

# Education and quality improvement

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There are a variety of educational concepts and principles that underpin quality improvement (QI) processes. An understanding of these may aid both participation in, and the teaching of the QI process.

## Background

The public enquiry into the Mid-Staffordshire tragedy led by Sir Robert Francis uncovered the failings of an organisation, echoed throughout the NHS. In the quest to build a safer NHS, an international safety expert, Donald Berwick, the CEO of Institute for Healthcare Improvement, was consulted.

The Berwick report 'A promise to learn – a commitment to act' was published in August 2013.<sup>1</sup> NHS Improving Quality – an improvement organisation – was established on 1 April 2013. Since November 2015, it has been part of NHS England as the Sustainable Improvement Team.

## Learning embedded in QI

In the simplest sense, improvement science is about collecting data, measuring variation, analysing the causes for variation and then instituting change to facilitate gains. Improvement can be brought about by an aggregation of marginal gains.

William Edward Deming, a mathematician, used data to improve quality in Japan's automobile industry in the 1950s. The Plan-Do-Study-Act (PDSA) model for improvement used in the book 'Quality Improvement in Anaesthesia'<sup>2</sup> comes from work by Deming and his mentor, Shewhart.<sup>3</sup>

When the PDSA cycle is viewed as a mental model (Figure 1), it is possible to draw a parallel to Kolb's experiential learning cycle.<sup>4</sup> Kolb's

cycle, when applied to a specific project, becomes a data collection and analysis exercise which can be used to demonstrate improvement.

Deming successfully demonstrated how learning skills and statistics could be blended to achieve QI in the automobile industry. He emphasised that a focus on quality would lead to reduced costs over time, whereas a focus on cost-reduction would result to a decline in quality culminating in increased costs.

QI processes must involve learning about what we do and reflecting on what we find. It involves all the elements of triple-loop learning,<sup>5,6</sup> which can be put simply as:

Single-loop learning: are we doing things right?

Double-loop learning: are we doing the right things?

Triple-loop learning: why should we be doing it that way?

Dewey (1910) described 'Reflection' as a sequence of logical steps and the trained mind as one that judges the advisability of each step.<sup>7</sup> Figure 1 is a diagrammatic representation of how the PDSA cycle of quality improvement is a logical consequence of the reflective thought process.

Berwick's report reiterates that culture change and continual improvement comes from what leaders do, through their commitment, encouragement, compassion and modelling of appropriate behaviours. QI occurs in a culture where measurement is considered a resource and defects are seen as opportunities to learn. Berwick urges every staff member to be a quality inspector who will never knowingly pass on a defect, error or risk to a colleague or

a patient. This requires that all staff members and trainees should possess the highest degree of motivation, i.e. that of self-actualisation. Self-actualisation has two dimensions - personal and external. Personal attributes relate to professionalism and self-regulation. The external dimension relates to the domains of team-working, leadership, innovation, management and education.

Maslow (1943) depicted needs as a hierarchy within a pyramid, and stated that a person is motivated to achieve and attain self-actualisation, only when the basic needs are met (Figure 2)<sup>8</sup> Staff shortages and financial pressures in the NHS curtail time for supporting professional activities. Junior doctors buckling under exam pressures, assessment deadlines and rota gaps may not engage with the 'QI' agenda, neither may their trainers. Staff members and trainees need to feel safe and secure before 'quality' appears on their agenda.

