ORGANISATIONAL MATTERS

Quality collaboratives: lessons from research

J Øvretveit*, P Bate, P Cleary, S Cretin, D Gustafson, K McInnes, H McLeod, T Molfenter, P Plsek, G Robert, S Shortell, T Wilson

....

Quality improvement collaboratives are increasingly being used in many countries to achieve rapid improvements in health care. However, there is little independent evidence that they are more cost effective than other methods, and little knowledge about how they could be made more effective. A number of systematic evaluations are being performed by researchers in North America, the UK, and Sweden. This paper presents the shared ideas from two meetings of these researchers. The evidence to date is that some collaboratives have stimulated improvements in patient care and organisational performance, but there are significant differences between collaboratives and teams. The researchers agreed on the possible reasons why some were less successful than others, and identified 10 challenges which organisers and teams need to address to achieve improvement. In the absence of more conclusive evidence, these guidelines are likely to be useful for collaborative organisers, teams and their managers and may also contribute to further research into collaboratives and the spread of innovations in health care.

....

See end of article for authors' affiliations

....

Correspondence to:
Dr J Øvretveit, Professor of Health Policy and Management, The Nordic School of Public Health, Goteborg, Box 12133, S-40242 Sweden; jovret@aol.com

Accepted for publication 16 April 2002
....

R esearch into effectiveness is a valuable resource for improving health care, but health care has been slow to implement changes and to make use of new methods of quality improvement. There are a number of ways in which new knowledge and innovations can be "spread", which we call "intentional spread strategies". One such method is a quality improvement collaborative[1-4] which develops the abilities of practitioners to use this research to plan and test local changes in health care.

A collaborative brings together groups of practitioners from different healthcare organisations to work in a structured way to improve one aspect of the quality of their service. It involves them in a series of meetings to learn about best practice in the area chosen, about quality methods and change ideas, and to share their experiences of making changes in their own local setting. Examples of the subjects which have been addressed include medication error, asthma care, caesarean sections, cancer care, HIV/AIDs, hip replacements, intensive care, mental health, waits and delays, access to primary health care, and implementing a service model for chronic care.

The collaborative method is increasingly being used in the western world, mostly in the USA and UK. In the UK collaboratives have a central place in the health reforms: "*Collaborative programmes are playing a major role in spreading best practice*".[5] Over 10 000 personnel were reported to have been have been involved in the cancer, orthopaedic, and coronary heart disease collaboratives, with the cancer collaborative costing £6m and involving 43 separate projects.[6]

A group of researchers involved in evaluating collaboratives in the USA, UK, and Sweden met to consider the following questions:

- Are collaboratives effective or cost effective?
- Are the results sustained?
- Can they be made more effective?

At two meetings the researchers presented the findings which emerged from their evaluations and from their observations of previous collaboratives. Common findings were identified which have practical implications for making future collaboratives more effective. Many of the researchers had previously studied other quality improvement and organisational change programmes. This research was also used to help to explain why some teams and collaboratives were more successful in their quality improvement efforts than others. Although the evidence is not conclusive and the research is still in progress, the points discussed may be of help to those running and taking part in collaboratives and to others who are studying collaboratives. The conclusions are presented here as challenges which collaborative organisers and teams face when using this method of quality improvement. Many of the challenges are also relevant to other quality and change programmes.

A detailed definition of a collaborative is given, followed by some of the results already published and those reported by researchers at the meetings. These results are compared with those reported from a survey of traditional quality improvement projects.

WHAT IS A QUALITY COLLABORATIVE?

There are different types of multi-organisational structured collaboratives which use quality improvement methods. The aim of most is to close the gap between potential and actual performance by testing and implementing changes

quickly across many organisations. The most well known approach is the "Breakthrough" model developed by the Institute for Healthcare Improvement (IHI),[2–4] but there are many variations of this model. Collaboratives vary in the subject chosen for improvement, the number of organisations involved, the resources available, the process by which teams work, and in other respects.

When comparing collaboratives which they have observed or studied, the research group agreed that the method generally included many or all of the following features:

- Participation of a number of multiprofessional teams with a commitment to improving services within a specific subject area and to sharing with others how they made their improvements, each from an organisation which supports these aims.

- A focused clinical or administrative subject—for example, reducing Caesarean sections or wait times and delays or improving asthma care.

- Evidence of large variations in care, or of gaps between best and current practice.

- Participants learn from experts about the evidence for improvement, about change concepts and practical changes which have worked at other sites, and about quality improvement methods.

