Getting started with the model for improvement: psychology and leadership in quality improvement

Although the case for quality in hospitals is compelling, doctors are often uncertain how to achieve it. This article forms the third and final part of a series providing practical guidance on getting started with a first quality improvement project.

Introduction

So far, this series on improving quality in health care has considered the model for improvement and introduced process control charts (Pratap et al, 2012, 2013). However, a working knowledge of relevant psychology is equally necessary to the would-be improver. This final article look at such issues before turning to matters that follow a project's successful completion.

Psychological considerations in quality improvement

The right team

The quality improvement process is viable only if a team approach is taken. Multiple team members are required, in part since any process worthy of improvement efforts involves individuals from more than one profession or department. For this reason no one individual will understand every aspect of the process in full detail. Furthermore, not only subject knowledge, but also quality improvement skills are required. This may necessitate bringing in a quality improvement coach. An external quality improvement expert, especially if fresh to the target process, is ideally placed to help the group see the wider perspective. If this is not possible, however, this series will provide the fundamental quality improvement knowledge required. An independent data analyst can be very useful in providing objectivity to the crucial but often controversial task of collecting data on the progress of improvement. This is another role that a dedicated quality improvement consultant may offer.

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The right team mix is vital to success (see *Case study*). Undoubtedly this must include representatives of those on the front line of the target process. For example, if aiming to improve the intake of patients into an emergency department, spokespersons from among the receptionists and triage nurses must be included. Responsible managers must either be on the team or at least have given a clear mandate. It is wise to ensure representation of all professions, disciplines or departments who contribute to the process.

Do not forget to include 'customers' of the process. Often these are patients or family members, in which case invite their representatives to join the team. The immediate beneficiaries of some health-care processes (including pathology or laboratory services) are other health-care workers, in which case they should be represented. Fresh and effective thinking is stimulated by bringing together representatives from all parts of a system who otherwise may never meet (Plsek and Wilson, 2001).

Engendering motivation to change

There is a natural human tendency to resist change. Lewin (1946) presents a model for personal change, which gives useful guidance to those seeking to lead improvement within a system. He views change in three stages: unfreezing (accepting the need to change), moving (changing actual behaviours) and refreezing (making the change embedded). In the 'unfreezing' phase Lewin notes the importance of creating motivation, of understanding why the status quo cannot last, and of the personal anxiety regarding one's own competence to effect change. Examples of 'burning platforms' to inspire change include a recent iatrogenic patient death or threat of closure of a unit or institution. Junior medical or nursing staff often feel powerless to make a difference in the large and busy modern hospital, but there are countless examples where such individuals have done just that (including in the accompanying fictional case study).

'Moving' is concerned with changing one's mental models and with learning new ways of internally processing events. This might include a health-care assistant in theatres accepting that she can and should challenge the surgeon if she suspects that he is about to perform surgery on the wrong side of the body. Vital to this phase is a feeling of personal safety, which might include freedom from ridicule or from losing one's job, depending on the individual and the changes under consideration. For example, the health-care assistant will feel more confident in her constructive questioning if the hospital chief executive has offered personal support to workers speaking up in this way.

The concept of 'small tests of change' is fundamental to the model for improvement, but is also important in establishing this sense of safety. Once team members embrace the concept, they will understand that they are not themselves impotent in the change process. A new house officer *can* suggest a 'test of change' to fix a problem in the daily workflow of the ward, rather than working round it like her predecessors did. Looking beyond the team, doubters find it tougher to say 'no' to a trial exhibiting both systematic and transparent conduct and which also can be reversed readily. The ward sister is much more likely to try a new way of running the ward round today, if she is fully confident of a return to the old way tomorrow if it does not work out. All of these are embodied in well-conducted plan-do-study-act (PDSA) cycles.

Even if a team has great ideas, proficiencies in influence and persuasion are pivotal

to the success of any quality improvement project. Many books purport to teach such vital yet intangible skills, so this article discusses just a few strategies with proven benefit. It is essential that all involved understand your project's aim and appreciate its importance. Communicate the urgency of the problem you are aiming to fix (Kotter, 1995). Mandel et al (2009) found that hearing from actual patients, or their families, can be powerful. An articulate father, for instance, can explain persuasively the challenges of ensuring coordination between specialists in the care of his severely disabled daughter. Another important idea is the 'short-term win', where a relatively small but unarguable (and ideally straightforward) part of a wider problem is tackled first in a highly visible fashion (Kotter and Cohen, 2002). Success in this component will boost morale within the team, impress senior leaders, attract those from outside the team to support the project, and also remove ammunition from detractors.