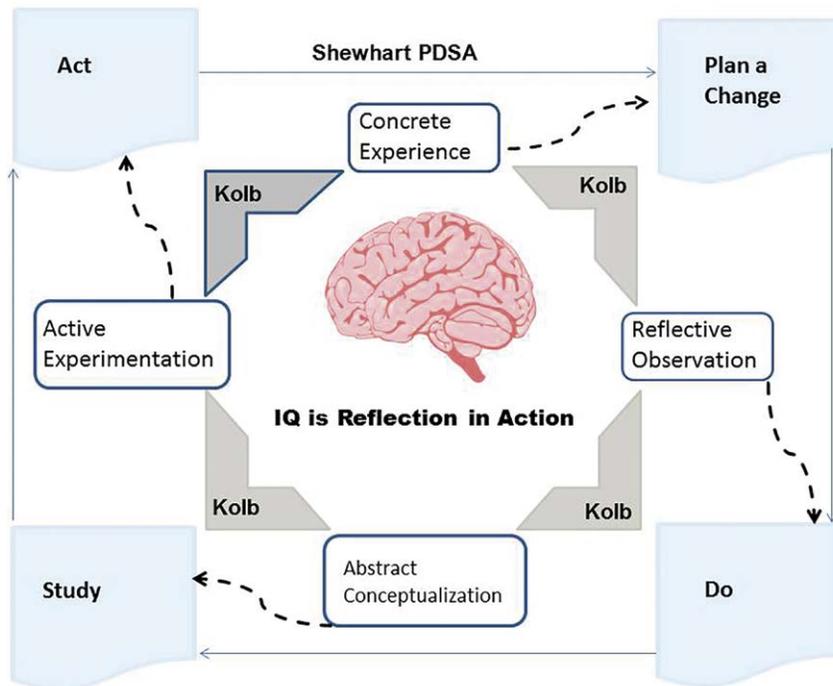
## QI in anaesthetic education

The Berwick report suggests the improvement skills required for each group of staff in a provider organisation. For example, the skills listed below are suggested for frontline staff (i.e. junior doctors):

- 1 Setting goals and measures.
- 2 Identifying problems.
- 3 Mapping processes.
- 4 Testing change.
- 5 Simple waste reduction.
- 6 Simple standardisation.
- 7 Team behaviours.

In response to Berwick's recommendations relating to training and capacity building, the RCoA updated Annex G of the anaesthetics curriculum and

Figure 1 PDSA and Reflection



included a new section on 'Improvement science, safe and reliable systems'.

The learning outcomes outlined in Annex G<sup>9</sup> follow Deming's logical steps<sup>3</sup> below:

- 1 Understanding the need for improvement.
- 2 Understanding the model for Improvement.
- 3 Measurement for improvement – data collection to highlight the need for change.
- 4 Using improvement techniques to drive change.
- 5 Testing what works and learning what does not work.

Trainees at the basic level are expected to be 'participants' who engage with incident reporting, data collection for the National Emergency Laparotomy Audit (NELA), national quality improvement projects and audits. At this level, trainees are expected to reflect on whether they are doing things right and demonstrate 'single-loop learning'

as a part of lifelong learning.<sup>5,6</sup>

At the Intermediate level, trainees take on the role of 'team mates' and play a key role in leading projects, often using ideas from 'Guidelines for the Provision of Anaesthetic Services'<sup>10</sup> and the Audit Recipe Book. They would be expected to demonstrate practical experience of PDSA cycles and of leading local QIPs including developing courses. At this stage, they are expected to reflect on whether they are doing the right things, thereby demonstrating an insight into 'double-loop reflection.'<sup>5,6</sup>

Higher and advanced training in QI is often undertaken 'out of programme'. Health Education England has teamed up with NHS Trusts to provide leadership fellowships aimed at service improvement. These fellowships provide opportunities for collaboration and teamwork, plus the opportunity to pursue a postgraduate qualification in medical education or leadership and management. This prepares them for transformational learning and triple-loop reflection.<sup>5,6</sup>

## Learning in organisations

The Care Quality Commission (CQC) uses five key lines of enquiry<sup>11</sup> to assess 'Quality'. These are:

- 1 Is it safe?
- 2 Is it caring?
- 3 Is it responsive?
- 4 Is it effective?
- 5 Is it well-led?

