Leading improvement
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Abstract
Purpose – To provide research-informed guidance to leaders of quality and safety improvement and evidence-based materials for education programmes for leaders


Findings – Although most literature emphasises the importance of committed leadership for successful quality and safety improvement, research evidence supporting this is scarce and often scientifically limited. The research shows evidence of the limitations and scope of leader actions for improving health care provision, the need to engage clinicians in this work and ways to do so, as well as the leadership role played by others apart from senior leaders. The ability of managers and other leaders skilfully to tailor Q&SI to the situation may be important but descriptions of how leaders do this and evidence supporting this proposition are lacking.

Research limitations/implications – More research is needed about whether or how the leader role is different according to the stage of quality and safety development of the organisation, the type of organisation, the type of context, the level and type of leader and the type of improvement and improvement method.

Practical implications – Implications for leaders’ actions are provided in a “best evidence guidance” checklist. This provides more tangible and research-informed guidance than the inspirational literature or studies from single organisations.

Originality/value – This paper provides the first overview and synthesis of a wide range of studies which can be used as a basis for future research and materials for educational programmes. It provides the first detailed guidance for leaders about specific actions which research suggests they need to take to improve quality and safety.

Keywords Leaders, Managers, Quality, Safety, Management development

Paper type Literature review

Introduction
It is no longer enough to run a service – managers need to continually improve their services. This is one of the changes in management which follows from more demanding patients, evidence of safety deficiencies and government regulations. Leaders turning to the literature for guidance about how to do so find that many texts emphasise the importance of leadership by the chief executive officer (CEO), and the need for unity of leadership by senior leaders and the management team (Deming, 1986; Juran, 1988; Crosby, 1979; Gaucher and Coffey, 1990). This emphasis is based on consultancy experience in many types of organisation or personal experience in a few. There are, however, limitations to this knowledge from both a scientific and a practical perspective:
Has the proposition been rigorously tested in health care? (Is there empirical evidence in health care of leader actions or inactions which are associated with failed and successful improvement? How important a factor is the leaders actions, compared to other factors?)

Does it apply to all health care provider organisations? (Health care CEOs may have less influence than in other industries because of professional autonomy, multiple stakeholders and the role of politics (Pollitt, 1990, 1996).)

Are there circumstances in which the proposition may not hold? (Not all types of improvement may need the same type of leadership.)

If senior leadership is necessary, what specifically should leaders do? (Many leaders need more than general inspirational guidance, when, for example, they are fact with conflicts between short term demands of budget economies, personnel shortages and longer term investments in quality and safety improvement.)

The concept of leadership is defined in many different ways and is difficult to put into operation for empirical research. Where researchers have built on the consultancy research, they have often done so uncritically.

The purpose of this paper is to contribute to scientific understanding of leadership in health care and practical guidance for leaders of improvement. The paper aims to answer these questions using findings from empirical research rather than theories, consultancy or self-reports. A review of evidence about this subject can provide a basis for further research and help managers on development programmes to base their actions on evidence and make their improvement interventions more effective.

After presenting the finding from a review of this research, the paper gives specific guidance for leaders based on the best evidence available which can be used for leader development programmes. The full review can be downloaded from the internet: the methods used for the review and definitions of leader, manager and improvement are described in (Øvretveit, 2004a) and summarised below:

1. **Leader and manager:** A manager is a person holding a formal position in an hierarchy who is answerable for other’s work. “Leader” describes both them and personnel who influence others in informal ways.

2. **Leadership:** any person, group or organisation exercising influence, not just the actions of managers.

3. **Ordinary leadership for improvement (OLD):** leadership by any member of the organisation to influence or support others in carrying out improvement. A leader for improvement is any person who influences others to spend time making the service better for patients.

4. **Leadership by teams or groups:** a team or group influencing others outside of the team or group to do something they would not otherwise do.

5. **System of leadership for improvement (SLI):** all formal and informal leader roles, teams and groups which support improvement as part of the everyday work of an organisation.
Quality and Safety improvement in health care (Q&SI):  
- Reducing avoidable harm and risks to patients, and raising patient 
satisfaction, clinical outcomes and efficiency, within available resources and 
higher level regulations. (Result definition.)  
- Making changes based on continuous quality improvement concepts and 
methods to raise health care quality and safety, and/or lower costs without 
reducing quality and safety levels. (Process and objective definition.)

