

Enabling the implementation of evidence based practice: a conceptual framework

Alison Kitson, Gill Harvey, Brendan McCormack

Abstract

The argument put forward in this paper is that successful implementation of research into practice is a function of the interplay of three core elements—the level and nature of the evidence, the context or environment into which the research is to be placed, and the method or way in which the process is facilitated. It also proposes that because current research is inconclusive as to which of these elements is most important in successful implementation they all should have equal standing. This is contrary to the often implicit assumptions currently being generated within the clinical effectiveness agenda where the level and rigour of the evidence seems to be the most important factor for consideration. The paper offers a conceptual framework that considers this imbalance, showing how it might work in clarifying some of the theoretical positions and as a checklist for staff to assess what they need to do to successfully implement research into practice.

(Quality in Health Care 1998;7:149–158)

Keywords: implementing research into practice; clinical effectiveness; evidence-based practice; facilitation; change management

Introduction

Despite growing acknowledgement within the research community that the implementation of research into practice is a complex and messy task, conceptual models describing the

process still tend to be unidimensional, suggesting some linearity and logic. For example, Lomas¹ cites the model developed in the *Milbank Quarterly*² as an acceptable representation or mapping of issues, contexts, and processes suggesting that the complexities in implementation occur when evidence meets everyday practice (fig 1), while Haines and Jones³ suggest a more straightforward connection between continuing education, audit, and research findings (fig 2). Indeed, the most recent guidance from the Department of Health in England⁴ on clinical effectiveness, suggests a framework based on informing, monitoring, and changing practice. Although such frameworks have superficial appeal, if applied literally, they often fail to help those involved in change processes to capture their complexity, thereby reducing the potential for successful implementation.^{5–8}

Given the apparent lack of success of these approaches, it is important to continue to look for other ways of representing the complexity of the process of change and implementation of research findings. To this end, a research and development team in the Royal College of Nursing (RCN) Institute has been working on the development of a conceptual framework which represents the interplay and interdependence of many factors influencing the effective uptake of research evidence into practice. Representation of the elements in the framework may be used to help clinicians to think about their implementation strategies. The framework might also be used to generate

Royal College of Nursing Institute, Royal College of Nursing, London, UK
 Alison Kitson, professor and director
Royal College of Nursing Institute, Radcliffe Infirmary, Woodstock Road, Oxford, UK
 Gill Harvey, head of quality improvement RCNI
 Brendan McCormack, head of practice development, co-director gerontological nursing

Correspondence to: Professor Alison Kitson, Royal College of Nursing Institute, Royal College of Nursing, 20 Cavendish Square, London W1M 0AB, UK.

Accepted for publication 19 May 1998

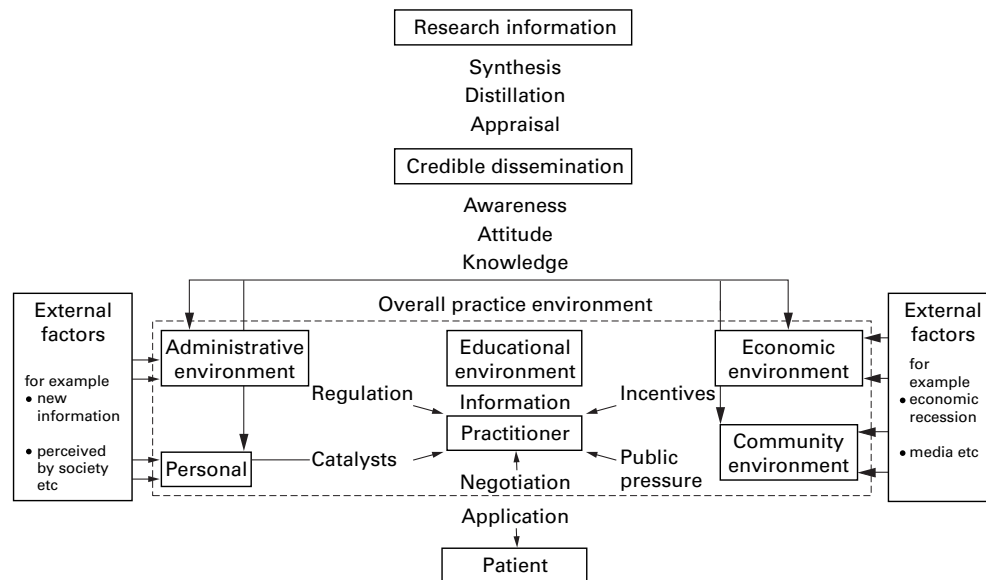


Figure 1 Linear implementation models.

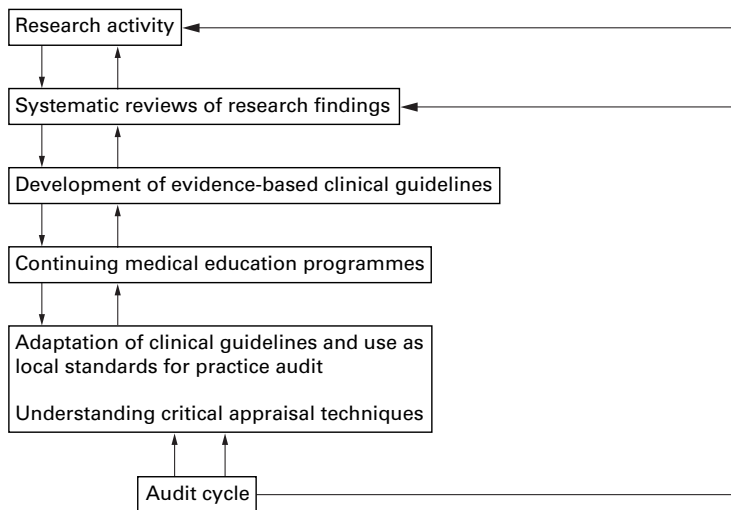


Figure 2 Interactions between continuing education, audit, and research findings.

hypotheses to be tested in more systematic ways. The conceptual framework has emerged from several years of experience within the team, working with clinicians (mostly nurses) in helping them to improve the quality of their care by setting clinical standards,^{9 10} introducing audit and quality improvement,^{11 12} and in changing patient services in several community hospitals in one health authority.^{13 14}

The framework is presented to stimulate further debate from which we hope that colleagues, particularly from other disciplines, will consider its face and construct validity. Implicit in the debate is the belief that the implementation of good quality research is likely to have improved outcomes for patients and is therefore important for quality patient care. That the health professions collectively are still searching for better ways of understanding how we can achieve this, is another reason for putting forward this conceptual framework.