- Participants use a change testing method to plan, implement, and evaluate many small changes in quick succession—for example, in the IHI model, the rapid cycle improvement method.[7]

- Teams set measurable targets and collect data to track their performance.

- Participants meet at least twice, usually more, for 1–3 days to learn the methods, report their changes and results, share experiences, and consider how to spread their innovations to other services.

- Between meetings participants continue to exchange ideas and collaborative organisers provide extra support, sometimes through visiting facilitators, email, and conference calls.

A quality improvement project team which is not part of a collaborative—a "traditional QI team"—uses similar methods to plan and test changes but chooses its own problem and spends time working on diagnosing the problem and analysing causes before planning and testing changes. It may work on subjects for which there is no previous research on the potential performance that could be achieved or evidence of effective treatments or organisational forms. A team in a collaborative has already decided on the problem to work on and is given the evidence and change ideas, thus cutting out much of the investigation work of a traditional quality project. It also gets expert support and peer stimulus which might not otherwise be available.

- Does this mean that teams in a collaborative make improvements more quickly than "traditional" improvement teams?

- Does the external structure and stimulus of a collaborative press the team to make larger improvements?

- Do the results last longer or the ideas spread more widely?

There are no clear answers to these questions as yet, but a comparison can be made by reference to a study which used a convenience survey of 92 "traditional" quality improvement team projects in 32 US health organisations.[8] Many teams did not report "measured success" although this did not necessarily mean that they were unsuccessful. In those projects for which start and end dates were reported (n=41), the average was 17 months from identification of the problem to the first tangible result or the completion of the first pilot improvement—the length of time expected by most. There

was great variation, a finding similar to that of another study which reported a range of 1–66 months.[9] About 3 months was spent on "thinking through and organising the efforts" and forming the teams; 26% of projects reported their "pilot improvement used by other organisational units" and that this "roll out effort" took on average 45 days.

How does this compare with the results of collaboratives? Firstly, this study of 92 teams has not yet been completed. Secondly, there are no longitudinal studies of either an approach which reports whether the results of teams are sustained or whether the ideas are spread. Thirdly, many studies only report self-assessment by teams of their achievements using the IHI rating scale of 0–5. In part this is because many teams fail to gather data to track progress against their target, or because teams choose different targets.

However, some evidence from the results of collaboratives has been reported. One of the first was of a neonatal intensive care collaborative which achieved a fall in infection rates of 5% from 22% over a 2 year period compared with a control group.[10] In a US collaborative on caesarean section in 1995 sponsored by IHI and involving 28 organisations, 15% of teams reduced caesarean section rates by 30% or more in 12 months and 50% achieved a reduction of 10–30%.[11]

Another IHI collaborative reported that 20% of hospitals participating in an adverse drug events (ADEs) collaborative made one successful change—"an improvement of 20% or more in the target measure (a decrease in the rate of ADEs or errors, or an increase in compliance or another process indicator)", 50% of hospitals made 2–4 successful changes, 20% made five changes, and 10% dropped out or only collected data.[12]

The UK cancer collaborative was reported to "save 400 years of cancer waiting times since it was begun in June 2000".[5] A UK primary healthcare collaborative on improving access and reducing delays between primary and secondary care was reported to have reduced the risk of coronary heart disease by 34% in the practices involved.[13] Similar results were also reported for "spread practices"—that is, those to which the ideas were spread beyond the collaboratives. The orthopaedic collaborative cost £750 000 and involved 37 hospitals in 2000.[6] Mean length of stay (LOS) in hospital was reduced by 1 day to 7.2 days and 61% of projects saw a significant decrease. A wide variation in results was noted, ranging from a reduction in LOS of 36% to an increase of 12%.[1]

Plsek described an intensive care collaborative and also reported economic data. He noted that collaboratives "*do presume a relatively high level of sophistication in the use of process analysis and data collection tools of quality management . . . Collaborative improvement efforts do not replace an organisation's quality management efforts; rather they depend and build on them*".[4]

From the findings of the independent evaluations of the research group, the general picture to date is that many professionals valued taking part in a collaborative and that it provided for both professional and organisational development. Participation helped to build interprofessional cooperation within the team attending the collaborative and in their home organisation, and helped professionals to make links with colleagues in other organisations. In addition, there is evidence that some teams participating in collaboratives make significant clinical and organisational performance improvements more quickly than they might have done on their own. However, one study found that the size of improvement was less than expected.[1] From a comparison of the seven collaboratives evaluated and from observations of previous ones we estimate that up to 30% of organisations may drop out of the collaboratives before they finish, and that only 30% may achieve "significant improvements".

