Widespread focused improvement: lessons from international health for spreading specific improvements to health services in high-income countries

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Accepted for publication 20 March 2011

Abstract

Patients and citizens want more and better healthcare, and want to pay less for it. One way rapidly to respond to these demands is to spread proven or promising improvements in treatments or service delivery models. However, there is little research from high-income countries about effective ways to spread these improvements. In international health there is more experience and knowledge of scale-up, more variety in research approaches used to study the subject, and fewer resources and infrastructure for scaling-up improvements across a nation. This paper draws on reviews of research and experience in international health to contribute to conceptual and empirical knowledge as well as to practical strategies. It describes and illustrates three approaches: hierarchical control, participatory adaptation and facilitated evolution. It presents lessons from international health which could be of use to those studying, choosing, planning and progressing strategies to increase the uptake of proven or promising interventions to health services in high-income countries.

Keywords: quality, safety, management

Introduction

Many studies have shown variations in the quality of health services and the potential for improvement [1]. There is evidence of the high cost of quality under-performance, both in suffering and in financial terms [2]. There is also growing evidence of interventions and changes which can be effective in some situations for improving quality [2, 3]. One approach has been to find such effective changes, specify their elements and enable and encourage others to copy the change, using ‘spread’ or ‘scale-up’ strategies. This is distinct from ‘diffusion’, which refers less to an intentional strategy and more to how innovations become adopted, although knowledge of innovation diffusion can contribute to understanding successful intentional spread [4].

Quality breakthrough collaboratives are one example of an intentional spread strategy, but the results of individual projects taking part in collaboratives are variable [5], as are the results from spread programmes of other types. Many questions remain about the cost effectiveness of collaboratives and of similar strategies, and about whether one approach is as effective for preventing, for example, central line infection as it would be for other changes such as spreading a ‘medical home model’ [6] or ‘computer physician order entry’ [7].

Overall, the intentional spread of an improvement change found to be effective in one place to other places has not been as successful as was hoped. This paper proposes that some explanations and solutions for this can be found from international studies of the ‘scale-up’ of practices and projects.

International health experience and research

In this paper ‘international health’ refers to knowledge about health services, systems and population health in middle and lower income countries, as opposed to knowledge about these subjects in higher income countries such as Northern America, Europe and Australasia, although this distinction is increasingly problematic. There is an extensive experience of trying to improve health and healthcare in low-income countries, and examples of scale-up strategies, often lead by non-governmental organizations and church agencies (NGOs). Researchers in international health have developed research and evaluation methods, and debated many of the conceptual and epistemological issues which are beginning to be confronted by quality improvement (QI) researchers.
when considering ways to document and evaluate complex social interventions and large-scale social programmes.

The aim of this paper is to contribute both to research and to practical action for strategies and methods to speed and spread the use of effective treatments and service models. The paper draws on the author’s research and experience in international health to identify three distinct approaches which are illustrated in different examples. The research is a systematic review of strategies for strengthening health systems [8], a review carried out by the author for an IHI/VHA conference on the subject [9], and the author’s evaluations of and experience with international health projects since 1994. The lessons from this field could be of use to those studying, choosing, planning and progressing strategies to increase the uptake of proven or promising interventions to health services in high-income countries, such as researchers, policy advisors, managers and QI specialists.

‘Scale-up’ in international health

This paper defines scale-up in international health as a ‘systematic programme to bring effective treatment, diagnosis or care approaches to wider populations, or to improve in other ways disease- and programme-specific services’. The ‘scale-up literature’ in this field provides details of the implementation of different strategies and of the factors which help and hinder this. Examples of such changes are the more widespread use of,

(i) products, such as a portable solar-power refrigerator for storing vaccines, or low-cost HIV/AIDS testing kits;
(ii) practices, primarily ways to carry out a work task, for example a sequence of steps to be followed for immunizing a young child;
(iii) a combination of practices, such as a number of interventions which improve care for expectant mothers;
(iv) ways of organizing a service, such as creating a coordinated team of practitioners for tuberculosis prevention and treatment;
(v) interventions of other types, such as a new way of paying providers, co-payment or community-based insurance systems.

Traditionally, scaling-up in international health has involved:

(i) identifying a practice or model which is effective (an ‘exemplar’) for a particular health need or problem;
(ii) documenting its features which appear to be essential to the results (the change ‘content’—the ‘what’), and communicating them simply in a way in which others can understand (e.g. a ‘packaged description’ of the practice or model often as part of a simple pack of teaching materials),
(iii) documenting features of the situation which may be important for making it possible to carry out the practice or model and to make it effective and to sustain it as a routine part of the service (e.g. staff numbers and skills, finance, whether a computer is necessary),
(iv) a method or strategy (the change ‘implementation method’—the ‘how?’) for enabling others to understand, adapt and put a similar practice or model into operation (e.g. ‘barefoot facilitators’ or ‘honey bees’ who visit, teach and support service units to use the new approach),
(v) monitoring the speed and extent to which others implement the practice or model and evaluating the intermediate results and health outcomes.