The paper begins by clarifying our definitions of evidence, context, and facilitation. It identifies the dimensions within which each of these concepts operates in isolation and then explores what happens when they are considered together. The interrelations between evidence, context, and facilitation are illustrated with four case studies as examples of the theoretical positions possible within the framework.

A multidimensional framework for implementing research into practice

The framework emerged from the following equation:

$$SI = f(E, C, F)$$

where SI=successful implementation, E=evidence, C=context, F=facilitation, and f=function of.

From our experience of operating as change agents and researchers, we are suggesting that successful implementation is a function of the relation between the nature of the evidence, the context in which the proposed change is to be implemented, and the mechanisms by which the change is facilitated.

Although these dimensions are familiar to everyone working in this field, we are suggesting that instead of a hierarchy or linearity of cause and effect each of these dimensions has to be considered simultaneously. Therefore, in preparing to introduce research evidence that proves the effectiveness of a clinical intervention into a particular setting, the same detailed attention as was given to testing the evidence has to be paid to understanding how to prepare the context and to selecting the most appropriate facilitation method.

Evidence defined

To clarify what we mean by evidence, context, and facilitation we further refined them in the following way. With the accepted definition of evidence as the combination of research, clinical expertise, and patient choice,¹⁵ we looked at the extreme positions from which evidence is derived from research, clinical experience, and patient preferences. For each of these elements, a range of conditions may prevail, as shown in figure 3 A—that is, from high evidence to support effectiveness to low evidence to support effectiveness. For example, research evidence may be presented as unsystematic, anecdotal, and descriptive (low evidence), or as a rigorous systematic (quantitative or qualitative) evaluation (high evidence). Similarly, professional consensus may be widely divided (low evidence) or high levels of consensus may exist (high evidence), and patients' opinions may range from being completely overlooked (low evidence) to a process of systematic feedback and input into decision making (high evidence).

For successful implementation of research that supports the effectiveness of a clinical intervention, evidence needs to be located towards the right hand side of the continua on each of these dimensions (fig 3 A). To what extent this occurs on all three dimensions within the current evidence-based healthcare agenda is perhaps debatable.¹⁶⁻¹⁸ For example, randomised controlled trials are currently identified as providing the best level (level 1) of evidence. However, if an intervention that is found to be highly effective is rejected by clinicians and patients, then despite its gold standard status, it is unlikely to be widely taken up. Conversely, if clinical experience and patient preferences come out in favour of a particular intervention, even though the research evidence is low, then there may be more likelihood of it being adopted or continued—for example, wiping skin with sterile swabs before injections or use of complementary treatments to reduce anxiety. This means that in assessing the nature and strength of the evidence and its potential for implementation, a combination of the three dimensions—research, clinical experience, and patient preferences, needs to be considered.

Context defined

The context is the environment or setting in which the proposed change is to be implemented. The term is derived from the literature on learning organisations¹⁹⁻²² organisational

