BriefingPaper

Spreading and sustaining innovations in health service delivery and organisation

The NHS Service Delivery and Organisation Programme recently commissioned a systematic review of the literature on the spread and sustainability of innovations in health service delivery and organisation. The result is a report called *How to Spread Good Ideas* (NCCSDO, 2004). This briefing paper presents the main findings of the review.

The review was carried out by Trish Greenhalgh, Professor of Primary Health Care at University College London, and five colleagues from University College London and the University of Surrey: Glenn Robert, Paul Bate, Fraser Macfarlane, Olympia Kyriakidou and Richard Peacock.

The group identified more than 1000 relevant documents, each dealing with how innovations spread, either passively, or as a result of active efforts to persuade people to adopt them. Box 2 shows the definition of "innovation" developed by the team.

Box 1: Key messages

- Adoption of innovations in organisations is a complex and often drawn-out process that should not be thought of as a single event.
- Research has identified many strategies that improve the chances of successful adoption of innovations, including those in service delivery and organisation. Which strategies will help will depend on:
  1. The nature of the innovation;
  2. The characteristics of the adopters;
  3. Ways of spreading the message about the innovation;
  4. The role of opinion leaders and "champions";
  5. How adoption will take place;
  6. The type of organisation, and its culture;
  7. The organisation's readiness to change; and
  8. The impact of factors outside the organisation.

Box 2: Health service innovations

For the purposes of this study, an innovation in health service delivery and organisation was defined as a set of behaviours, routines and ways of working, along with any associated administrative technologies and systems, which are:

- Perceived as new by a proportion of key stakeholders;
- Linked to the provision or support of health care;
- Discontinuous with previous practice;
- Directed at improving health outcomes, administrative efficiency, cost-effectiveness, or the user experience; and
- Implemented by means of planned and coordinated action by individuals, teams or organisations.

Such innovations may or may not be associated with a new health technology.

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The innovation

Different innovations are adopted by individuals, and spread to other individuals, at different rates. Some are never adopted at all; others are rapidly abandoned. Innovations that are more easily adopted and implemented tend to:

- Have a clear, observable, unambiguous advantage, such as greater effectiveness;
- Be compatible with the values, norms and perceived needs of the intended adopters;
- Be perceived by key players as simple to use;
- Allow intended users to experiment with them. Users can also adapt, refine or otherwise modify them to suit their own needs.

The adopters

People are not passive recipients of innovations. Rather, they seek innovations out, experiment with them, evaluate them, challenge them, complain about them, talk to others about them, modify them to fit particular tasks, and attempt to improve or redesign them. Such behaviour contrasts with the widely cited "adopter categories" (early adopters, early majority, late majority and laggards). The research reviewed in this report demonstrates that these categories are generally over-simplistic and unhelpful, and are best avoided.

A wide range of psychological and other factors help to explain why innovations are adopted in different ways in different circumstances. For example, the study identified a large literature on individual characteristics associated with an individual's tendency to try out, adopt, and use innovations. These include personality traits such as:

- Tolerance of ambiguity;
- Intellectual ability;
- Values; and
- Learning style.

The study also concluded that people are more likely to adopt a particular innovation if they are motivated to use it by believing in its benefits and/or have the necessary skills to use it. They will also be more likely to adopt it if it meets a need that they have already identified.

Successful implementation is also more likely if the innovation has the same meaning for individual intended adopters, as for their top management, service users and other stakeholders. For example, if everyone agrees that the innovation is likely to reduce a patient's length of stay in hospital, it is more likely to be adopted.

Within organisations, other influences on whether an individual adopts a particular innovation include decisions made by someone else in the organisation, decisions made collectively by groups of people, and whether the individual is told to adopt the innovation. Making adoption by individuals compulsory increases the chance of adoption.

Spreading the message

Most types of communication and influence lie on a continuum between pure diffusion (in which the spread of innovations is unplanned, informal and decentralised) and active dissemination (in which the spread of innovation is planned, formal and centralised). People may become aware of innovations from the mass media and other impersonal channels of communication, but the main factor promoting adoption of innovations is the influence of other people they know: their social networks.

The structure and quality of someone's social network is a powerful influence on adoption of innovations. Different groups have different types of social networks. For example, doctors tend to operate in informal, horizontal networks, while nurses often have formal, vertical networks.

Some social networks are better for some types of influence than others. Horizontal networks are more effective for spreading peer influence and supporting people as they work out what the innovation means for them. Vertical networks are more effective for cascading information (including tailored messages) and passing on authoritative decisions.

Adoption of innovations by individuals is more likely if they are similar in socioeconomic, educational, professional and cultural background to current users of the innovation.

Opinion leaders and champions

Some people have particular influence on the beliefs and actions of their colleagues: they are opinion leaders. Expert opinion leaders influence through their authority and status; peer opinion leaders influence by virtue of representing the group, and through their credibility.

Opinion leaders can have either positive or negative influence. "Negative" opinion leaders sometimes need do little more than show indifference to an innovation to inhibit its spread among their

peers. When planning the introduction of an innovation, it is important to identify the true opinion leaders (and in particular to distinguish between opinion leaders who only influence a particular innovation, and those whose influence extends across a wide range of innovations). Without their support, the innovation may not be successfully adopted. If a project is insufficiently appealing, it is unlikely to attract the support of key opinion leaders.

Individuals in an organisation are more likely to adopt an innovation if key individuals, who have good personal relationships within their social networks, are willing to back the innovation. These people are known as "champions". There is, however, remarkably little evidence on how to identify organisational champions and harness their energy.