Often naysayers fear that quality improvement will be too expensive. In fact quality improvement contributes to the future vitality of almost any health-care facility, and successful projects often save money (Leatherman et al, 2003). For instance, Sparling et al (2007) demonstrated that the savings from prevention of surgical site infections greatly exceeded the extra costs incurred.

Everett Rogers (1995) undertook extensive studies of process change in action. His

Quality improvement case study

The previous parts of this series introduced a fictional quality improvement project to exemplify use of the model for improvement. A team at St Elsewhere University Hospital NHS Foundation Trust aims to improve outcomes for acute myocardial infarction patients. Previous articles discussed the choice of project, and watched as the team came up with appropriate aims and measures, created a process map as an aid to establishing a key driver diagram and finally tested some interventions in plan-do-study-act cycles: the first unsuccessful, but the second ramping up in scale until it became established practice. However, previous instalments skimmed over the fundamental step of building the quality improvement team.

Following criticism from regulators, improving cardiac care is considered a strategic priority by the Trust board. The hospital executive is clear that leadership by a clinically-respected, senior cardiologist is essential to the success of the project, but the individual chosen has little previous quality improvement experience. Since the Trust has recently recruited a quality improvement expert from industry, he is asked to coach the cardiologist in quality improvement methodology. He is heavily involved when the team are seeking to define the relevant aspects of quality for the project, and he offers useful advice on setting goals. The team recognizes that his skills in data collection techniques and also his understanding of control charts are pivotal. His suggestions on running team meetings are judged invaluable by the team leader, who is more familiar with hospital committees and case conferences. Indeed the coach participates in many of the team's early meetings.

Under the guidance of the coach, the team leader picks her team from the many staff involved in cardiac care in the Trust. She selects a newly-appointed consultant cardiologist, who is excited about improving outcomes, and who has connections at the regional centre where he trained, and which is the Trust's point of referral for those post-myocardial infarction patients needing more complex interventions. The new consultant in turn proposes the inclusion of one of the year 3 specialty trainees to represent the junior medical staff.

The senior sister of coronary care has to be brought on board, as the majority of myocardial infarction patients pass through the unit she runs, even though she says her staff are excellent and that poor outcomes are certainly not the result of a deficiency in coronary care unit nursing care. Another of the coronary care unit nurses, who has some experience as a quality improvement team member from his previous job, is also selected. As he often works night shifts, he cannot attend every meeting, but the leader makes sure to keep him 'in the loop' with an e-mail newsletter to summarize each meeting. She recognizes that he is often on the coronary care unit at times when more senior staff are not, and that he enjoys cordial working relationships with many junior doctors and nurses. The cardiology unit pharmacist also joins the team, since drug therapies are vital in post-myocardial infarction care.

Reflecting that many acute myocardial infarction patients enter the hospital via the emergency department, one of the emergency department consultants is recruited to the team too. A local GP and community nurse are also invited. The team suffers considerable uncertainty when, at their second meeting, they debate whether to include a patient representative. Many feel that, by virtue of their long years of combined experience in cardiac care, they certainly have the patients' perspectives close to their hearts. A patient would not understand the workings of the hospital, some feel, and how could the team maintain confidentiality if specific cases are discussed? By chance, a retired local businessman visits the coronary care unit on the first anniversary of his myocardial infarction, to thank the nurses for their care and to deliver a cheque from sponsorship in a recent 10 km run. The new consultant, who is leading a ward round on the coronary care unit at the time, seizes the opportunity to invite this motivated individual to join the team. His fresh view turns out to be most enlightening, and the team are inspired by his personification of their project's aim of a healthy and active lifestyle for myocardial infarction survivors.

At first the team leader finds it hard to build momentum for the group. However, once some early data collection is performed, team members are horrified to discover that only 30% of patients receive all of the evidence-based interventions that they should. Even the sceptical coronary care unit sister agrees this is a real eye-opener. The ex-patient challenges the group to find new ways to overcome barriers and deliver the right care. The team agrees there is a need to change the culture within the cardiac unit. Instead of junior doctors owning sole responsibility for prescribing necessary drugs, all members of the clinical team must share this function. One quality improvement team member proposes a nurse-led checklist for all acute admissions to the coronary care unit. The consultants suggest trialling a multidisciplinary myocardial infarction pathway proforma.

As described in the previous article, the team enjoys early success in improving rates of discharge on indicated post-myocardial infarction drugs. This process, whereby the pharmacist staples a red reminder card to each patient's drug chart, works well even when junior doctors from other specialties are cross-covering out of hours. On learning this, the hospital's medical director proposes a trial of the same intervention for chronic obstructive pulmonary disease discharges too. Such visible success early on makes the team more confident of tackling the substantial challenges ahead. All staff in cardiology, and indeed the medical unit more widely, come to appreciate that cheap but ingenious adjustments to work flow can impact outcomes substantially.

concept of 'diffusion of innovation' reflects a spectrum of willingness to innovate (*Figure 1*). Undoubtedly those with a passion for change – and improvement of the target process specifically – will be important contributors to your project. But it is important also to include those away from the 'bleeding edge' of innovation too, as Rogers' theory predicts that early adopters hold more sway with the majority than those readily frustrated and iconoclastic innovators. Indeed history abounds with scientists and inventors who died in obscurity leaving the genius of their work to be re-discovered only much later.