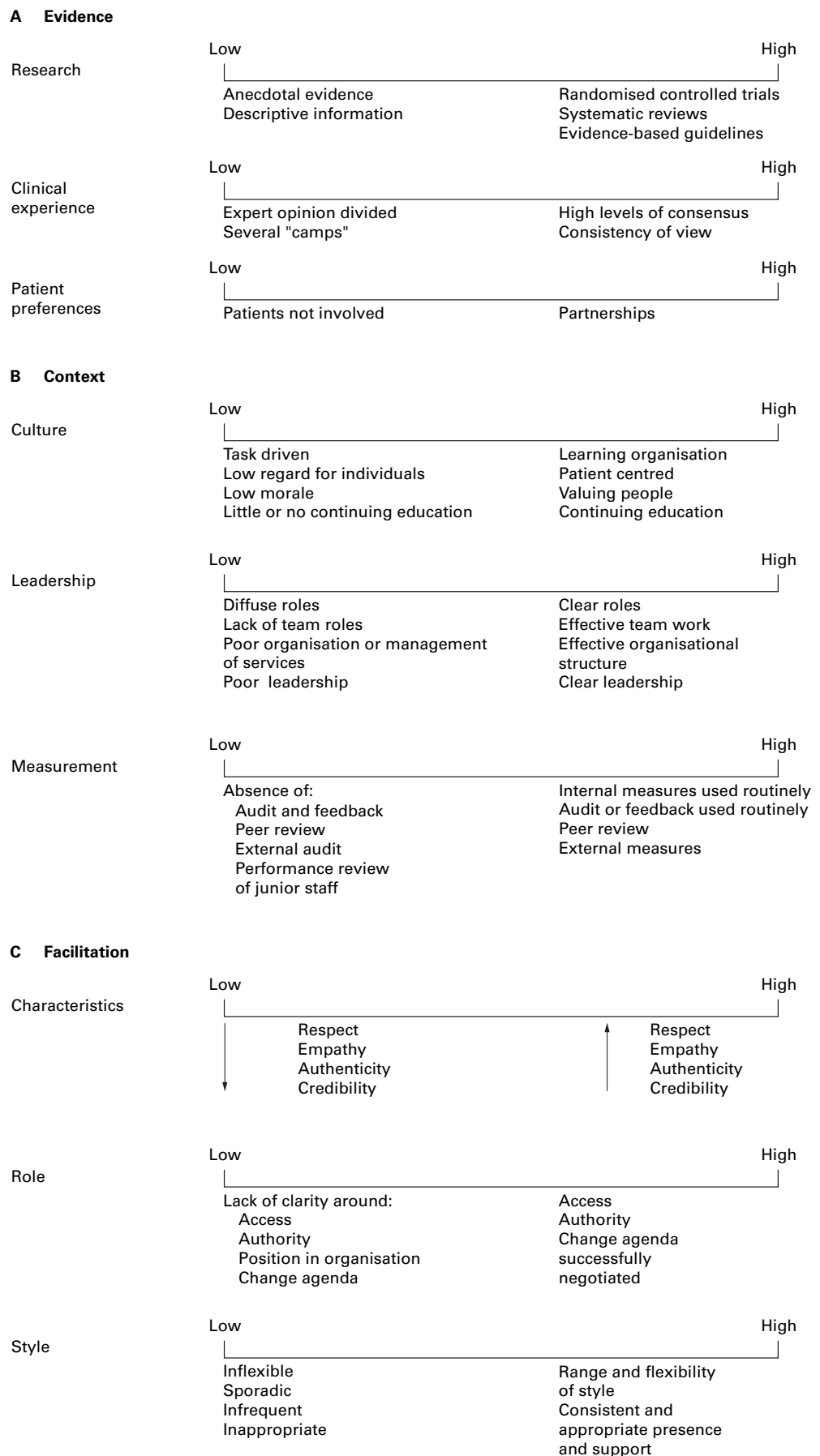


Figure 3 Conditions for evidence, context, and facilitation.

excellence,^{23 24} continuous quality improvement,^{25 26} and change management.^{27 28}

Context implies an understanding of the forces at work which give the physical environment a character and a feel. Context has been subdivided into three core elements: an understanding of the prevailing culture, the nature of human relationships as summarised through leadership roles, and the organisation's approach to routine monitoring of systems and services—that is, measurement.

Figure 3 B represents the polar positions within each of these dimensions—that is, those contexts which support the use of evidence-showing effective clinical interventions (high context) moving to those contexts which do not support the use of evidence (low context). People being asked to accept new evidence may find themselves working in an environment that is driven by tasks with little regard for them as workers: roles are unclear, leadership poor, and there are few if any established systems of monitoring performance. The chances of successful implementation may be much less in such conditions than in those contexts in which the opposite conditions prevail.

Facilitation defined

Facilitation is a technique by which one person makes things easier for others.²⁹ The term describes the type of support required to help people change their attitudes, habits, skills, ways of thinking, and working. One of several change management strategies,⁶ it has received particular attention within nursing quality improvement and clinical practice development initiatives,^{30 31} and also in primary care audit.^{32 33}

It is important to distinguish between the role of local opinion leaders and facilitators. Local opinion leadership has been defined³⁴ as “the degree to which an individual is able to influence other individuals' attitudes or overt behaviour informally in a desired way with relative frequency”. Although there is overlap between the role of local opinion leaders and facilitators, facilitators are seen as people who make things easier, help others towards achieving particular goals, encourage others, and promote action.¹²

The role of the facilitator

In the situation of implementing research into practice the facilitator's job is to help people understand what they have to change and how they change it to achieve the desired outcome. Local opinion leaders may operate as facilitators, just as facilitators may also be opinion leaders. The difference between the two roles seems to be that facilitators consciously use a series of interpersonal and group skills to achieve change, whereas opinion leaders may influence more because of their status and technical competence. Much conceptual confusion exists between these two roles, which we acknowledge and indeed have experienced. However, we are arguing that facilitation and the role of the facilitator is more far-reaching, with opinion leaders, social networking, etc having a place.

The following dimensions have been identified within the facilitation role.^{29 35} Personal characteristics of openness, supportiveness, approachability, reliability, self confidence, and the ability to think laterally and non-judgementally are central to successful facilitation. Also, clarity around the facilitator's role, status, and intended purpose are vital as are the skills, knowledge, and style of the facilitator (fig 3 C). Additionally, the position and the role of the facilitator in terms of belonging to (local or internal) or being external to (outsider) the organisation needs to be considered.²⁹ Thus facilitators bring with them a personal repertoire of skills, as well as an ability to work within and across role and structural boundaries in the organisation.

Implementation may not be successful within a context that is receptive to change, because there is non-existent or ineffective facilitation. For example; the personal characteristics of the facilitator or opinion leader are inappropriate, their role misunderstood, and their style insensitive to the various groups and subgroups needing support to help them accept change. Although opinion leaders may be successful within their own tribe, there is little evidence to suggest that successful nurse opinion leaders change medical practice, or vice versa. Facilitation by contrast, seeks to get across professional and organisational boundaries by concentrating on development of interpersonal and group skills.

Relation between evidence, context, and facilitation (where evidence is high)

Our hypothesis, therefore, is that for the implementation of research into practice to be successful, there needs to be a clear understanding of the nature of evidence being used, the quality of context in terms of its ability to cope with change and type of facilitation needed to ensure a successful change process.

In conceptual terms the equation $SI = f(E, C, F)$ is more adequately represented as a three dimensional matrix (fig 4) in which evidence (E), context (C), and facilitation (F) can either be expected to influence the outcome (successful implementation: SI) in a positive way (high: H) or negatively (low: L). By engaging staff and those involved in implementing change in discussing their position on these dimensions it may be possible to devise tailored action plans that will lead to more successful implementation. Thus the strategy for change would be different in an organisation that has poor leadership and measurement practices than in one which embraced a lifelong learning philosophy for all its staff.