The review used a simple scheme to indicate to the reader the type and strength of the 
evidence:
- “eA”: Empirical research strong evidence. (Intervention study, or rigorous 
interview or survey study where data was gathered systematically, methods 
were described and reproducible, and conclusions followed from the data.)
- “eB”: Empirical research, weak evidence. (Small interview study, survey with 
bias, or based on personal experience.)
- “eC”: Conceptual discussion, not based on systematic empirical research.

After assessment, some studies which did not meet the “strength of evidence” criteria 
were retained because no other evidence was available and/or their strong relevance to 
the questions. Examples were detailed self reports by managers, or conceptual articles 
which provide useful frameworks for future research. The methods for the review and 
synthesis are those developed for management and some public health subjects, which 
includes qualitative-, observational- and other types of evidence which are excluded 
from traditional systematic reviews (Øvretveit, 2003).

The search discovered many books and papers on the subject, both within and 
outside health care, but few empirical research studies. Most studies were 
observational interview or survey studies. Few studies critically assessed or tested 
the proposition that the leaders role is important, or examined what different leaders 
did in different circumstances for different types of improvement. The review 
concentrated on empirical research into the leaders and managers role in quality and 
safety improvement in health care provider organisations such as hospitals and 
primary care. This was because one aim of the review was to provide content for 
management development programmes.

Evidence of the importance of (senior leaders) CEO in improvement
The search of the empirical research found some evidence that senior leaders’ actions 
are associated with successful and unsuccessful improvement programmes and with 
the quality and safety performance of the health care organisations they lead. There is 
also evidence that their influence over quality and safety issues may be more limited in 
health care than in other sectors, especially in large public teaching hospitals. The 
review found two studies reporting evidence that leadership was not important for two 
different types of improvement – these are noted first.

Lack of influence of senior leaders
A study of one type of improvement – the use of minimally invasive technology in 16 
cardiac surgery teams – found that “high level management support for the minimally
invasive technology wasn’t decisive in hospitals success in implementing it”, although it did find that surgical team leaders had an important role (Edmondson et al., 2001).

A second study reported a lack of influence of chief executive officers (CEOs) on the rate of implementation of another type of improvement programme (total quality management” (TQM)) in 25 Australia hospitals (Baldrick et al., 1996). Other factors appeared to explain rate of implementation: the strategy used, size and complexity, private or public, profit or non-profit, and teaching versus regional or specialist. In a later paper the researchers reported that, “Little impact of leadership attributes was found, contrary to studies conducted elsewhere” (Saunders et al., 1997). The explanation proposed was that this could be, “due to the strong influence of different professional groups within the hospital”.

The study postulated that the CEO effectiveness in getting implementation in the short to medium term is likely to be linked to the degree of direct power the leader has to implement change – in small private hospitals with a “flat structure” the direct influence of the CEO is high and they are likely to be more able to influence implementation. They report some evidence of, “a lack of CEO influence on organisational issues in implementing TQM in large public hospitals” which may be due to the “power gradient” between CEO and the “delivery interface” as well as the “complex cultural environment”(Saunders et al., 1997).

A commentary by one paper (Bigelow and Arndt, 1998) reports a high failure rates with another type of improvement – re-engineering – a finding also reported in UK studies (McNulty and Ferlie, 2002). The commentary suggest that this might not be due to “poor leadership” but to, “a lack of fit between the practice and characteristics common to most hospitals”. They also note lack of evidence about the benefits of reengineering and the pressure on managers to adopt, suggesting that institutional theory can explain the symbolic but not substantial adoption of the approach. The implications are that leadership may less important for some types of improvement which are likely to fail due to factors independent of leadership. However, the specific differences between reengineering and other types of incremental improvement are not discussed.

**Senior leaders and poor quality**

A second category of research provides some support for the proposition that senior leaders have an important role in improvement and in quality performance. This research shows that management action or inaction is associated with poor quality and safety performance or with “organisational failure”. An interview study of UK National Health Service (NHS) public sector managers and four “failed” NHS provider trusts and five trusts at different stages of “turnaround” identified CEO shortcomings and “organisational failure of leadership” as key contributors to poor organisational performance. CEOs failed to challenge internal vested interests; showed unwillingness to delegate; were isolated from colleagues in other organisations; and were reluctance to make decisions. Other interviewee comments pointed to a CEO who was either exclusively concerned with operational or strategic issues, and a history of dysfunctional relationships between clinicians and management (Protopsaltis et al., 2004). All the 12 risk factors for a failing health care organisation identified in the study are leadership factors, or strongly influence by leadership. The study concluded that “changing the CEO is necessary but not sufficient. Other senior and middle
management are key to the process. Re-engaging clinical staff is of particular importance”.

