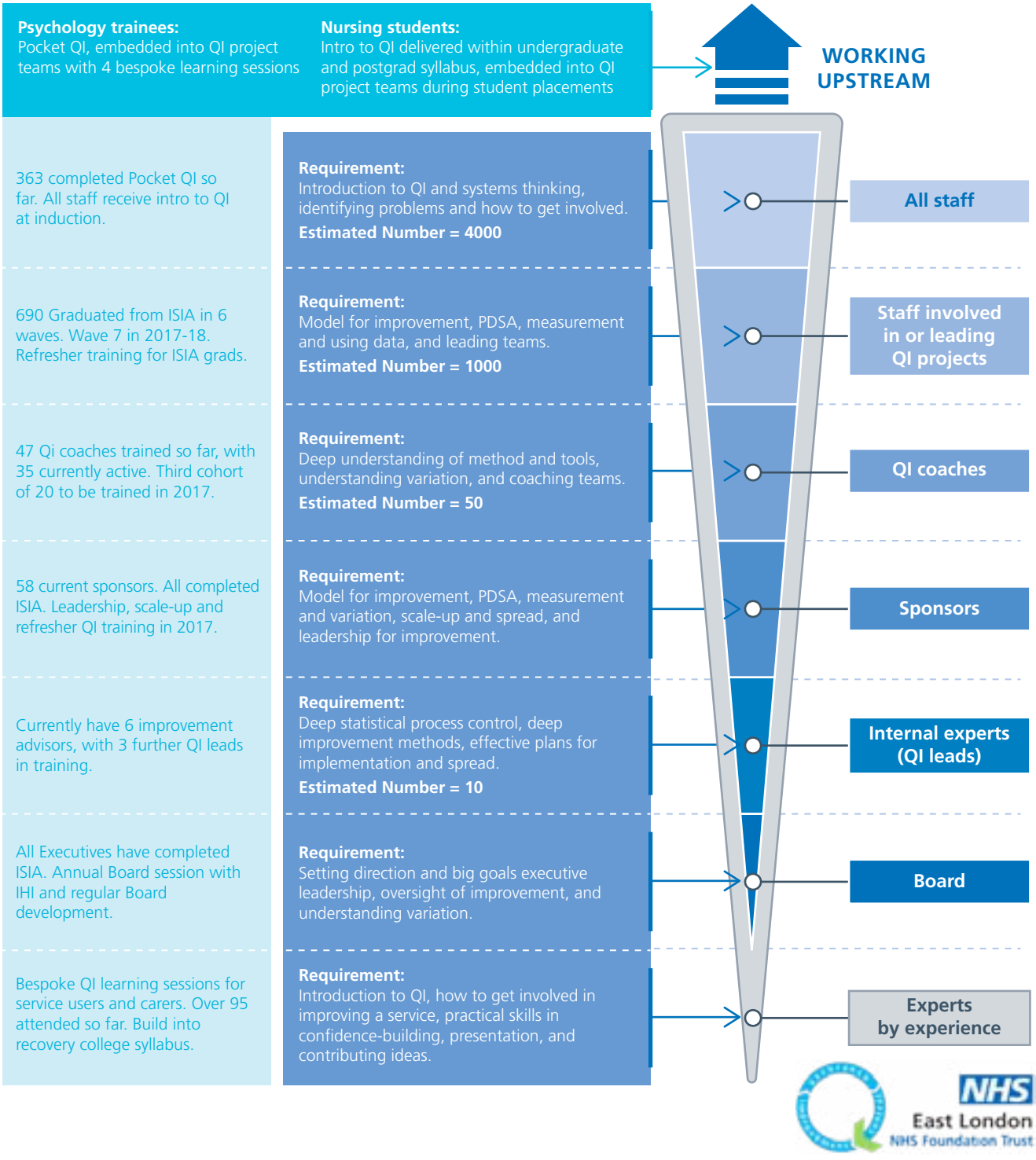
East London NHS Foundation Trust's quality journey began in 2014. IHI helped them identify strategic objectives for quality and safety, outline tactical plans for building capacity and capability and develop key indicators to track the progress. Figure 2 shows the first iteration of this work.