Testing the framework

Theoretically, there are at least four positions where the extent to which implementation had been successful could be tested, taking high evidence as the constant. (It is important to acknowledge that both theoretically and in practice this framework recognises the fact that low evidence may also be implemented successfully if other conditions are favourable.

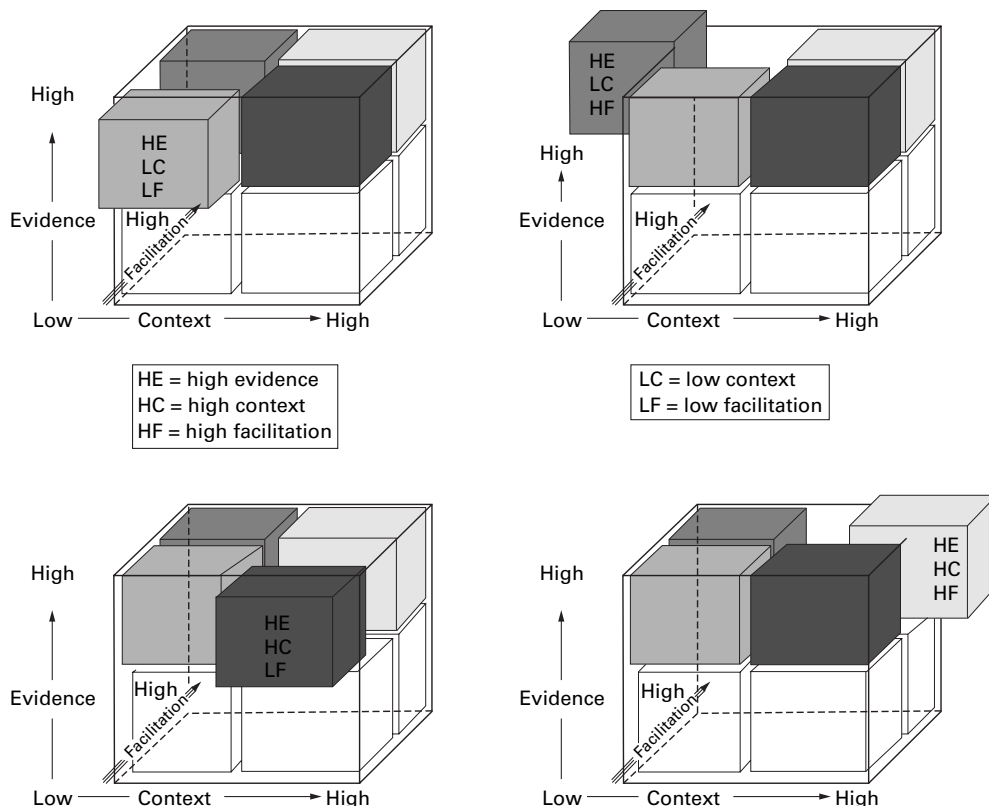


Figure 4 A three dimensional matrix in which evidence, context, and facilitation can either be expected to influence the outcome in a positive or negative way.

This is not infrequently observed and requires careful exploration in its own right. However, detailed consideration is outside the scope of this paper.)

To test the framework, four studies were analysed which had looked at the implementation of research into practice. Studies were selected which had used research evidence that proved the effectiveness of certain interventions and which had taken clinical experience and patients' preferences into account in the overall assessment of the strength of the evidence. Contexts and approaches to facilitation differed in each study. The studies are presented as examples—or test cases—to describe the different theoretical and practical positions in the framework.

Position 1: high evidence, low context, low facilitation (HE,LC,LF)

CASE STUDY: IMPLEMENTATION OF A CARDIAC REHABILITATION PROGRAMME (BOX 1)

This study, undertaken by Stokes *et al*,³⁶ evaluated the effectiveness of facilitation as a method to improve the uptake of national multiprofessional guidelines for cardiac rehabilitation. Guidelines were a mix of research based evidence, with a high level of professional consensus. The process also involved patients' views in determining key elements of the clinical guidelines.

After a national survey of cardiac rehabilitation programmes,³⁷ sites were divided into high and low providers, according to a telephone survey based on staffing, resources, and programme content. Three centres described

as low providers and three high provider centres were invited to join the study. After this, high and low providers were each randomly allocated into one of two intervention groups and a control group. The interventions were facilitation plus guidelines and guidelines sent by post. The control groups had no guidelines sent to them and had no contact with the facilitator. The primary intervention—facilitation plus guidelines—consisted of five 1 hour visits in each intervention site over a 12 week period. The facilitator was newly trained, and used her expert knowledge of cardiac rehabilitation to ensure access to the groups, but was aware of the limited contact she would have with the intervention groups.

The low provision centre consisted of one person attempting to provide a cardiac rehabilitation service in two hours a week. The high provision centre consisted of five full time team members who had recently merged together from three trusts. Neither centre in this group was resistant to the guidelines, although this attitude was evident in other groups. However, in the circumstances, staff in both centres considered themselves powerless to initiate change.

There was little to distinguish the high from the low providers in terms of the prevailing culture and style of leadership and only limited evidence of multidisciplinary working. In both groups there was little involvement in clinical audit, little attention to the measurement of risk, and inconsistent use of quality indicators.