A number of UK NHS reports and studies also cite the absence of leadership as one, or the main, cause of safety or quality failures. Investigation reports in this category include the UK Bristol tragedy (Kennedy, 2001), which noted senior leadership had not given the resources and support for clinical audit and, “a tendency towards confidentiality and even secrecy about audit and quality issues”. One analysis of failures of care in which patients are harmed or lives are lost concluded that “these problems seem to happen in organisations with inadequate or weak leadership”, and many of the other common factors reported are leadership-related (Walshe, 2003). A cross-country comparison of failures came to a similar conclusion (Walshe and Shortell, 2004). The UK NHS inspectorate reported that breakdown of leadership is likely to have contributed to higher death rates in the UK heart and lung transplant programmes (CHI, 2001).

Evidence of the importance of senior leaders to Q&SI
A third category of research provides stronger supporting evidence of the importance of senior and other leaders in Q&SI. The evidence reported is both negative – lack of involvement is a common factor associated with failure – or positive, where certain actions were found to be associated with success. However, variations in scientific quality of the studies mean that the associations are often weak and success is often defined subjectively and over the short term.

Studies which cite lack of management involvement as one, or the most significant, factor in less successful quality or safety improvement, include:

- Involvement of a GP practice manager was associated with significantly higher quality audit activity in UK NHS primary health care practices (Chambers et al., 1995).

- Failure of CQI intervention was attributed to poor leader support in a controlled study of improved depression care management in nine US primary health care clinics: “probably the most important limiting factor was that leadership at both the medical group and clinic level only passively supported this change effort” (Solberg et al. 2001).

- Leadership and appropriate leadership styles were most often reported as needed but missing factors in UK NHS breakthrough collaborative projects (Bate et al., 2002).

- Lack of nurse participation in quality audit in the UK NHS was reported as being due in part to leaders lack of involvement (Cheater and Keane, 1998).

- Constraints on progress in quality audit by therapy professions in the UK NHS was reported as being due in part to lack of leadership (Robinson, 1996).

- Other US research into quality programmes in health care also reports that inadequate leadership is associated with failed Q&SI (Hughes, 1992; Sullivan and Frentzel, 1992; Gann and Restucci, 1994).

One of the first pilots of CQI methods in health care concluded that the support of management was one of the ten principles underlying successful projects (Berwick et al., 1990). This is echoed by other’s reports of their experience, as well as by
commentators and in some research evidence (Gaucher and Kratochwill, 1993; Berwick, 1996; Mohr and Abelson, 2002; Moss and Garside, 2001; Bigelow and Arndt, 1995, 1998; Chassin, 1998; Carman et al., 1996; Weiner et al., 1997; Parker et al., 1999).

The strongest evidence is provided by six US studies (Shortell et al., 1994 and 1995; Carman et al., 1996; Weiner et al., 1997; Parker et al., 1999; Bradley et al., 2001). A study of intensive care performance asked, “does good management make a difference?” (Shortell et al., 1994). The study provides evidence that it does, finding that caregiver interaction, comprising the culture, leadership, coordination, communication, and conflict management abilities of the unit is significantly associated with lower risk-adjusted length of stay, lower nurse turnover, higher evaluated technical quality of care and greater evaluated ability to meet family member needs.

An extensive survey of 162 US Veterans Health Administration (VHA) hospitals was carried out and ten selected for site visits according to their high and low QI implementation scores. The study considered degree of implementation in relation to top management commitment (measured by leaders self-report answers to 10 questions), and in relation to organisational culture. The analysis shows evidence that higher (self-reported) “commitment” was related to higher QI implementation and concluded that “the extent to which top management becomes directly involved in QI activities determines the degree of QI implementation” (Parker et al. 1999). Additionally, the study findings suggest that “a culture emphasizing innovation and teamwork provides an important foundation for implementing a QI initiative”. However, it should be noted that academic research raises more questions than management consultants about the degree to which leaders can change culture in health care (Scott et al., 2003).