Figure 2: East London NHS Foundation Trust: building capacity and capability for improvement: draft strategy 2014



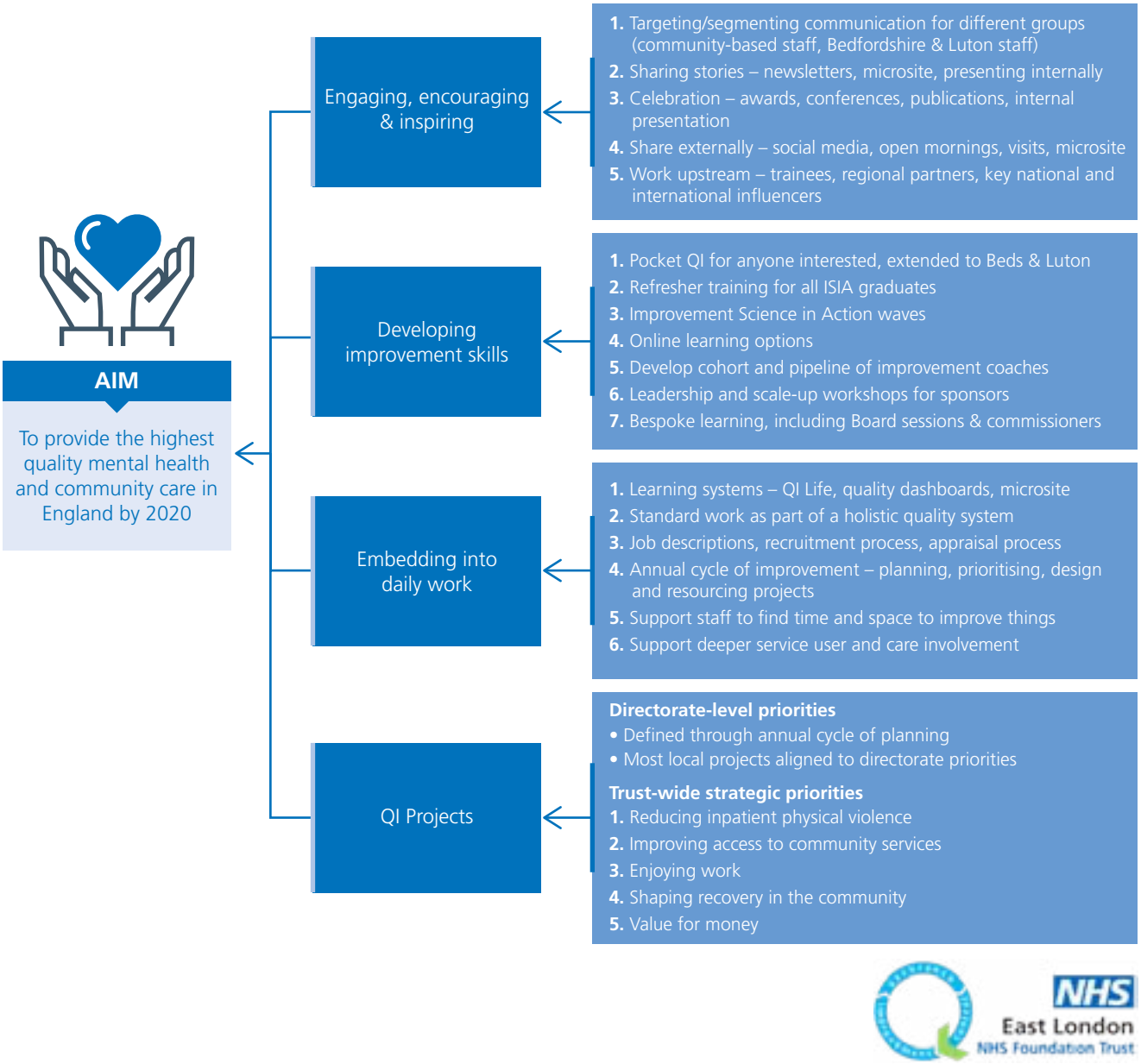
Building capacity and capability at East London is an ongoing, dynamic progress. The number of people receiving different doses and applying it through improvement projects regularly changes, while communication and delivery of the capacity and capability plans are adjusted as needs change. Figure 3 shows the updated 2017 version of the dosing strategy.