The results of the study showed that none of the interventions improved the quality of care

<i>The implementation of multidisciplinary guidelines for cardiac rehabilitation</i>	
<i>Case study 1</i>	
Aim	To evaluate the effectiveness of facilitation as a method to improve the uptake of national multiprofessional guidelines for cardiac rehabilitation
Design	Before to after test Quasi-experimental Randomisation of wards to intervention—two facilitation and guidelines; two guidelines only and two controls
<i>Evidence:</i> Research	Guidelines developed using existing research evidence and research based guidelines where available
Expert opinion	Areas where research was inconclusive, non-existent, used formal consensus approach to agree best practice
Patient preferences:	Patient representation in guidelines formulation Use of research eliciting patients' views after myocardial infarction
<i>Context:</i>	(In experimental wards: facilitation and guidelines)
Culture	Varied across sites All generally understood need for cardiac rehabilitation, felt powerless to make it happen Task oriented
Leadership	Little evidence of multidisciplinary working Differing levels of commitment and approaches to practice
Measurement	Little involvement in clinical audit Little attention to measurement of risk Inconsistent use of quality indicators
<i>Facilitation:</i> Characteristics	Inexperienced facilitator Clinical expert in area of cardiac rehabilitation
Role	Informal and collaborative Total of five visits lasting one hour a visit over 12 week period
Style	Individual and group meetings to discuss guidelines
<i>Effectiveness</i>	Low No significant differences between intervention and control groups

Box 1 Position 1: high evidence, low context, and low facilitation.³⁶

given to patients. Despite acceptable evidence and even with some facilitation, albeit limited, both in style and amount, neither the high nor low providers changed practice as a result of receiving acceptable evidence in the form of guidelines.

Position 2: high evidence, low context, high facilitation (HE,LC,HF)

CASE STUDY: AN EVALUATION OF THE QUALITY OF CARE IN A REHABILITATION RESPITE CARE WARD FOR OLDER PEOPLE (BOX 2)

The project selected to illustrate this position within the framework was part of a larger study³⁸ which evaluated the quality of patient care and explored ways of introducing a programme of case management (interestingly an intervention itself that has little research evidence to support it!). One particular intervention—the routine use of rectal examinations of all older people on the ward as a way of monitoring constipation—was used as a test case to evaluate the role of the facilitator in introducing new practices for the management

<i>An evaluation of the quality of patient care in a rehabilitation/respite care ward for older people and the introduction of a programme of case management</i>	
<i>Case study 2</i>	
Aim	To improve the quality of nursing care being delivered to older people.
Design	Before to after test Case study Unit of measurement: standardised nursing audit tool measuring quality of nursing care (For management of constipation)
<i>Evidence:</i> Research	Current practice (routine per rectum examination) not supported by any evidence
Expert opinion:	Practice contra-indicated by experts
Patient preferences:	Clear views against practice being carried out
<i>Context:</i>	
Culture	Task centred; ritualistic practice Lack of respect for personhood Lack of learning culture
Leadership	Roles differentiated around tasks Unqualified nurses dictating care patterns
Measurement	Non-existent No quality indicators No peer review or supervision of practice
<i>Facilitation:</i> Characteristics	Experienced facilitator Clinical expert in care of older people
Role	Ranged from directive to collaborative High educational input External facilitation × 1 day a month × 12 months Internal facilitation × daily × 12 months
Style	Group supervision, individual staff supervision, ward “away days”, role modelling, role set development group
<i>Effectiveness</i>	High Change in practice in management of constipation; significant improvements in quality patient care scores

Box 2 Position 2: high evidence, low context, and high facilitation.³⁸

of constipation into a context that was not conducive to taking on new approaches to care. Staff were made aware, early on in the project, of this as an inappropriate and unacceptable practice on both research and moral grounds. However, this practice was taking place in a context in which the culture was not patient centred, with ritualistic and task oriented practice. There was general lack of respect for patients and for staff who were expected to perform such tasks. Staff roles were differentiated around tasks and care assistants tended to dictate care patterns. Registered nursing staff had minimal involvement in direct care and medical input was infrequent. Unsurprisingly, there were no forms of routine measurement, either clinical audit, risk assessment, or supervision of staff.

The facilitation style in this case was initially highly directive, with a high educational input. The facilitator (who was also the researcher) worked with staff one day a month for 12 months. During this time he identified a member of staff (the ward sister), whom he trained to be the local or internal facilitator. She reinforced the messages on a daily basis. The range

of methods used during this period were individual and group supervision of practice, ward away days, role modelling and role set development groups.

During this period the facilitator's role changed from external facilitator being directive, to working collaboratively with an internal or local facilitator who was trained to develop skills around successful change management. Results of the evaluation using a pre-post test measuring the quality of patient care, showed significant improvements by the end of the project.

In terms of the model, this study indicates that the nature, focus, and duration of facilitation can overcome and indeed alter poor contextual conditions to successfully implement research findings.

Position 3: high evidence, high context, low facilitation (HE, HC, LF)

CASE STUDY: THE DEVELOPMENT AND IMPLEMENTATION OF A SET OF STANDARDS ON POSTOPERATIVE PAIN MANAGEMENT THROUGH LOCAL FACILITATION OF WARD BASED TEAMS (BOX 3)

Given the cultural, leadership, and measurement restraints that come with poor contexts, it may be expected that when these conditions are positive, there is little need for facilitation. We did, however, find in a large study looking at the impact on patient outcomes of local standard setting for postoperative pain management,¹⁰ that even those wards where the context and conditions would be described as positive, the momentum required to sustain change in practice was lost with the withdrawal of the facilitator. Although there was some improvement in patient outcomes over the 14 month period of the intervention (local facilitators meeting every 2 weeks with a standard setting group looking at improving management of postoperative pain), this was not sustained. The data also showed links between group activity, facilitator input, and patients' self reported pain scores—when morale was low and staff were becoming disillusioned with the work, patients' pain scores in the ward increased, and conversely when one facilitator returned after a break and re-enthused the group, patients' pain scores reduced (for more information on this study, see Kitson *et al*¹⁰).