The study also found that degree of QI implementation was associated with: close working relations in top management, their understanding of QI principles, long tenure of QI champions in top leadership, staff perceiving top management as strong advocates of QI and as “open minded and communicative”. It also depended on whether hospital directors perceive there to be good support for QI, and their creating a programme “unique for the facility”: skilful choice and adaption of improvement methods is reported in other studies as an important action by leaders. The study also found that “commitment to QI declines progressively at lower levels” and that, at the high implementation sites, QI was not perceived by employees as “a distinct programme per se, but rather as part of an overall culture with an emphasis on quality”.

Similar findings were reported in a long term study of quality programmes in six Norwegian hospitals. Increasing differences over time were found between the hospitals’ degree of adoption of quality methods (Øvretveit and Aslaksen, 1999; Øvretveit, 1999). One factor of the two more successful programmes was the flexibility of the programme, in both cases largely due to “the preparedness of the hospital director and chief medical director to stop, listen to and understand criticisms and reconsider the direction of the programme”.

Some studies report senior leader’s influence on specific types of improvement. One investigated senior manager’s roles and activities in eight US hospitals encouraging better physician prescription of beta-blockers after acute myocardial infarction (AMI) (Bradley et al. 2003). The hospitals were rated for degree of success in beta-blocker usage, and this was related to an analysis of interviews with 45 clinical and
administrative staff. Five common roles and activities were found to represent the variation in management involvement: personnel engagement of senior management, management’s relationship with senior staff, promotion of an organisation culture of QI, support of QI with organisational structures and securing organisational resources for QI.

The study concluded that it is misleading to represent QI as either having or not having management support, rather that there are many different roles and activities which managers undertake for QI. Some management activities were more apparent in the higher performing hospitals: senior managers actively advocated QI within the hospital and with the board, had good working relationships with medical staff, supported interdepartmental and multidisciplinary collaboration, and ensured resources were available for QI (Bradley et al., 2001, 2003). The study also found evidence consistent with other reports: that managers personal engagement is necessary (Savitz, 2000; Weiner et al., 1997), and the importance of their role in creating culture and structure for QI (Savitz, 2000; Brailer, 1998; Shortell et al., 1994; Gist et al., 1987). Other less-strong evidence is reported in the full research review (Øvretveit, 2004a).

In summary, although there are many publications stressing the importance of leadership, only a few studies provide observational evidence to support this view, and there are no studies have rigorously tested this proposition in health care. The research is of three types: research which found leadership involvement was not necessary for improvement (two studies found); studies showing the absence of leadership involvement and its possible consequences; and studies showing positive associations between leadership involvement and improvement. The evidence is that senior leaders do have an important role in quality and safety improvement. However, the evidence is not strong and this conclusion arises because of the cumulation of similar findings from observational and mostly uncontrolled studies, rather than from well designed prospective controlled experimental studies. There is also evidence that factors other than leadership are important to successful QI in health care, and that leaders are more likely to be successful if they choose strategically significant improvements which are amenable to improvement interventions, skilfully adapt the methods for the situation, and persistently follow and revise the programme.

Medical leadership and engagement
The most common finding reported in empirical research into successful and failed improvement concerns the absence or presence of “engagement” of senior clinicians – primarily doctors. “Involving doctors” stands out from the empirical research as the most important necessary (but not sufficient) factor for improvement success. The most common explanations given for failure to involve doctors are their lack of time and pressure of work, and the deeper explanations of medical autonomy and the difficulty of assessment of quality by non-clinicians – features of health care health care which differentiates it from other industries.

Is there evidence of specific actions which senior leaders or others have taken to overcome these challenges and to gain medical and professional involvement, or specific details of successful “involvement” and “engagement”? 
Different evidence of actions in relation to this subject is reported in the empirical research: actions by senior managers and formal medical leaders, those of middle level medical or team leaders, and actions by informal opinion leaders.

**Senior leaders' actions to involve doctors**

One of the largest studies of top leadership was a survey study of 2,200 US community acute hospitals in 1989 and 1993. This study assessed the effects of top leadership on the degree of physician involvement in QI (Weiner et al., 1997). Involvement was measured in terms of physician participation in QI training and in QI teams, and in whether clinical departments had QI teams and procedures to use quality data in the teams’ work. Leadership measures included CEO involvement in QI, board quality monitoring and activity in QI, and active employed physician involvement in governance, as well as “physician at large” involvement (physicians not employed, but with admitting rights). Higher participation by physicians in QI was found to be associated with: CEO and board involvement, active employed physician involvement in governance, longer running quality programmes, and smaller size hospitals. The study speculates that top leadership gives credibility and sustainability to QI by linking it to the organisation’s mission and strategic objectives, allocating resources, and aligning reward and appraisal systems.