Research has so far not established whether collaboratives are more or less cost effective in making and spreading improvements than other approaches. Collaboratives are expensive, mostly because of the costs of meeting three or

more times for 2–3 days. If any improvements made are not maintained or spread after the collaborative, it is questionable whether a collaborative is worth the cost. Long term evaluations are thus important, and none have yet been published.

"Success", however defined, appears to depend on the subject chosen, how the collaborative is managed, the culture of a team's organisation, and on other factors considered below. Our discussions of the possible causes of underperformance identified a number of challenges which must be met to ensure the success of a collaborative. These are grouped below under the headings:

(1) purpose and preparation;

(2) collaborative organisation and meetings;

(3) post-collaborative transition.

CHALLENGES IN DEFINING PURPOSE AND IN PREPARATION
Challenge 1: Choosing the right subject
The collaborative method appears to be effective only for certain subjects. Early collaboratives focused on specific subjects relating to clinical practice and treatment processes such as reducing inappropriate caesarean sections. Generic improvement subjects such as reducing waiting times and delays have also been chosen. There have been some successes for both these types of collaboratives.[2–4] [14]

It is, however, questionable how effective collaboratives can be for broad subjects. A collaborative to "improve cooperation between primary and secondary care" is not likely to be effective. Each team may be working on significantly different types of improvement and there may not be clear or directly comparable examples of best practice, change concepts, or good research evidence. One which aims to introduce guidelines for referral and to improve communications between primary and secondary care in a narrow clinical area is likely to be more successful as it is about specific processes and a subject for which there is research evidence about what is effective.

The lesson from previous collaboratives is to choose a subject in which:

- there is evidence of effective interventions and of gaps between best and current practice;

- there are real examples of how improvements have been made in practice;

- professionals feel the proposed improvement is important and are motivated to achieve it;

- the subject is likely to be strategically important to organisations;

- participants can exchange ideas and suggestions which can be applied in different settings and stimulate ideas and motivation to change.

Challenge 2: Ensuring participants define their objectives and assess their capacity to benefit from the collaborative
Teams which are clear about their objectives for taking part and have discussed this with others in their "home" organisation appear to be more successful. Some participating teams do not examine and agree what they want to achieve beyond a specific performance improvement. Some do not agree with their "home" colleagues and management on their objectives for taking part. Many do not consider what their organisation and the team will need to do to achieve the improvement and to realise the other potential benefits from participation. It is questionable whether the performance improvement alone, if achieved, is worth the cost of taking part in a collaborative, especially if this improvement is not sustained. However, if other potential benefits are recognised and included in the objectives, then the value of participation is likely to be greater.

The general aim is to make an improvement and teams are expected to define specific targets such as reducing length of stay or medication errors. However, individuals, teams and organisations have other objectives for taking part which may change during the collaborative; these need to be made explicit. The objectives of professionals may include improvements to patient care, professional development, and working with a wider range of peers. They are perhaps less interested in spreading the ideas and methods they learn in the collaborative. Management may see participation in the collaborative as a way of getting measurable improvements quickly. Some also see it as a way of exposing their personnel to new ideas and a wider group of professionals, of improving professional cooperation, or even as a way of starting a change in culture. Ensuring that successful changes are spread may also be more important to managers than to professionals. Other reasons for taking part may be to test whether the methods work, to show to others what can be achieved, or for the team to gain skills which they can then teach to others.

What are the implications for future collaboratives?

(1) Teams and their management need separately and together to examine and agree what they want to achieve from taking part.

(2) Collaborative organisers need to clarify at the outset the many different reasons which participants have for taking part and to agree what the primary objectives are going to be.

(3) Collaborative organisers need to "fine tune" the collaborative to meeting the needs of their participant customers and to state openly those which the collaborative cannot meet.

(4) Teams and management need to recognise how much resources, work, and supporting conditions are needed to make improvements and to achieve all the objectives.

Theory and observation suggest that the ability to make improvements depends mostly on the organisational context for the team, their time, and their motivation. Is there then an argument for selecting only those teams which are likely to benefit? We observed large differences in the resources available to different teams, and in the extent to which the team's objectives were aligned with organisational priorities. We know from other research that change and quality improvement are easier in some organisations than in others, and that certain factors help and hinder different types of change.[15–19] From this research and from the evaluations, we think we can predict to some extent which teams will be more or less successful according to features of their host organisation and features of the team itself.