Often the practice or model which is effective was a pilot or a service which had received special support to develop ‘the new way’, or was in some way not typical in other services. Scale-up has then involved taking what was developed in this special situation and putting it into practice in typical or common situations. This usually requires a ‘scale-up support system’ for some period of time, or at least until the new approach is recognized as the new normal way. Often traditional systems and structures are not designed to support the new practice or model, and scale-up needs to adjust these to accommodate the new practice or model. Thus, scale-up involves direct interventions to train people and make changes to implement the practice or model, but, in addition, other support interventions to change the systems and structures that are needed to sustain the practice or model. If extra staff or finance are required permanently, then, for the improvement to be sustained these extra resources have to be secured. Sometimes the improvement will save money in the long term, and, if so, then an investment-financing mechanism is required.

The last 20 years has seen scale-up strategies in international health increasingly involving communities in different ways to help plan, implement, sustain and sometimes finance changes to health services. In addition, communities have carried out complementary changes outside of formal health services, especially for preventative services. How communities are engaged and have helped to lead these changes can also provide ideas for high-income health systems, especially with the increasing need to improve care for chronic diseases and for frail older people and the role which social support networks could provide it they were developed or activated.

Concepts and terms and the development of knowledge

Observations from comparing QI literature with the international health literature is, in the former, a lack of empirical research into large-scale improvement spread, and a lack of conceptual development and in the latter, the greater variety of research and evaluation methods used to answer a wide range of questions about implementation as well as about efficacy and effectiveness.

Terms such as ‘spread’, ‘scale-up’, ‘approach’, ‘strategy’ and ‘method’ are used in the improvement literature in different ways, sometimes to refer to the same thing, sometimes to different things. This makes communication and
cumulative knowledge within and between knowledge domains more difficult and often confuses practitioners. This is not to argue for one agreed taxonomy, but only that researchers or reports define what they mean by terms central to their subject.

Lack of clear definitions may be a result of, or at least related to, an under-theorizing of causes, or explanations for why some spread programmes are more successful than others, or of why, within programmes, there are large variations between services in their uptake of the change. Developing theory to explain both the actions and the results of intentional spread requires precision in describing the actions taken and the intermediate results. More precise description then makes it possible to identify the differences between different approaches to intentional spread. The QI research which deals with spread programmes often does not penetrate more deeply than the surface appearance of a programme. The research is often descriptive and does not identify underlying assumptions and causal influences which may show two superficially similar programmes to be fundamentally different.

A different but related issue is uncertainty within QI about how much interventions proven to be effective can be adapted when applied in another setting and can retain its effectiveness. The predominant narrative is of the need for ‘fidelity’, or to suffer the consequences of an ineffective change. Yet at the same time there is another narrative of the need to adapt and test, not just for those changing to feel ‘ownership’, but to ensure the change can be implemented and is effective by ‘tailoring’ it to the local conditions and checking results. Many are unclear about which QI interventions or which aspects of the intervention can be, or need to be adapted, and about how best to do so. QI literature often fails to distinguish between the ‘adaptation latitude’ in the content of the change and keeping the content the same but adapting the change implementation method which was used at the pilot or research site.

Terms used in this paper

‘Spread’ and ‘scale-up’ are used interchangeably in QI research, and there are no generally agreed definitions of the terms. ‘Scale-up’ tends to be used in international health, and ‘spread’ when referring to ‘improvement changes’ in high-income countries. Similarly, the terms ‘approach’, ‘strategy’ and ‘method’ are used interchangeably to describe ways to achieve an objective or to carry out a task without distinguishing levels of abstraction or levels of the health system to which each apply.

In this paper ‘approach’ is used in an abstract way to describe a set of assumptions, often not explicit, underlying a distinct way of progressing a change in health services and communities—three such approaches are identified later in this paper. ‘Strategy’ is used less abstractly to refer to a type of programme, with a structure for, and ways of progressing a change across many providers. One recent document notes 11 such strategies (but calls them ‘approaches’): Natural Diffusion Approach, Executive Mandates, Extension Agents, Emergency Mobilization, Affinity Group Approach, Collaborative Approach, Virtual Collaborative, Wave Sequence Approach, Campaign Approach and Hybrid Approaches [10]. ‘Method’ is used in this paper to describe a specific ‘tool’ like a flow diagram or a guide for practical steps, like a plan–do–study–act cycle [11].

Focused vs. generic changes. The aim of this paper is to contribute to new strategies and methods for faster and lower cost ‘widespread focused improvement uptake’. The term ‘focused improvement uptake’ (FIU) is here defined as, ‘the adoption, and sometimes adaptation, of a specific intervention intended to improve health and/or reduce the costs of health care’. This involves spread beyond one situation of proven or promising treatments, treatment combinations and service delivery models, which also includes models for delivering health promotion service. It also refers to the uptake in health service organizations of the use of a generic improvement method or process, such as the ‘model of improvement’ [11] or of an inspection or accreditation programme [12].