We deduced from this study that even in the areas where conditions were favourable, it was unlikely that such systems and structures existed where staff had to cope with introducing change unsupported. We also reckoned that the duration of time support was needed to establish and sustain change, was underestimated.

We found that the role of a local facilitator was successful in stimulating change and guiding it, but that for it to succeed, someone belonging to the ward, or in the team, had to take it over. In the previous case study,² the original facilitator (BMcC) transferred his work to the ward sister, who was both facilitator and leader. This again is an interesting finding, as it may also help it illuminate the

<i>Evaluation of use of local postoperative pain standards on patients' pain scores</i>	
Case study 3	
Aim	To improve postoperative pain management by using local facilitators to help nursing teams develop and use local postoperative pain management standard
Design	Multicentre; quasi-experimental design Ten surgical wards, matched and randomly allocated into standard setting and facilitation (experimental) and non-standard setting (control) groups Unit of measurement: patients' assessment of pain on third postoperative day
Evidence:	
Research	National group set up to develop evidence based guideline (standard); where good evidence existed this was incorporated into guidelines
Expert opinion	When research was inconclusive or non-existent, formal consensus approach was used to agree best practice
Patient preferences	Not directly involved, other than using patient reports from research literature Locally derived standards were checked against national guideline for consistency
Context:	
Culture	Varied across 10 sites; ranged from task centred routinised culture to patient centred culture All wards perceived to be busy with little time for teaching and learning
Leadership	Evidence of strong clinical leadership in some wards
Measurement	Not evident in most wards before interventions After intervention evident in three of five experimental wards
Facilitation:	
Characteristics	Ten local inexperienced facilitators (two per experimental wards), trained by research team. Some were pain experts/ward leaders; most were from other parts of the hospital
Role	Varied from directive to educational
Style	Varied from weekly meeting to "instructions" issued by facilitator
Effectiveness	Some evidence of improvements in pain scores in wards where contextual factors were more positive. Not sustained often because of lack of time and availability of facilitator to support changes

Box 3 Position 3: high evidence, high context, and low facilitation.¹⁰

relation between facilitators and local opinion leaders.

Position 4: high evidence, high context, high facilitation (HE, HC, HF)

CASE STUDY: THE USE OF NATIONAL STANDARDS TO IMPROVE NUTRITIONAL CARE FOR OLDER ADULTS (BOX 4)

The link between facilitation and leadership seems to be important and has gained some face validity in the results of the final project. This small scale pilot study³⁹ evaluated the effectiveness of three nursing home teams in adapting and implementing a set of national standards on nutrition and the older adult. The standards were evidence-based and the contexts in which

Case study 4	
<i>The use of national standards to improve nutritional care for older adults</i>	
Aim	To identify key factors that enable, hinder the implementation of standards; to identify the extent to which care processes changed with the implementation
Design	Before-after case study in three nursing homes in England Intervention: national standards, plus two day workshop run by external facilitator working with head of homes Audit criteria from national standard, plus regular interviews with staff and home leaders constituted before-after test measures
Evidence: Research	Focus of standards was how to feed not what to feed Search carried out for existing evidence based guidelines/standards
Clinical experience:	Use of formal consensus approach
Patient preferences	Multidisciplinary group Patients included in consensus group
Context: Culture	One of the three homes was very open to change
Leadership	Some homes had dynamic head of home, focused on patients and staff
Measurement	Patient centred philosophy Not developed in any of the three homes
Facilitation: Characteristics	Experienced external facilitator working with heads of home ran two day workshop on quality and implementing standards
Role Style	Regular support to home leaders Leader in home 1 responded most positively to facilitation, became the facilitator for introducing the change Other two leaders still depended on external facilitator, changes not as obvious
Effectiveness	High in one of the three homes; experienced facilitation, good leadership, positive context, and acceptable evidence

Box 4 Position 4: high evidence, high context, and high facilitation.³⁹ (Source: Loftus-Hills and Duff.³⁹)

they were being implemented were conducive to change. Internal facilitators were identified and trained by the project team who then monitored the implementation process.

Although all three sites were successful in introducing aspects of the standards and changing care, the most successful team was led by the home leader who was very committed to the project and functioned effectively in a combined role of internal facilitator and clinical leader (with ongoing support of the external facilitator for nursing homes). There had been no routine measurement at the start of the project although this was introduced as a result of implementing the national standards.

The results of the study showed significant improvements in relation to nutritional risk assessment, improved quality and choice of food, and reduced disruption during residents' meal times. The preaudit results showed that the home had met eight of the 26 key criteria

identified within the national standard and after the audit 24 of the 26 criteria were met.

It would seem, therefore, that when effective facilitation is continued with conducive conditions for change and good evidence, the likelihood of successful improvement is much greater.

Discussion

SPECIFIC POINTS RAISED BY THE CASE STUDIES

Most successful implementation would seem to occur when evidence is high, the context is receptive to change with sympathetic cultures and appropriate monitoring and feedback mechanisms, and when there is appropriate facilitation of the change, using in a complementary way the skills of both external and internal facilitators. Poor contexts may indeed be overcome by appropriate facilitation. When strong evidence was presented to staff in the continuing care ward (case study 2) coupled with strong, appropriate facilitation, negative aspects of the context began to be modified to ensure that the new practices were implemented. This, however, took time (about 12 months) to ensure that sufficient infrastructure and staff development issues were considered.