However, so far there is no evidence that collaboratives which have selected teams have been more successful than those accepting "all comers". There is anecdotal evidence that teams who have been "sent" by their management and who are less motivated appear less likely to make improvements.[1] Rather than selecting teams, it would seem that the best approach is for organisers to give prospective participants a method to self-assess how much they might benefit from participating,[20] as well as guidance about the different benefits and about what will be required to benefit. This also helps teams and organisations to prepare for taking part. Agreeing a contract with the organisation is another way which collaborative organisers can help to clarify expectations and encourage careful examination of whether the organisation is able to benefit.

Challenge 3: Defining roles and making clear what is expected
A collaborative is a temporary learning organisation. Different tasks need to be undertaken by different people in different

roles and their work needs to be carefully coordinated. In some collaboratives the different roles and what was expected of individuals were not clear, and there was misunderstanding and confusion which made the collaborative less effective. Although different parties take part in different collaboratives, most involve a sponsor who puts forward the subject and can also act as a financial sponsor (if teams do not themselves fully fund the collaborative). All collaboratives involve programme organisers (including a programme leader or director), facilitators, subject experts, change experts, and quality improvement experts. All involve site project teams which typically include a "team leader", at least one clinician, an opinion leader, and a quality specialist.

Some organisations have more than one team in a collaborative and a single "site project leader" to coordinate the two or more teams taking part from the organisation. Often a few representatives of the team will attend the collaborative meeting and have a responsibility to communicate with their colleagues and teach them what they learned there. Collaboratives also involve site operational and senior level managers who sometimes will also attend a collaborative meeting. Some involve external facilitators who may be members of the sponsoring organisation.

The need to choose and brief experts carefully is one example of the need for clarity about the responsibilities of different parties. "Subject experts" present the research evidence in learning meetings and help to identify the gaps between best and existing practice. Research into some collaboratives found problems when these experts were not briefed about their role and when their input did not link in with the input of other contributors. Both subject experts and quality methods experts should be chosen for their credibility with participants. Clinical experts legitimise the collaborative and motivate participants by explaining best practice and the practical changes which participants can test, ideally because they have made the changes themselves. Some collaboratives have included patient experts and evidence from patient studies, and this appears to add a valuable dimension when deciding which targets to set and changes to make.

It was clear from the evaluations that a collaborative will not be successful if the central programme organisers, facilitators, and team leaders do not have a sufficient amount of time or the skills to plan and organise the work and to give support to teams.[1] One cause of team failure was not recognising the importance of the role of the team leader and the need for continuity in this position: a change of team leader during a collaborative appears to be a strong predictor of whether the team will "drop out".

Challenge 4: Ensuring team building and preparation by teams for the collaborative

Collaborative organisers often assume that the teams coming to the first collaborative meeting are fully formed and functioning, and that the team will automatically develop and be effective over the period of the collaborative. Yet for some the first learning meeting was also the first time the project team had met. Some project teams have to deal with changing membership and leadership, which often reduces their effectiveness. We know from research that there are generic requirements for any project team to be effective, such as clarity about membership and leadership, continuity, and the ability to work through differences creatively and to deal with conflict.[18 21] Without these the team is less able to absorb and use quality methods. Collaborative organisers can give guidance before the first learning meeting about team building and also, in the meetings, give sessions meeting management, decision making, and effective team work.

As well as team forming and building before the collaborative, teams also need to make other preparations if they are to get the most from the first learning session and other

meetings of the collaborative. Some teams do not fully understand the process or the methods until the second or third meeting; better preparation would enable teams to benefit more from the meetings. It is also a mistake for teams to leave it until after the first meeting to consider how they will gather and analyse data. Teams need to take stock of which data they have access to and consider which they could use in their quality improvement work before the first meeting.

Perhaps the most common preparation mistake was not gaining the agreement and involvement of senior clinical and managerial leaders, and ensuring that they understood what was required of them, of the team, and of the organisation if the team was to make improvements. Quality improvement needs time and attention from local senior clinicians and managers as well as from project team managers and members. This is a common finding from evaluations of hospital quality programmes and other quality research.[9 22] It is not sufficient to "sign up" senior leaders at the beginning of a collaborative and to then fail to engage with them further. Nor is it sufficient to get a general willingness to support the project: they need to know exactly what support is required and how to give it—something which can be detailed in the "self assessment to benefit" tool mentioned earlier.