The most conservative may not be the best people to involve in the initiation phase of a project, but ignoring them places its success in peril. At all stages, consider their needs. And do not stigmatize so-called 'laggards'. Remember that every individual typically occupies each position on the spectrum in different domains and over the course of their lifetime. Think of the conservative senior consultant, now nearing retirement, who pioneered a revolutionary new technique earlier in his career. By uncovering other domains in which 'resistant' individuals or groups actually excel, and couching your desired change in these terms, considerable advancement can be achieved (Plsek and Wilson, 2001).

Further steps in quality improvement

Implementation

When a team has found an intervention that really works, the next step is to make it permanent, and is known as implementation. This stride must be taken only once there is a high degree of belief that the intervention will work at all times and in all circumstances. For example, the new medical admissions unit process has proven effective through ramps of PDSA cycles during the day and at night, on the weekend and even a bank holiday, with numbers from one through to all patients on a busy Friday evening.

There are several ways to effect implementation. Rarely is the change so straightforward, and the benefit so certain, that it can simply be rolled out, but occasionally this is indeed appropriate. Perhaps, for a hospital with a high meticillin-resistant *Staphylococcus aureus* infection rate, a safe, cheap and effective new eradication therapy becomes available. The results of testing on one ward are so impressive that it is immediately brought in across the trust.

More often a new process is carried out in parallel with the old until it is embedded in the system. For example, when introducing an electronic reporting system for lab results, it may be safest to keep getting paper copies too for the first few weeks. Perhaps a new process can be divided into manageable chunks that can be put into operation one at a time. Sometimes it is right to bring in the new process to one sub-population at a time, such as when a new computer system is introduced successively to departments until the whole hospital is using it. Even in the simplest case it is wise to conduct implementation as a PDSA cycle. For more complex roll-outs multiple cycles will be appropriate.

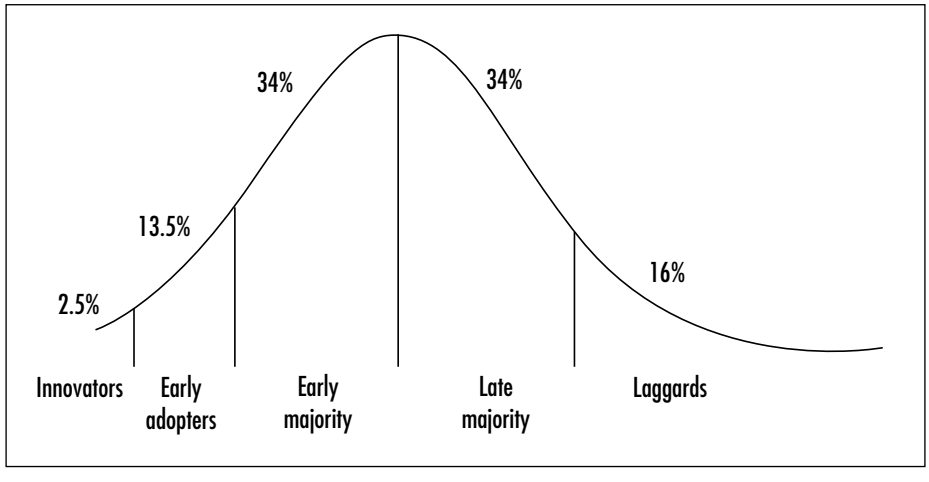
In planning your implementation phase, consider all stakeholders – those who benefit from the process, those who execute it, those who manage it, and anyone else impacted by the proposed change. For a new discharge medication process on the orthopaedic ward, this will certainly include the consultant, the junior doctors, the ward manager and nurses at all levels including health-care assistants, the ward pharmacist, the dispensing team in main pharmacy, the discharge lounge coordinator, and – not least – the patients and their families. It may impact others too, perhaps the physiotherapist or occupational therapist or even the patient's GP. The directorate manager must be supportive of the change too.

Think about the requirements of each of these groups in undertaking the change, and reflect on how it will affect them. Perhaps the consultant surgeon fears that the new discharge system will disrupt the ward round and make her late for theatre. Estimate the level of commitment to the change for every stakeholder: will they passively let the implementation occur, support those bringing in the change, or actively lead its introduction? For each individual or group, determine what is needed to move their engagement up the ladder. The orthopaedic department manager may be equivocal about the new discharge process now, but she will champion it if convinced that it will lead to shorter surgical waiting lists.