**The role of middle level managers and physician leaders in Q&SI**

“Physician leaders” are those in formal management positions such as chief medical officer or head of department, but also those in senior positions in the medical hierarchy who influence others, as well as those lower in the organisational or seniority hierarchy.

“How leaders are leading” was one subject investigated in an interview and site visit study of 20 US “high performing clinical Microsystems” (Donaldson and Mohr, 2000; Batalden et al., 2003). It emphasized the middle and operational level leader’s role in “building knowledge” about “microsystems” (clinical practice teams providing a defined services). From observations and interviews, the study describes the “processes of leading” as involving behaviours in three areas: building knowledge, taking action, and reviewing and reflecting. It and describes these in order to, “enable more people to develop into leaders and more people to share the roles of leading”. Leadership in these units, “focuses action on the way people are hired and developed and involves the way the work gets done. Reviewing and reflecting provides insight as to how the microsystem’s patterns, processes, and structure enable the desired work to get done; what success looks like; and what will be next after that “success” is created.”

One study was found which examined physician leader characteristics which were perceived to be important for one type of Q&SI (Holmboe et al. 2003). It analysed evidence from interviews with 45 physicians, nurses, quality management, and administrative staff at eight US hospitals which had been successful in increasing appropriate prescription of beta-blockers at discharge for patients with acute myocardial infarction. Analysis found that physician leader characteristics were described in four main categories: personal commitment, professional credibility, quality improvement behaviours and skills, and institutional linkages. Each physician leader possessed different combinations of the characteristics from the four categories.
The study also noted physician leaders may have important influence beyond their physician peers.

One empirical study used data from a randomized, controlled trial of quality assurance interventions in 16 primary care practices (Palmer et al., 1996). It studied the clinical performance of leaders and others before and after the intervention, and the leaders’ participation in the QA interventions. There were three findings: a leader’s performance improvement was associated with a similar improvement in their colleagues; a positive leaders “commitment index” predicted colleagues’ improvement independently of the leader change score. It concluded that “physician leaders, by the example of their behaviour, influenced colleagues’ performance”, but also noted that “leaders exerted their influence only after receiving external stimulation for quality improvement.”

Other studies have reported evidence that physician leadership is important to Q&SI (Walshe, 1995; Blumenthal and Kilo, 1998). Walshe comments, “Research suggests that strong clinical leadership is perhaps the most important single determinant of the progress of clinical quality improvement in healthcare organisations”.

**Opinion leaders**

“Opinion leaders” are a category which research shows is important to Q&SI: these are respected professionals whose opinion is influential when colleagues are uncertain about a new idea or change. However, a broad definition of the term would include respected general managers or non-professional trade union representatives.

Observational and intervention studies in health care have found that opinion leaders have a significant role in Q&SI (Borbas et al., 2000; Mittman et al., 1992; Lomas et al., 1991; Soumerai et al., 1998; Soumerai et al., 1998; Berner et al., 2003). One study reports strategies to encourage clinicians to apply research and clinical guidelines in order to improve clinical care (Borbas et al., 2000). The study provides evidence that “essential to the success of the project” was “opinion leaders’ influence, expertise, interpersonal skills, understanding of local practice, and frank advice about why gaps exist between guideline knowledge and practice”.

However, an early review of studies on physician opinion leaders found six showing no significant change in clinical outcomes with the involvement of an opinion leader (Thomson O’Brien et al. 1999). Only two studies showed any evidence of an impact from the presence of a physician leader. The review notes that characteristics of the physician leaders were not described clearly in any of the studies.

These different findings could be the due to different physician leaders’ roles and characteristics in the studies. A study of two quality improvement projects in the UK concluded that definitions of physician opinion leaders were “oversimplified” (Locock, 2001). Another study also notes that a “lack of clarity about physician leaders in improvement efforts makes it difficult to provide recommendations to guide hospitals that want to involve physicians”(Holmboe et al., 2003). This study noted many different terms being used, ranging from “champions” to “opinion leaders”, and also that:

Although educating and persuading peers to change their beliefs and behaviours is an important task of any quality improvement initiative, this study demonstrates that this goal alone is probably insufficient to bring about meaningful change. Many non-physicians are involved in the process of quality improvement. Thus the characteristics of an effective opinion leader may actually be part of a broader and perhaps more accurate conception of what is a physician leader for improving quality.
This evidence suggests that managers would need to identify these leaders and the communication networks to which they belong and actively influence them and gain their support for Q&SI:

... barriers to physician involvement may turn out to be the most important single issue impeding the success of quality improvement in medical care (Stern, 2002).