Figure 3: East London's follow up dosing strategy 2017



Building a renewable QI infrastructure not a one-and-done event. A one-off training session does not work when the aim is to build capacity and capability for the long run. Similarly, building capability is much wider than training. East London developed four pillars to illustrate its approach. Figure 4 shows how 'developing improvement skills' (dosing) fits into the overall organisational strategy.

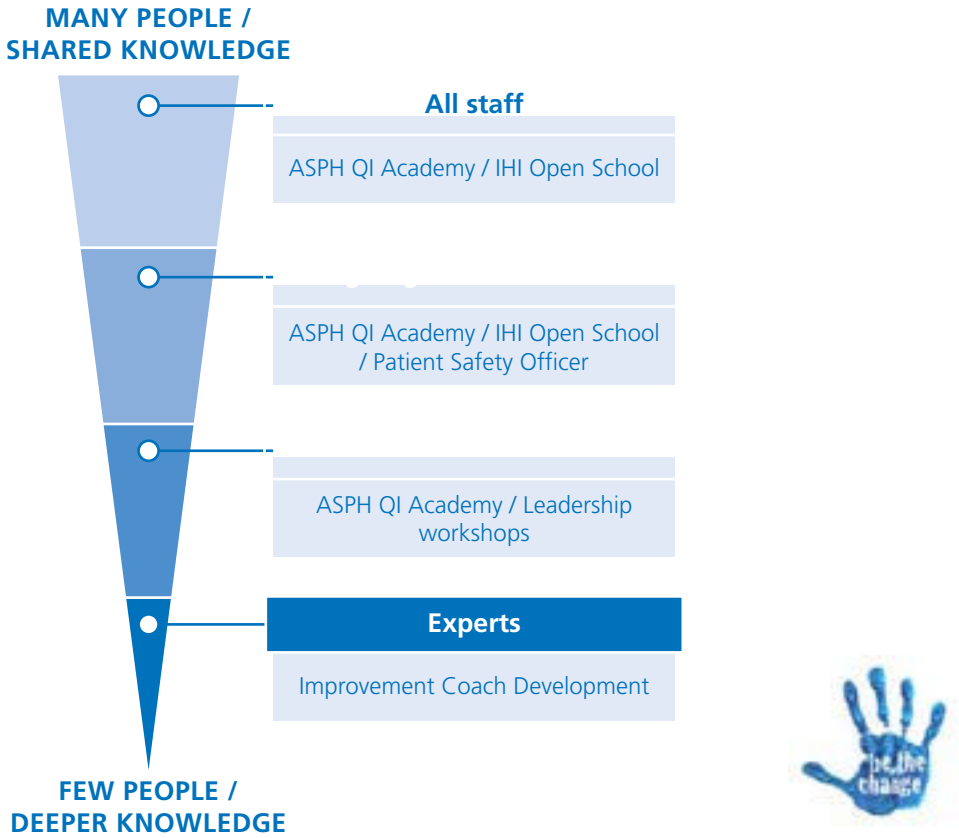
Figure 4: East London NHS Foundation Trust: how developing improvement skills (dosing) fits into the overall organisational strategy



2: Ashford and St Peter's Hospitals NHS Foundation Trust: developing capability in teams

Ashford and St Peter's Hospitals NHS Foundation Trust (ASPH) began its QI journey in 2015, focused on developing capability for teams to make improvements as well as improving organisational culture and leadership. Recognising that building improvement capability at every level of the organisation would be key, ASPH created a dosing strategy to equip staff with the tools and coaching to make improvement a reality. Figure 5 shows the approach.