Our research and that of others suggests that, without visible and real sponsorship and support from senior leaders, it is unlikely that any improvement will be significant or sustained. Although it is not necessary to include senior leaders on local project teams, project managers need to ensure that a senior clinician and senior manager have an active role on local steering groups—not least to ensure that the work of the collaborative is aligned to other local or national initiatives. Other mechanisms for involving leaders should be considered by organisers of a collaborative. For example, a mental health collaborative in the UK included in one of its learning sessions a half day on spread and sustainability with the chief executives from all participating hospitals.

CHALLENGES IN ORGANISING AND RUNNING LEARNING MEETINGS
Challenge 5: Enabling mutual learning rather than carrying out teaching

One challenge in running learning meetings is to maximise learning in the short time available. Some organisers compressed too many didactic presentations into the meetings. They did not give enough time to facilitating learning by practice and to allowing teams to discuss how to apply ideas in the team's home setting.

Gaining knowledge of quality methods and change concepts is relatively easy. It is much more difficult to learn how to apply the methods and to interpret change concepts for the local setting. Developing the ability to judge when quality methods are necessary and to adapt them flexibly to the setting and problem is necessary not just to address the focal subject; it is important for teams to be able later to recognise and solve the many problems which will arise for them in the future. Developing this competence is necessary if individuals and teams are to continue improvements after the collaboratives and to "spread" the methods to others within their home organisation. Lectures alone do not develop this competence and other learning methods need to be used—for example, simulations and supervised practice applying the methods.

Another lesson from one study was that plenary sessions should be kept to a minimum; participants consistently reported that the most useful part of the meetings was the time available to spend with their own team and with colleagues from other organisations. This can help teams to consider how to apply the ideas in their local setting. The emphasis on teaching in some collaboratives also left less time

for informal socialising during which participants could contact each other after meetings to follow up ideas. Collaborative organisers need to build in time and to engineer opportunities for informal contact as much "know how" is transferred in this way.

Challenge 6: Motivating and empowering teams

Because some members of a team attend a collaborative learning meeting, it does not mean that the team is motivated and confident of their ability to make improvements. Some are sent by their management, may not be motivated, or convinced that the improvement is important and achievable. A challenge presented to the organisers of most collaboratives was to raise and maintain the team's motivation and to build their confidence that they could succeed.

There is reason to think that, if professionals believe that patient care can and should be better, and that they have it within their power to make improvements, then they will give the time and effort that is required. It appears that a strong sense of purpose and mission is as important as gaining quality skills, and is something which the social setting of collaboratives can develop. A sense of purpose gives a resilience to the setbacks which teams will experience. Building motivation initially appears to depend most on getting credible experts, having good evidence, and showing how patients may be suffering unnecessarily. This alone is not enough. There is a need to build the confidence of participants in their ability to make improvements. This is helped by peers giving examples of changes which teams can then translate. Perhaps the strongest motivation and confidence comes from teams seeing improvements which they have made, which depends in part on them being able to measure progress towards targets.

Challenge 7: Ensuring teams have measurable and achievable targets

We know that teams that do not define their targets early and measure progress are less successful in learning quality methods and achieving improvements. Measurable and time specified targets for project teams are an essential part of the collaborative model. There appears to be value in defining both outcome targets—for example, health indicators or reductions in length of stay or infection rates—and process or care activity targets—for example, all patients will receive "x" on admission.[23] Organisers need to get the right balance between challenge and perceived achievability: teams need to be encouraged to set challenging targets, but also need to feel that targets are achievable.

The research suggests that there is value in agreeing a common set of measures which all teams will track. This helps monitoring and evaluation, as well as enabling teams to learn from each other. It reduces the complexity which can come in a collaborative that tries to facilitate improvement on many different measures. To allow for differences among teams, teams can define a second set of measures which reflect their other objectives.

The evaluations suggest that all teams should report their performance to the collaborative leaders on a regular (perhaps quarterly) basis. However, researchers took different views about the value of each team presenting their performance to the full meeting. Some researchers also felt that self-assessment rating was less useful than actual performance level reporting. Reporting progress on targets does keep teams focused on the collaborative objective and on the need for measurement, and helps them to learn the importance of objective assessment. It also helps organisers to track progress and to decide which teams may need extra support.