Let’s be honest, without surgeons actually buying in, we’re going to get nowhere, you might as well not even bother (Neath, 2004).

In summary, empirical research shows that “engaging” doctors is essential to quality improvement, as well as some evidence of “successful involvement” and the role of senior leaders in “winning involvement”. Identifying and influencing “opinion leaders” to promote quality improvement appears to be one successful way to gain involvement, but other actions are needed such as providing time, resources, data, evidence of results and incentives.

System of leadership for improvement
The evidence shows that senior leaders actions are important to Q&SI, but also the limits to their influence. It also shows the importance of leadership by middle level and respected medical leaders. In addition, there is also some evidence of other parties in health organisation playing and important role in leading Q&SI.

Project managers are those formally appointed to lead improvement projects such as a CQI team project, or programmes which include a number of projects. There is evidence from a survey of participants in one UK breakthrough collaborative that low project manager performance and prestige was associated with less successful projects (Bate et al., 2002).

House officers may represent an underused resource for QI according to one study (Weingart, 1998). This study found them to be “skilled at identifying problems, but have difficulty executing sustained and complex QI initiatives”. It shows that peer leadership is powerful way to mobilize resident-physician participation, but requires faculty or staff involvement and support to guarantee continuity.

One influential report notes that, “Some health care organisations have dedicated considerable energy and resources to changing the way they deliver health care. Although these organisations have recognised the need for leadership to provide the necessary commitment and investment in change, they have also recognised that change needs to come from the bottom-up as front line teams recognise opportunities for redesigning care processes and acquire the skills to implement these new approaches successfully” (IOM, 2000).

The literature has documented ordinary personnel exercising leadership by reporting unacceptable treatment of patients, their concerns about quality and seeking to influence improvement both internally and externally (Kennedy, 2001). Research in the sociology of organisations show that there are many personnel who, through their position and informal roles in the organisation, can block or slow change. If inspired and allowed to contribute to improvement, they can have a significant role to play, in adapting ideas to the local situation, getting others to cooperate, and in testing and implement changes.

There is evidence of “ordinary leadership for improvement” from observations of successful Nordic healthcare project teams (Øvretveit, 1999) and in collaboratives, as
well as evidence from a UK NHS project report (Neath, 2004). Ordinary leaders are employees who have detailed knowledge of how current work is organized – who does what and how – and who know who to contact to get things done, and who are known widely in the organisation, often as a result of working in the same area or role for some time. They are often respected as, “the expert on how things work around here”. In some cases they will give emotional and technical support to each other in their improvement work, sometimes forming an “undercover guerrilla network” for improvement, which works in spite of formal leaders. Observations suggests that the project organisation and methods give opportunities for these personnel to contribute, and the confidence and support to “lead” in this way (Øvretveit, 1999). However, this opportunity is not normally available in health care and the resource often untapped.

The evidence thus suggests that the role of “ordinary leaders for improvement” also needed to be considered and supported in a quality improvement programme in an health care provider organisation. This and the empowerment literature challenge the assumption that that personnel or organisations are inherently resistant to change or improvements. Rather, that all personnel have an unrecognised potential creatively to contribute ideas and efforts to make improvements, and a willingness and motivation to do so. Personnel resistance may be due to wasting time on meetings and effort which does not produce visible improvements for patients or their working conditions. Their potential may be awakened by leaders showing visions and creating “attractors” to the future, but hindered by certain factors or barriers.