Figure 5: Ashford and St Peter's Hospitals NHS Foundation Trust dosing strategy



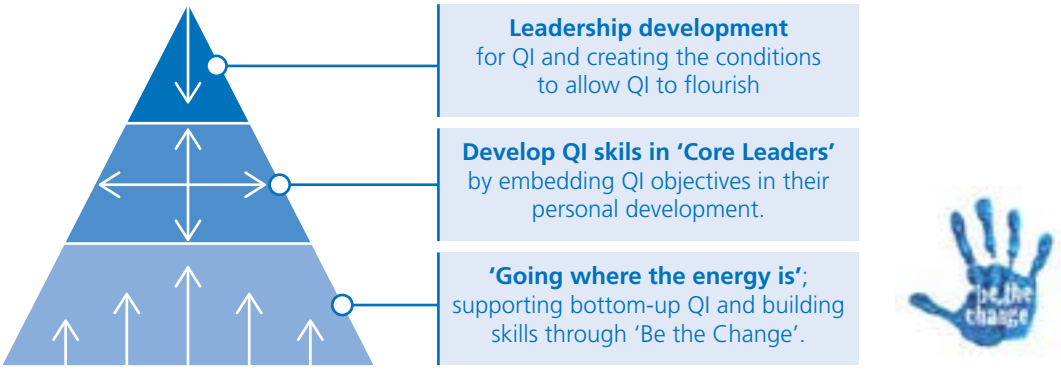
Since 2016, all staff have been able to access QI skills has via the ASPH QI academy and the trust works with IHI and uses its resources, including the online Open School and the Patient Safety Officer and Improvement Coach development programmes.

To maximise the take-up and engagement with these learning opportunities, ASPH carefully targeted its improvement capability-building. They took the approach of 'going where the energy is' and supporting bottom-up improvement projects and building skills through the 'Be the Change' programme.

They have gone on to develop QI skills in the trust's 'leaders' by embedding QI objectives and expectations in personal development; and placing QI training at the centre of the organisation's leadership framework and the core manager's toolkit.

ASPH is also working with on leadership development for quality improvement, creating the conditions to allow QI to flourish – a culture of 'curiosity and creativity' that is fair, open and supportive. Figure 6 shows details of the deployment strategy.

Figure 6: ASPH capacity and capability deployment strategy



Supporting quality improvement has enabled ASPH to empower teams to be creative and innovative, always looking for ways to improve their services and the care provided. They have created leaders who have supported the capability for learning, and therefore change, at scale. This has resulted in improved patient experience, patient safety metrics and improved the feel of the organisation.

A significant driver was a concern that the staff survey results at ASPH were at best average and in some indicators, worse than average. Over the past few years ASPH has started to see improvements. The 2016 results show a significant improvement of double-digit percentage increases in all four questions in the staff survey that relate to innovation and improvement over the last five years.

In 2017, ASPH won the Healthcare People Management Association Excellence Award for excellence in employee engagement.

6. Key messages

- Embedding quality improvement throughout an organisation requires a systematic, targeted effort such as 'dosing' to develop different levels of QI expertise for different groups of people.
- Dosing does not prescribe a single set of numbers, percentages or mathematical formulae.
- To be successful, 'dosing' should be structured around building both individual and organisational capacity and capability as the two are interdependent. Organisations that simply send individuals on training programmes will not achieve increased capability because the gap between theory and practice is significant. The impact will only be delivered with a clear organisational approach to support immediate and continuous skills application. Organisations should plan to gradually 'dose' key individuals' at all levels of the organisation. A starting point may look similar to Figures 1 and 4.
- The process of transforming an organisation is not a sprint but a marathon that requires a plan, a pace and a direction to build the foundations for Improvement. Have a look at the recent Health Foundation report Building the foundations for improvement. How five UK trusts built quality improvement capability at scale within their organisations for an account of five UK trusts' QI journeys.

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Further reading and references

Reading

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2. *Sustaining Improvement* (IHI 2016)
3. *Does Quality Improvement improve quality?* (Dixon-Woods, Martin 2016)
4. *Building the foundations for improvement. How five UK trusts built quality improvement capability at scale within their organisations.* (Health Foundation 2015)
5. *Skilled for Improvement* (Health Foundation 2014)
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