Least successful implementation of research evidence seems to be experienced in situations where both the contextual conditions and facilitation are low or inadequate (case study 1). In the study of Stokes *et al.*,³⁶ situations arose where there was limited facilitation both to low and higher level cardiac rehabilitation service providers. The evidence (evidence-based, consensus supported guidelines) was rejected equally by low and higher level providers. The limited support of a facilitator did not improve the uptake of the guidelines. How to assess the type and amount of facilitation required to successfully implement evidence is a key question. Indeed, we also noted that the chances for successful implementation were still weak even in a context conducive to change but with insufficient or inappropriate facilitation (case study 3)—for example, changes to pain scores when the local facilitator stopped working with standard setting teams.¹⁰

Facilitation may be one of the key variables in the equation under consideration. Previous conceptual frameworks have not given facilitation processes due attention. Little change happens in organisations without key drivers, be they defined as local opinion leaders or facilitators. Facilitators as defined in this paper, are typically external experts in the management of change who work with teams to help them introduce new research based practices. They often uncover unacceptable or poor practice not recognised by local staff and require tact, sensitivity, and also the authority to be able to tackle such situations. They also work collaboratively with a local champion, opinion leader, or change agent who can continue the transformation and allow them to disengage at an appropriate time and in an appropriate way.

Theoretically, the ideal position in the framework would have to be where evidence, context, and facilitation were all high (the top

right hand quadrant of the framework (fig 4)). The framework may be helpful to practitioners and managers as a way of helping them to locate their practice and their organisation at a point in time. This would enable them to consider what help and support they would need to successfully implement more effective clinical interventions. What this could also begin to elucidate is what practitioners and organisations need to sustain their migration towards the ideal position and how they maintain it once they have arrived.

BROADER ISSUES

What additional perspectives does this framework offer to any of the other representations? Firstly, it tries to show the relation between evidence and the contextual factors potentially working for or against successful implementation. It tries to do this in a way that is accessible to staff involved in the potential change and to include them in the planning process. It offers a checklist of the key issues to consider under the three primary dimensions in a way that can help individual people map their position. It also works on the assumption that level of evidence, contextual factors, and facilitation are equally important to successful implementation of research into practice.

However, what the framework does not do explicitly is take into account the wider organisational, managerial, and political influences working upon the local situation. Neither does it consider issues of incentives or sanctions for changing practice. Implicitly these issues are considered by the external facilitator in their role as guide and support to the staff undergoing change.

CONSTRUCT VALIDITY

The framework is also based on assumptions that need to be made explicit and further refined and tested before the approach could be considered as contributing anything additional to the thinking in this area. The first assumption is that evidence, context, and facilitation are discrete and core elements to successful implementation of research into practice. Secondly, that the working definitions offered in this paper describing the subelements of evidence, context, and facilitation are themselves conceptually discrete and coherent. Thirdly, that each subelement described in relation to a high-low continuum can be represented in that way and that they carry equal importance. For example, is it justifiable to say that incorporating patients' preferences into a judgement on the strength of evidence is as important to successful implementation of research as ensuring that measurement procedures were in place to provide adequate audit and feedback to staff?

The current implicit situation would seem to be that there is some hierarchy or priority around the primary importance of research evidence with everything else being of lesser importance. For example, the investment in developing structures to ensure gold standard research evidence has yet to be matched by equal investment in ways of elucidating how

organisations change cultures or use different techniques to manage the change process. By assuming that these elements are of equal importance, the framework begins to raise a set of questions or hypotheses that will need to be tested.

Another assumption is that successful implementation is dependent on movement from the bottom left hand corner of the model to the top right hand quadrant and that teams are able to plot their actual position against their preferred position and agree a plan of action. This needs to be explored more thoroughly, particularly the transferability of the concepts—such as facilitation—to groups which have traditionally not used them as devices for changing practice.

LIMITATIONS AND STRENGTHS

A potential weakness in the whole conceptualisation is the assumption that these dimensions are both causally and linearly related to one another. The reality is that we do not know which of the core dimensions or subelements is strongest in creating the right conditions for successful implementation. We have suggested earlier that facilitation seemed to be one core element that tended to make a difference in many situations. However, we do not know if that is a common finding that is generalisable given insufficient studies of sufficient rigour. However, there is a position being generated within the current evidence-based movement which assumes that research into effective professional and organisational practice will be able to identify those interventions, be they continuing professional development, audit and feedback guidelines, or facilitation, which are the key to promoting evidence-based practice. Again the assumption underlying this approach is that these elements can be isolated out of the myriad of other factors that equally could be influencing practice, and that causal relations can be identified.

It may be more appropriate to map out the range of possible determinants and then to set up several conditions when one can test the interplay of elements. Until that is done, one has to assume equal weighting for variables until proved otherwise. However, this primarily deductive approach to testing these hypotheses may not be the most appropriate theoretical or methodological position to take and ultimately a more inductive position may need to be taken where basically participants have to choose their own path to successful implementation based on detailed analyses of their contextual and facilitative situation.

The framework can be used both to explore some of the more complex theoretical positions around implementing research into practice and as a self assessment tool for staff to judge what they have to do to successfully implement research findings. Like a prototype periodic table it can be used to map out those elements we have overlooked and as a way of exploring the relations between the variables identified.

NEXT STEPS

We seek comments both from researchers and practitioners about the framework's construct

and face validity. Early indications show that it has some face validity and our own analyses support a measure of construct validity. However, we are tentative about the longer term use of the framework and seek to engage in a much wider debate. Of particular interest, and something which was not discussed in this paper at all, is to explore the mechanisms by which new interventions which have very limited or no research evidence, are successfully implemented into practice.

Conclusion

This paper has presented a framework to show how research findings can be successfully implemented into practice. It has argued that equal recognition should be given to the level of evidence, the context into which the evidence is being implemented, and the method of facilitating the change. By explicitly acknowledging equal importance, the framework can begin to explore the actual relations between these three core elements. When implementations have failed the possible reasons for this can be analysed relative to the framework to help staff begin to plan more effective strategies in the future.