It is possible that organisations could speed improvement by taking more explicit and systematic actions to develop and support “ordinary leaders of improvement”, who should also be viewed as part of an organisation’s “leadership system for improvement”: leadership development should not be confined to formal leaders. A hypothesis for future research is that improvement results correspond to the number and unity of formal and informal improvement leaders in an organisation and the stage of development of its “leadership system for improvement”:

Leaders for improvement are any people who influence others to spend time on making the service better for patients

In summary, some evidence suggests that senior leaders need to build a “system of leadership for improvement” (SLI), which are all formal and informal leaders, teams and groups which support improvement as part of the everyday work of an organisation. Senior leaders need to identify and then stimulate a variety of leaders in an organisation to take a common approach to leading the type of improvement necessary for that organisation at that time. Senior leaders relying only on their own efforts and a directional top-down approach are unlikely to sustain successful continuous improvement, even with formal incentives. A “system of leadership for improvement” institutionalises improvement so that is does not depend on often transitory senior leaders. There are, however, challenges in getting and keeping agreement amongst leaders in this system about the common approach required, especially about priorities and methods for improvement, and to ensure all lead in a consistent way in a common direction.
Best evidence guidance for senior leaders

Although there are limitations to the research reviewed, there is a pattern of similar findings from a number of studies which gives the basis for a “best current evidence guidance” for leaders of improvement in health care. This is an advance over the general guidance in the theoretical and consultant literature, and also gives a basis for future research. The guidance checklist based on this evidence is available over the internet, which covers the seven areas of action (Øvretveit, 2004b) noted below. It provides a tool for development programmes which allows participants to assess their organisation and their role against what the research suggests that successful improvement leaders do. Action on all of these areas appears to be necessary as the actions support and reinforce each other:

1) **Preparation:** The evidence shows that leaders of whole organisations or sub-departments need to design a strategy for improvement suited to aspects of their organisation and its operating environment. Therefore the first step in leading improvement is to understand the organisation’s stage of quality development, any internal experience with quality methods and assess “readiness for change”. Leaders also need to prepare by gaining knowledge of the principles and methods of Q&SI and the current pressures which help and hinder improvement.

2) **Vision and strategy:** the evidence shows that leaders need to create an inspiring vision of what the improved organisation should look like and provide to patients and personnel in five years, through a participatory vision-creating process. They also need to create an agreed and achievable strategy for achieving this vision, which defines the quality and safety priority-targets which are strategically important to the organisation, and projects, structures and systems and a strategy plan with dates for reviews. Part of the strategy also needs to develop a “system of leadership for improvement”. This means purposefully identifying and developing all formal and informal leader roles to be able to promote and support improvement as part of the everyday work of an organisation.

3) **Structural and line management process changes:** the evidence also shows that the responsibilities of all personnel for quality and safety need to be specified in job descriptions. New roles and groups need be created which gather quality performance data, review quality performance and improvement progress, and carry through changes and projects. Line management processes need to be changed to include regular reporting of quality and safety performance alongside financial and other performance measures, and follow-up accountability for changes to improve performance.

4) **Systems changes:** considerable evidence shows that the lack of routine valid, reliable and timely data about quality and safety performance is a major hindrance to improvement, as is the lack of data support for specific improvement projects. Leaders need to develop data collection and reporting systems to report quality in the same way that they developed systems to report financial and production performance. A second system change required is to reward and incentive systems, to ensure quality performance and improvement is recognised and rewarded along side the conventional subjects for rewards systems. Other types of specific system changes to organisation, such as new
operating procedures and protocols, will also be needed to carry out improvements suggested by project teams analysing quality problems.

(5) **Human resources, people and team development:** the structure and system changes need to be accompanied by training in quality methods and project management, changes to induction training, as well as bringing-in quality skills and expertise either through new recruitment or consultancy with competence-development. A human resource programme for quality and safety will need to be developed which contributes to the culture change which is needed for true patient focused care, safety reporting and risk prevention.

(6) **Communication, commitment and motivation:** evidence suggests that these changes will not succeed without attention to “the human side of quality”, which includes efforts by leaders repeatedly to communicate the importance of quality, especially through their actions and the time they give to quality and safety issues. Leaders need to understand what motivates personnel to spend time and attention on quality issues, and what prevents them from doing so, and design strategies to remove the barriers and motivate personnel. Ways are needed to recognise and privately and publically reward individual and team quality achievements, for example through a “quality day” for teams to present successful achievements and less successful projects with lessons for others.