In general there is much better support for change when people understand why it is taking place. Different communication techniques work best for different individuals. Some like to hear the facts and figures, others the human story, yet more want to know how it links to the goals of their bosses and of the organization. Maybe the surgeon is relieved that her waiting list is ten patients shorter, the nurse is happy that Mrs Smith is pain-free at last after her hip replacement, and the manager will at last be able to impress the chief executive and get promoted to the Department of Psychiatry.

Most stakeholders will want to know how the implementation will affect their day-to-day work as individuals. For instance, the house officer worries he will have to arrive at work 20 minutes earlier to make the new discharge process work. It is important to elucidate and empathize with their anxieties. Ensure that questions are

Figure 1. The 'diffusion of innovation'. After Rogers (1995).



answered now, and make it clear how they will be able to get any queries addressed in the future. This could be by promising an open meeting one week into the implementation, or by the team leader making her mobile telephone number available. Publicity for the change in relevant areas of the organization is essential, perhaps a paragraph or two in the department newsletter, or maybe a page on the Trust's intranet site. Those who were involved in testing phases can be great advocates, as their testimony carries most authenticity. For example, have the change presented to the other junior doctors by that enthusiastic ST2 who first worked through the bumps in the testing of the new process. Being transparent and open is effective in quality improvement in general (Mandel et al, 2009).

Sustainability

When all identified interventions have been implemented, and the goal met, the project enters a new phase. The team may have finished with tests of change, but unexpected factors will still influence the key measure. So long as the project's aim remains important to the organization, it is never over. Continuing both to track the key measure, and to plot it on a run chart on a regular basis, will provide early warning if things go wrong. An instructive example follows a successful project to reduce catheter-associated bloodstream infection by Wheeler et al (2011). In this case, continued surveillance ensured that unforeseen negative consequences of introducing a new connector valve were rapidly identified (Wheeler et al, 2012).

Spread

Following a successful implementation phase locally, some interventions warrant application to areas beyond their original testing ground. This may have been intentional or hoped for from the outset, or reflect the revelation of benefits beyond expectation. For example, the new drug administration process reduced errors on the intensive care unit. Can it be adapted to do the same for chemotherapy? Techniques for facilitating this 'spread' may also be indicated when good ideas from other institutions or departments are brought in house. For instance, Pronovost et al (2006) took interventions which had proven successful in individual intensive care units and spread them across the state of Michigan. The Institute for Healthcare Improvement has developed a framework to encourage spread of interventions across health care (Massoud et al, 2006). They provide guidelines to establish first that the intervention is ready for spread, as well as the organization being agreeable to receiving it. A clear aim for spread is defined before laying out an initial plan. Finally the plan is executed with continual monitoring and refinement as necessary.

Establishing a quality improvement framework and culture

Success in a first quality improvement project will draw both admiration and also interest in emulating its achievements. As quality improvement efforts gain momentum in a department, division or institution, coordination gains importance. The approach to establishing a quality improvement programme in the authors' department of anaesthesia at an academic children's hospital has been described previously (Varughese et al, 2010). Dashboards (Nelson et al, 1995) and balanced scorecards (Kaplan and Norton, 1992) are useful ways to summarize current levels of quality, and can suggest the next target for improvement. It is important, however, to recognize that many worthwhile quality improvement targets cross departmental, professional and/or disciplinary boundaries. As quality improvement efforts accelerate within a hospital, it becomes necessary to ensure that projects are aligned with overall strategy (Mandel et al, 2009).

The Institute for Healthcare Improvement offers guidance on establishing quality improvement leadership at system level (Reinertsen et al, 2008). An important general principle in the study of systems is that, if each component of a system, considered separately, is made to operate as efficiently as possible, then the system as a whole lies some way off its maximal efficiency (Ackoff, 1999). The consequence is that too many autonomous quality improvement projects may be counterproductive.

Conclusions

As the focus on improving quality in health care increases, it is important that a framework to achieve this is familiar to doctors (Batalden and Davidoff, 2007). Understanding the approach pioneered by Deming, the model for improvement, and its supporting tools will help hospital doctors develop the skills that are increasingly necessary. **BJHM**

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LEARNING POINTS

- The right team is essential to any quality improvement project.
- When building your team, include both frontline staff and managers from all disciplines involved in the process that you are improving, as well as representatives from groups impacted by the changes.
- Communicate your improvement and its benefits to everyone involved, but tailor your information and approach to each group or even significant individuals.
- Beware of dissipating attention once the project has achieved its goal – keep tracking the key measure.

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