Challenge 8: Equipping teams to deal with data and change challenges

The most difficult tasks which teams appeared to experience in all collaboratives were collecting and using data, and plan-

ning and making changes. Learning how to and experiencing doing it are also essential to a team's ability to continue making improvements after the collaborative. One set of challenges for a team is to find a cost effective way to collect relevant baseline data and then to organise the collection, analysis and reporting of the data to follow progress in reaching the target. Another is deciding which other data are needed to analyse quality problems, establish the main causes, and to test changes.

Teams appeared to have the most difficultly in these areas. Organisers sometimes failed to recognise that teams often did not see how important data collection was, or failed to see the difficulties which teams experienced in planning and collecting data. Organisers often did not give enough time or examples and learning experiences to help develop a team's capabilities in these areas.

Research shows that collaboratives need to develop the understanding of change theories and issues of individuals, as well as specific change skills. These include skills for breaking down problems, for undertaking project management, and for analysing and managing the politics of change. Some collaboratives do not give sufficient time to this, or developed knowledge but not skills. At the team level, collaboratives need to develop a team's belief in their ability to make change as well as their skills in planning and implementation. However, research also shows that the change making capabilities of individuals and teams are insufficient to achieve change; management and a supportive culture amplifies these capabilities.[7 22] Teams need help to understand how best to achieve change within their own organisational culture.

CHALLENGES IN POST-COLLABORATIVE TRANSITION

Challenge 9: Learning and planning for sustaining improvements

Are improvements sustained 2 years after a collaborative? Our research so far has no definitive answer to this important question. There are some indications that outcome improvements can be sustained, but less evidence of continuous improvement or institutionalisation of the methods. What is clear is that many collaboratives and teams did not make time to learn about and plan how to sustain improvements.

Even if a team manages to achieve its target improvement, there is no guarantee that this level of performance will be sustained. Many teams fail to recognise that work will be needed after the collaborative to maintain performance. In most cases teams need to make changes to procedures, systems, and organisation to achieve an improvement in the first place. Further changes will then be needed to these systems to maintain the level of performance. Teams in some collaboratives did not learn how to institutionalise the changes to survive individuals leaving or how to recognise when further changes were needed and how to make them.

Another type of change for sustainability is for teams to use quality methods and thinking after the collaborative. This is not only for the team to make continuous improvements. Many problems will arise and will threaten the improvement they may have achieved. To continue to use the methods, teams will need to learn how to use them flexibly and be convinced of the value of doing so. There were some indications that many teams had not acquired this deep learning and conviction which allows flexible continuous application, and makes it more likely that they can pass the ideas on to others. One example was where a team chose specific changes from a list they were given, rather than learning a change concept and themselves deciding which specific change would best translate the change concept to their local setting.

It is a challenge for collaborative organisers, teams, and their management to give enough time to learn how to sustain improvement outcomes and how to use the methods after the

collaborative, especially when they are working hard to achieve their immediate targets. The possibility of a post-collaborative fall in performance needs to be recognised, and strategies designed to turn what is a time limited programme into a genuine continuous quality improvement process.

Sustainability also refers to the ongoing network or "community of practice" which should have been established during a collaborative. Are project team managers and members still sharing ideas and experiences with others who participated in the collaborative? Are they continuing to share and spread good practice? One strategy is to plan for a network to continue after the collaborative. This approach was used successfully in one Australian collaborative.

Challenge 10: Planning and learning for spread

Spread, like sustainability, can refer to different things. Guidance about more effective spread depends on *who* is the target of spread—the teams in the collaborative, other units within their organisations, or other organisations. Teams are also encouraged to spread their improvements beyond a specific patient population which they may have selected for testing the change. Spread also depends on *what* is to be spread—change ideas, specific quality methods, or even the collaborative method itself.

One of the aims of all collaboratives is to spread among the participants practical changes which others have used successfully to improve their service ("change spread"). These are ideas presented to the collaborative meeting by experts, but are also changes which projects in the collaborative have tested and which they then share inside and outside the meetings. Another type of spread is of the use of quality methods among collaborative teams which have not used these methods before ("quality method spread"). Spread also refers to both change ideas and quality methods being taken up beyond the teams in the collaboratives by other units in the team's organisation, or by other organisations.

The evaluations show that spreading ideas within a collaborative depends on effective contact and exchange between teams inside and outside the meetings. This is helped by collaborative organisers giving guidance to teams about how formally to present their changes at the meetings, giving structured opportunities for exchange, as well as by making informal exchange easier in the ways noted above. There is a growing evidence base about effective spread strategies.[15 17 19] Spreading quality improvement changes within an organisation requires the right leadership, support from opinion leaders, and training about quality improvement techniques.