The CQC report provides feedback to trusts on the quality of care provided. Feedback and reflection are essential educational components. Root cause analysis represents 'reflection' at an organisational level. This is particularly important with respect to learning from serious incidents and 'never' events. Understandably, reporting of serious incidents forms the basis of 'quality improvement'. Dissemination of learning at both individual and organisational levels is the means to continual quality improvement. A 'learning' organisation is one where serious incidents are followed by effective, 'no blame' debriefing processes and action plans for safety.

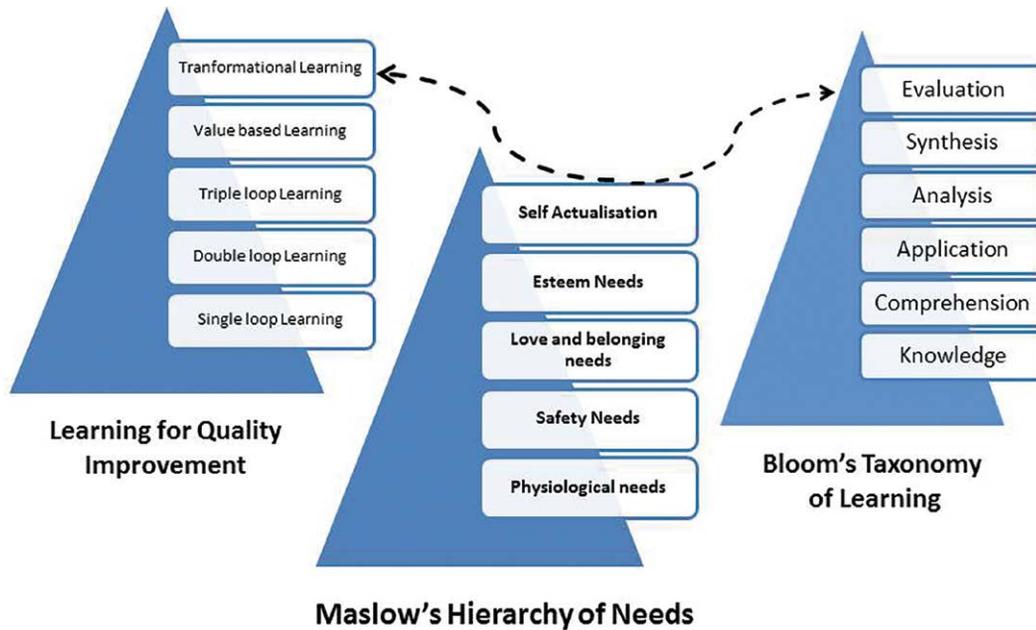
## Improving QI in practice

One incentive to gain competencies in quality improvement is the legal requirement to revalidate. Domain 2 of 'Good Medical Practice' relates to quality improvement. Regulatory bodies and the medical royal colleges have specified that all doctors need to demonstrate a commitment to QI in order to retain their licence to practise.

The NHS institute for Innovation and Improvement has excellent online learning resources. The Perioperative Improvement Science and Management (PRISM) teaching website ([www.prism-ed.com](http://www.prism-ed.com)) is an improvement science teaching website aimed at the perioperative clinician.<sup>12</sup>

On an organisational level, the Commissioning for Quality and Innovation (CQUINs) payments

Figure 2 Maslow, Learning and IQ



framework<sup>13</sup> encourages care providers to share and continually improve how care is delivered.

As anaesthetists and intensivists, we are at the centre of the safety and quality agenda. Mahatma Gandhi said:

'Your beliefs become your thoughts,  
Your thoughts become your words,  
Your words become your actions,  
Your actions become your habits,  
Your habits become your values,  
Your values become your destiny.'

Albert Einstein said 'If you always do what you always did, you will always get what you always got.'

The words of these two leaders emphasise that quality improvement starts with us. Learning through reflection underpins quality improvement. Our attitudes and willingness to participate will determine if the principles of QI can enhance and sustain 'quality' in the NHS.

#### References

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