The framework has limited construct and face validity and has been set out to stimulate debate in this important but complex area.

- 1 Lomas J. Teaching old (and not so old) docs new tricks: effective ways to implement research findings. In: Dunn EV, Norton PG, Stewart M, et al, eds. *Disseminating research/changing practice*. London: Sage, 1994.
- 2 The co-ordinated implementation model. *Milbank Q* 1993; 71:445.
- 3 Haines A, Jones R. Implementing findings of research. *BMJ* 1994;308:1488-92.
- 4 *NHSE Promoting clinical effectiveness: a framework for action in and through the NHS*. Leeds: National Health Service Executive, 1996.
- 5 Walshe K, Ham C. *Acting on the evidence: progress in the NHS*. University of Birmingham: Health Services Management Centre, 1997.
- 6 Oxman A. *No magic bullets - a systematic review of 102 trials of interventions to help health care professional deliver services more effectively or efficiently*. London, UK: North East Thames Regional Health Authority, 1994.
- 7 Kitson AL, Ahmed LD, Harvey G, et al. From research to practice; one organisational model for promoting research based practice. *J Adv Nurs* 1996;23:430-40.
- 8 Dunning M, Abi-Aad G, Gilbert D, et al. *Turning evidence into everyday practice*. London: Kings Fund, 1998.
- 9 Royal College of Nursing. *Quality patient care: the dynamic standard setting system*. Harrow: Scutari, 1990.
- 10 Kitson AL, Harvey G, Hyndman S, et al. *The impact of a nursing quality assurance approach, the dynamic standard setting system (DySSSy), on nursing practice and patient outcomes. The ODySSSy project*. Oxford: National Institute for Nursing, 1994. (Report No 4, Vols I, II, III.)
- 11 Harvey G. *Which way to quality? A study of the implementation of four quality assurance tools*. Oxford: National Institute for Nursing, 1993. (Report No 5.)
- 12 Harvey G, Kitson AL. Achieving Improvement through quality: an evaluation of key factors in the implementation process. *J Adv Nurs* 1996;24:185-95.
- 13 McCormack B. *A report of the work of the Community Hospital Nursing Development Unit 1993-4*. Oxford: Oxfordshire Community NHS Trust, 1995. (Unpublished report.)
- 14 McCormack B. *Community hospitals project final report*. Oxford: Oxfordshire Community NHS Trust, 1995.
- 15 Sackett DL, Rosenberg WMC, Gray JAM, et al. Evidence based medicine. What it is and what it isn't. *BMJ* 1996;312:71-2.
- 16 Ellis J, Mulligan I, Rowe J, et al. Patient general medicine is evidence based. *Lancet* 1995;346:407-10.
- 17 Cullum N. The Identification and analysis of RCTs in nursing; a preliminary study. *Quality in Health Care* 1997;6; 2-6.
- 18 Kitson A.L. *Evidence based nursing—fact or fiction? Paper given at Evidence Based Nursing Conference, 1st February 1997*, London: Royal College of Nursing, 1997.
- 19 Senge PM. *The fifth discipline: the art and practice of the learning organisation*. New York: Doubleday/Currency, 1990.
- 20 Senge PM. The leader's new work: building learning organisations. *Sloan Management Review* 1990;(fall):7-23.
- 21 Bennis WG, Benne KD, Chin R. *The planning of change*, 3rd ed. Orlando, FL: Holt Rinehart and Winston, 1976.
- 22 Ancona D, Kochan T, Scully M, et al. *Managing for the future*. Ohio: Thomson, 1996.
- 23 Sveiby KE, Lloyd T. *Managing know-how*. London: Bloomsbury, 1987.
- 24 Peters T, Waterman RH. *In search of excellence*. New York: Harper and Row, 1982.
- 25 Berwick DM. Continuous improvement as an ideal in health care. *N Engl J Med* 1989;320:53-6.
- 26 Deming WE. *Out of crisis*. Cambridge: Cambridge University Press, 1991.
- 27 Argyris C, Schön DA. *Theory in practice: increasing professional effectiveness*. San Francisco: Jossey-Bass, 1974.
- 28 Schön D. *Educating the reflective practitioner*. San Francisco: Jossey-Bass, 1990.
- 29 Heron J. *The facilitator's handbook*. London: Kogan Page, 1989.
- 30 Morrison MJ. Promoting the motivation to change: the role of facilitative leadership in quality assurance. *Professional Nurse* 1992;7:715-8.
- 31 Burrows DE. Facilitation: a concept analysis. *J Adv Nurs* 1996;25:396-404.
- 32 Bryce FP, Neville RG, Crombie IK, et al. Controlled trial of an audit facilitator in diagnosis and treatment of childhood asthma in general practice. *BMJ* 1995;310:838-42.
- 33 Hearnshaw HM, Baker R, Robertson N. Multidisciplinary audit in primary health care teams: facilitation by audit support staff. *Quality in Health Care* 1994;3:164-8.
- 34 Rogers B. *Diffusions of innovations*. 3rd ed. New York: Free Press, 1993.
- 35 Adair J. *Effective team building*. London: Pan Books, 1987.
- 36 Stokes H, Thompson D, Seers K. *The Implementation of multidisciplinary guidelines for cardiac rehabilitation*. Oxford: RCN Institute, 1996.
- 37 Thompson DR, Bowman GS, Kitson AL. *An audit of cardiac rehabilitation services in England and Wales*. Hull: University of Hull, National Health and Safety Executive Project Report, 1995.
- 38 McCormack B, Wright J. *An evaluation of the quality of patient care and the development of case management in a rehabilitation setting for older people*. Oxford: RCN Institute, 1998.
- 39 Loftus-Hills A, Duff L. *The use of national standards to improve nutritional care for older adults: a case study*. Oxford: RCN Institute, 1998.