There is less clear evidence from the evaluations about how to spread change ideas and quality methods to teams not involved in a collaborative, or about how much this has been done by teams. In practice this is because this is not a priority for many collaboratives, although it was often presented as an aim. One option is for a team and its organisation itself to establish an "internal" collaborative for this purpose. Sometimes spread was not recognised early on as one of the objectives for the collaborative or for a team. Where spread is an objective, the error is not recognising which type of spread is wanted and then learning and planning for it before the collaborative finishes.

There is a question as to whether it is necessary to set up a collaborative to implement a change if a team has already had success after testing an idea in the organisation; why not support others to implement the same change without the testing? Is "local reinvention" and testing always necessary? Similarly, is a collaborative necessary to spread the use of quality methods in organisations which already have experience with quality methods? These are just some of the many questions future research will need to address.

Recommendations for increasing the chances of successful spread of quality improvement through a collaborative are shown in box 1.

> **Box 1 Recommendations for increasing the chances of successful spread of quality improvement through a collaborative**
>
> **Recommendations for preparation and defining purpose**
> - Choose the right type of subject.
> - Define objectives for taking part and assess your capacity to benefit from the collaborative.
> - Define roles and make clear what is expected.
> - Ensure team building and preparation by teams for the collaborative.
>
> **Recommendations for collaborative learning meetings**
> - Emphasise mutual learning rather than teaching.
> - Pay attention to motivating and empowering teams.
> - Ensure teams have measurable and achievable targets.
> - Equip and support teams to deal with data and change challenges.
>
> **Recommendations for post-collaborative transition**
> - Learn and plan for sustaining improvements, involving managers in this work.
> - Plan and learn for "spread".

CONCLUSIONS

The term "collaborative" is beginning to be used for any network or meeting of practitioners cooperating for different purposes. However, the term originally described a structured framework within which teams learn about research and best practice, apply quality methods, and exchange their experiences of making improvements. This is a new quality improvement methodology as well as a new type of medical technology which is increasingly being used, and there is little knowledge about its effectiveness. Knowledge about this approach can help to develop methods for spreading proven medical technologies.

We have reported conclusions from a comparison of findings which emerged from evaluations of collaboratives currently in progress. Researchers reported their evaluations at two meetings and agreed that quality collaboratives have had some success and that many teams and organisations taking part have benefited. Identifying the gaps between best and existing practice and showing that changes can be made appears to build a conviction within a team that it has the power to improve patient care significantly. Learning methods and change strategies with peers and meeting in this way can be a potent means of stimulating rapid improvement. Reporting progress and hearing how colleagues have made changes and overcome problems can be motivating and gives practical ideas.

Researchers also agreed that future collaboratives could be more effective if attention was paid to a number of areas described in this paper (box 1). Although there is no firm evidence yet, we suspect that failure or success for a team mostly depends on five general factors:

(1) their ability to work as a team;

(2) their ability to learn and apply quality methods;

(3) the strategic importance of their work to their home organisation;

(4) the culture of their home organisation; and

(5) the type and degree of support from management.

We do not know which specific aspects of culture and management support are critical.

One conclusion from the research is that a quality collaborative can be a temporary and powerful learning organisation which motivates; provides knowledge, skills and support; and

Key messages

- Quality collaboratives aim to accelerate a team improvement project.
- Researchers studying collaboratives found that not all teams were successful.
- Careful preparation and organisation by the leaders and supportive home management appear to be essential for success.
- The cost effectiveness of the method depends on whether a team sustains improvement and spreads ideas after the collaborative.

develops its own culture. This can equip and empower teams to address quality problems. However, if the home organisation has the wrong culture and there is little senior leadership support, the achievements of a team are limited.

At this stage there is no evidence about long term results or about the cost effectiveness of collaboratives compared with other methods. There are also differences between collaboratives and between how different countries use them. These subjects are to be addressed in future research, as are ways of supporting the post-collaborative phase and enhancing spread and sustainability. Given that many collaboratives are being established, more research is needed of the different types, their effectiveness, and which links the empirical research to organisational and change management theory as well as to social network and knowledge management theory. In the meantime we believe that there is enough evidence to suggest that addressing the challenges described in this paper would make collaboratives more effective. We also think that many of the findings are relevant for increasing the effectiveness of any team based quality improvement programme and for designing other types of intentional spread strategies for more rapid implementation of new knowledge and innovations.