(7) **Other actions:** the evidence also suggests others actions by leaders which are important. The guidance checklist presents these as follows:

- I use my senior position to identify and overcome boundary problems for patients, by working with patients and others to identify and solve problems in patient or information transfer within the organisation, between professions and between departments, and between the organisation and other services and units. Yes/no or 1 for “sometimes”, 5 for “always”.
- We pay particular attention to gaining senior physician leader’s support, to the barriers and assistance for physicians involvement in projects and their use of quality indicators, and to knowing and supporting physician enthusiasts for Q&SI. Yes/no or 1 for “sometimes”, 5 for “always”.
- I am working to improve relations with physicians, through regular contact, discussion about clinical outcomes not just financial issues, and serious examination of their concerns, working with them to find common ground and reach agreements about Q&SI. Yes/no or 1 for “sometimes”, 5 for “always”.
- I regularly talk about patient cases, not to criticise, but to show where there is room for improvement and examples of improvements. Yes/no or 1 for “never”, 5 for “certainly”.
- I tell stories about incidents/errors that I have been involved with and the systems improvements that could have prevented them. Yes/no or 1 for “never”, 5 for “certainly”.
- I visit different units to ask patients their experience, to talk to staff about improvement, and ask questions about near misses and safety issues. Yes/no or 1 for “never”, 5 for “once a week”.

Leading improvement
I regularly review the balance of time on quality activities and other work, and will do so until the distinction no longer makes sense. Yes/no or 1 for “never”, 5 for “once a month”.

I listen and ask more questions than give instructions, such as why do we do it this way, do others do it better, is it possible there is a better way, how do we know? Yes/no or 1 for “never”, 5 for “certainly”.

Summary guidance for leaders of improvement:

1. **Assess the situation:** what a leader needs to do depends on the type of organisation they are leading, the priority quality and safety problems, the external pressures and incentives, and the internal experience and expertise which exists in the organisation about quality and safety improvement.

2. **Assess your influence:** consider what influence you might be able to have to initiate and sustain improvement, the obstacles, the influence of other clinicians and how you might involve them in leading the needed improvement. You have both more and less influence than you think.

3. **Translate, don’t transfer:** use evidence and experience about what works elsewhere, especially best practice reports, but carefully assess with others whether the method or change would work in your organisation. Adapt it without losing the “active ingredient” which makes it work.

4. **Balance attention between the seven areas:** take action on all seven areas noted above, which research has shown to be necessary for improvement: Preparation, Vision and strategy, Structural and line management process changes, Systems changes, Human resources, people and team development, Communication, commitment and motivation, and Other actions.

**Conclusion**

Empirical research supports the proposition that leadership by senior leaders is important for successful improvement, but also shows limits to their influence. The evidence consistently shows that actions to engage senior doctors in improvement strategies are the most important for senior management to take. Both formal senior doctors and informal opinion leaders can influence other doctors and personnel to support or oppose improvement. There is also evidence of other forms of leadership which are needed for improvement, and that senior leaders need to create a “system of leadership” for improvement where all leaders take a common approach.

“Best evidence guidance” for senior leaders of organisations or departments can be summarised as: prepare yourself by understanding the methods and your organisation’s situation; create a vision and a flexible strategy with resources, give personal involvement and modelling of values, hold consistently to the objectives and values, define and delegate quality and safety responsibilities and hold accountable for performance, build systems, especially for quality and safety data, develop and motivate personnel to improve quality, and engage physicians. Although this guidance and the checklist based on the evidence is more useful for leaders than existing guidance, there are limitations. It is possible that leaders at different levels may need to take different actions to carry out different types of improvement, and that the actions likely to be successful depend on the type of organisation, culture and its context (Øvretveit, 2004c).
As regards future research, it has been suggested that the ability of managers and other leaders skilfully to tailor Q&SI to the situation is important (Øvretveit, 2004c) but descriptions of how leaders do this, and evidence supporting this proposition are lacking. No research has systematically examined the degree of importance of leadership, whether the importance of leadership varies according to the type of organisation, or the type of improvement or the approach used for improvement, such as CQI or safety engineering approaches. No research has systematically examined the significance of new conceptions of leadership for improvement such as “ordinary leadership for improvement”, leadership by teams and groups or the importance of a “system for leadership improvement”.

Future research needs to study whether or how the leader role is different according to the stage of quality and safety development of the organisation, the type of organisation, the type of context, the level and type of leader and the type of improvement and improvement method. There is some evidence suggesting that leader actions need to be different in relation to these variables, and these could be used as hypotheses for testing in future research. A recurring question which also needs more empirical investigation is whether manager’s ability to lead Q&SI is more limited in healthcare, or in specific types of healthcare organisation such as teaching hospitals, regardless of their competence and knowledge of Q&SI. Leader development programmes would also benefit from including more of the empirical research from health care about specific leader actions rather than the general inspirational leadership literature which is often used in these programmes.

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