Another highly influential group of people have been called "boundary spanners". These individuals have significant social ties both within and outside the organisation. They play an important role in capturing ideas from outside that will become organisational innovations. Organisations that promote and support those with boundary-spanning roles are more likely to become aware of innovations early on, and to assimilate them quickly.

The adoption process

Adoption is a process rather than an event. It is often described as having five stages: awareness, persuasion, decision, implementation and confirmation. As the adoption process progresses, the concerns of those involved in bringing about the innovation will change. People who have not yet used the innovation need to be made aware that it exists. They will want to know what it does, and how to use it or apply it. How will it affect them personally – for example, how much will it cost?

People who have only recently begun to use the innovation continue to need information about how it works, and begin to need training and support to help them fit the innovation into their daily work. More experienced users have a need for feedback on the consequences of the innovation (both intended and unintended). They also need support to allow them to adapt and refine the innovation to better suit local and individual needs.

The study found evidence that planned dissemination programmes are most effective if they take full account of the needs and perspectives of the potential adopters, and where strategies are tailored to the demographic and cultural features of different groups. Suitable communication channels must be used, with appropriate messages. Evaluation and monitoring is also crucial to the successful uptake of the innovation.

The organisation

Organisations differ widely. Research has shown that the organisations that are most likely to successfully adopt innovations are large, mature and specialised. They are differentiated into specific departments and units, they have decentralised decision-making structures, and they have slack resources available to be channelled into new projects. Nevertheless, these factors account for only a small proportion of the variation between organisations.

Other characteristics that have been found to help organisations to assimilate innovations include:

- A culture that supports the capturing and sharing of knowledge;
- Leadership that promotes the sharing of knowledge both internally within the organisation and externally via networking and collaboration;
- Strong leadership and good managerial relations;
- Clear strategic vision, with visionary staff in key positions;
- Giving project teams the autonomy to take relevant decisions;
- Provision of appropriate staff training;
- A climate conducive to experimentation and risk-taking;
- Effective monitoring and feedback systems.

Readiness for change

Innovations are most likely to be successfully adopted when an organisation is ready for change. Several key features indicate when this point has been reached. These include:

- When staff perceive that the current situation is intolerable;
- When the innovation fits with the existing values, norms, strategies, goals and ways of working of the organisation;
- When the organisation has made a full assessment of the implications of the innovation;
- When supporters of the innovation outnumber opponents, and are more strategically placed than them;
- When the innovation has been allocated adequate resources;
- When the organisation has systems in place to monitor and evaluate the impact of the innovation, and can therefore respond rapidly to its consequences – both predicted and unpredicted, and intended and unintended.

The external environment

The factors that determine whether an organisation decides to adopt an innovation, and the success of its efforts to implement and sustain it, include ideas and information gleaned from outside, and perceptions about what other organisations are doing. "Bandwagons" affect organisations in much the same way that fashions affect individuals. An organisation will question whether comparable organisations have already adopted the innovation, or plan to do so. Organisations that network extensively with others will be more amenable to this influence.

Formal networking initiatives, such as quality improvement collaboratives, aim to promote the sharing of ideas. These can help to promote adoption of new innovations, but they are not always effective. Such initiatives are often expensive and the gains from them difficult to measure; current evidence on their cost-effectiveness is limited.

Factors influencing the success of healthcare quality improvement collaboratives include: the nature of the topic chosen for improvement; the extent to which there are opportunities to learn from others in informal settings; and the quality of support subsequently provided to teams during implementation.

The adoption decision and the success of attempts to implement an innovation are widely perceived to depend also on a host of external political, economic and ideological factors. These include political directives, and the time at which the innovation arrives in relation to the policy-making cycle.

Implementation and sustainability

The evidence on implementation and sustainability of innovations is particularly complex, and is difficult to disentangle from that on change management and organisational development. The evidence reviewed in this paper suggests a messy model of assimilation, in which organisations move back and forth between initiation, development, and implementation, punctuated variously by shocks, setbacks and surprises. Success in implementing and sustaining an innovation in service delivery and organisation depends on many of the factors already discussed above.

In deciding on appropriate strategies for introducing innovations, managers might usefully reflect on the nature of each of the issues discussed in the paper as they relate to their own situation.

The full report, this briefing paper and details of current SDO research in the field can be downloaded at: www.sdo.lshtm.ac.uk/changemanagement.htm

About the SDO Programme

The SDO R&D Programme is a national research programme managed by the National Co-ordinating Centre for NHS Service Delivery and Organisation Research and Development (NCCSDO) under contract from the Department of Health's R&D Division.

For further information about the NCCSDO or the SDO Programme visit our website at www.sdo.lshtm.ac.uk or contact:

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This report presents independent research commissioned by the National Institute for Health Research (NIHR). The views and opinions expressed therein are those of the authors and do not necessarily reflect those of the NHS, the NIHR, the SDO programme or the Department of Health

Addendum

This document was published by the National Coordinating Centre for the Service Delivery and Organisation (NCCSDO) research programme, managed by the London School of Hygiene and Tropical Medicine.

The management of the Service Delivery and Organisation (SDO) programme has now transferred to the National Institute for Health Research Evaluations, Trials and Studies Coordinating Centre (NETSCC) based at the University of Southampton. Prior to April 2009, NETSCC had no involvement in the commissioning or production of this document and therefore we may not be able to comment on the background or technical detail of this document. Should you have any queries please contact sdo@southampton.ac.uk