ACKNOWLEDGEMENTS

. . . .

Authors' affiliations
J Øvretveit, The Nordic School of Public Health, Goteborg, Sweden
P Bate, The Health Services Management Centre, Birmingham University, UK
P Cleary, Harvard Medical School, Boston, USA
S Cretin, RAND Health, Santa Monica, California, USA
D Gustafson, The University of Wisconsin, Madison, USA
K McInnes, Harvard Medical School, Boston, USA

REFERENCES

1 **Bate S**, Robert G, McLeod H. *Report on the 'Breakthrough' collaborative approach to quality and service improvement within four regions of the NHS. A research based investigation of the orthopaedic services collaborative within the Eastern, South & West, South East and Trent regions.* Birmingham: Health Services Management Centre, University of Birmingham, 2001.
2 **Kilo C**. A framework for collaborative improvement: lessons from the Institute for Healthcare Improvement's Breakthrough series. *Qual Manage Health Care* 2001;**6**:1–13.
3 **Wilson T**, Plsek P, Berwick D, *et al. Learning from around the world: experiences and thoughts of collaborative improvement from seven countries.* Boston: Institute for Healthcare Improvement, 2001.
4 **Plsek P**. Collaborating across organisational boundaries to improve quality of care. *Am J Infect Control* 1997;**25**:85–95.
5 **NHS**. *Modernisation board annual report.* Leeds: NHS Management Executive, 2002: para 1.2.3.
6 **Bate P**. *Quality into practice.* Presentation at the UK National Service Delivery and Organisation Research Programme, London, March 2002.
7 **Langly G**, Nolan K, Nolan T, *et al. The improvement guide.* San Francisco: Jossey Bass, 1997.
8 **Alemi F**, Safaie, F Neuhauser, D. A survey of 92 quality improvement projects. *Jt Comm J Qual Improve* 2001;**27**:619–32.
9 **Sales A**, Moscovice I, Lurie N. Implementing CQI projects in hospitals. *Jt Comm J Qual Improve* 2001;**26**:321–31.
10 **Horbar J**, Rogowski J, Plsek P, *et al.* Collaborative quality improvement for neonatal intensive care. *Pediatrics* 2001;**107**:14–22.
11 **Flamm B**, Berwick D, Kabcenell A. Reducing cesarean section rates safely: lessons from a "breakthough series" collaborative. *Birth* 1998;**25**:117–24.
12 **Leape L**, Kabcenell A, Gahndi T, *et al.* Reducing adverse drug events: lessons from a breakthrough series collaborative. *Jt Comm J Qual Improve* 2000;**26**:321–31.
13 **Oldham R**, *et al. How to spread good practice to 7 million patients.* Presentation at the 7th European Quality Forum, Edinburgh, March 2002.
14 **Svensson C**. *Breakthrough – reducing queues and waiting times to, through, and within healthcare: a report of a second breakthrough project.* Stockholm: Swedish Federation of County Councils, 2000.
15 **Bero L**, Grilli R, Grimshaw J, *et al.* Closing the gap between research and practice: an overview of systematic reviews of interventions to promote the implementation of research findings. *BMJ* 1998;**317**:465–8.
16 **Shortell S**, Bennett C, Byck G. Assessing the impact of continuous quality improvement on clinical practice: what it will take to accelerate progress. *The Milbank Quarterly* 1998;**76**:593–624.
17 **Plsek P**. *Spreading good ideas for better healthcare: a practical toolkit.* Texas: Veterans Health Administration, 2000 (paulplsek@ directedcreativity.com).
18 **Øvretveit J**. *Integrated quality development for public healthcare.* Oslo: Norwegian Medical Association, 1999.
19 **NHS Centre for Reviews and Dissemination**. Getting evidence into practice. *Effective Health Care* 1995;**5**:1–16.
20 **Gustafson D**. *Organisational change manager.* Madison: Madison Healthcare Improvement LLC, 1998.
21 **Fried B**, Topping S, Rundall T. Groups and teams in health service organisations. In: Shortell S, Kalunzny A, eds. *Health care management: organisation design and behaviour.* Albany: Delmar, 2000: 154–90.
22 **Shortell M**, O'Brien J, Carman J, *et al.* Assessing the impact of continuous quality improvement/total quality management: concept versus implementation. *Health Serv Res* 1995;**30**:377–401.
23 **Øvretveit J**. *Action evaluation of health programmes and change: a handbook for a user focused approach.* Oxford: Radcliffe Medical Press, 2002.