The term ‘focused’ is used to distinguish these changes from more general health care reform changes. The latter changes often involve infrastructure to support service providers or patients, for example through developing health information technologies. Strategies for achieving more widespread use of a treatment, a treatment combination or a service delivery model (‘focused changes’) may be different from those used for generic health or health care reform or infrastructure changes. One reason is because ‘focused changes’ may affect and require more active involvement of health care professionals than the more generic changes. Another is that methods and strategies have been developed, largely through the QI movement, for spreading these specific changes, and which are different from those typically used to implement health reforms.

The term ‘uptake’ is used rather than ‘spread’ to emphasize the choice and discretion which providers have about whether to adopt the treatment or service delivery change. ‘Spread’ and ‘scale-up’ tend to imply a directed ‘push’ approach to change. ‘Uptake’ also implies that providers often adapt the change, regardless of whether others think they should do so. It opens up the question of how much the content of the change—the treatment or service delivery model—can be altered to suit the local situation (‘adaptation-latITUDE’) and whether this will reduce or indeed increase its effectiveness: the question of ‘fidelity’ in implementation [13].

Three approaches to wide-scale focused improvement

The international health literature provides a wealth of research and experience in spreading proven treatments and service models. One of the many useful evidence-based models is shown in Fig. 1. From research reviews and from international experience, the author of this paper identified three approaches to spread, each with distinctive assumptions
about how best to achieve widespread change [8, 9]. These are presented here to contribute to research and theorizing about which approaches are suited to which types of changes in which situations. They could also help practical decisions about selecting, planning and carrying out scale-up and spread of improvements.

‘Hierarchical control’

The international literature especially up to the mid-1990s, conceptualized spread as being a directed, controlled approach, led by ‘implementers’ who identify a practice or model effective in one place and seek to change others to use this practice or model. This is the traditional approach used by ministries of health or large NGOs, which delegate and direct lower regional levels and facilities under their control to carry out specific changes. The decision to adopt the change—a new treatment or service delivery model—is made at the highest levels, often after professional advice, and sometimes after assessing the resource implications. Lower levels are then tasked and held accountable in different ways for making the change. Most programmes have sought to provide relatively detailed models, required changes and compliance to these models by ‘target’ sites or areas, and held local officers to account for making changes in planning and performance reviews, sometimes supervised by central experts.

One example of a complex and sophisticated approach is the Zambian Ministry of health strategy to scale-up reproductive health interventions, including expanding the range of contraceptive methods available at health facilities [14]. This is an example of a more recent variation of this top-down directed and controlled approach as it allows some adaptation latitude in implementation by local districts, but what can and cannot be adjusted is carefully specified. Districts were allowed to decide the detailed timing of the changes to reproductive services they were to make and to how they made them. One specific example was the two approaches for the ‘training of trainers’ which were allowed. One was the traditional classroom and the other an on-site self-directed learning programme supervised by routine visits from district staff. Technically, both gave equally effective instruction but the cost of the self-directed programme was less than half that of the classroom alternative. However, it was more time consuming, and depended on district supervisors having transport, which was not available in all districts. The classroom approach was fast and efficient, but providers had to leave their local health facilities. The phased intervention introduced districts to the two training approaches, and then gave them authority to decide which to use.

This controlled, planned and prescribed ‘push’ approach is resource-intensive and can be effective for some changes in some situations. Even those programmes which specify and allow adaptation latitude do have limitations, for example, often in not developing capacity locally to adapt the change where this is necessary. Also appropriate decision latitude can ‘creep’ into local over-adaptation and less effective change, and the careful follow-up, an accountability that is required to control this, may often be missing: routine supervision and regular performance reviews are often underdeveloped in low-income settings, often as a result of lack of transport. Finally, it does not fit in with some modern ideologies of democracy and of provider and community ‘participation’ which have become more prevalent in international health and governance.

‘Participatory adaptation’

This is possibly the most common approach to focused improvement in international health, used by ministries of
health in relation to their public services, and by NGOs and in some for-profit providers. It is more decentralized and participatory, but retains accountability and a belief in rational planning. The change in some NGOs and a few ministries towards this approach has been as much driven by democratic ideologies as it has by recognition of the limitations of the controlled, planned and prescribed approach. The movement to this approach coincided with international development agencies promoting local community participation, decentralization, gender equity and human rights in their programmes. There was still the idea of one or more exemplar models which performed well and which, if copied by others, would bring improvements in services and health elsewhere. The difference was in giving less prescription of the details of the model, more emphasis to principles and examples, and in providing support to local regions, districts and communities to adapt the model locally.

One example is the Community-based Health Planning and Services initiative in Ghana [15]. The model aimed to reorient primary healthcare from clinics to communities, by relocating nurses to live and work in community-constructed clinics and using volunteers to get community support. The scale-up strategy used decentralized planning to adapt the operational details to local circumstances. The study notes actions which helped to overcome constraints to scale-up by comparing slow and faster implementing districts. One was to use peer exchange to discuss the details of practical changes which would be needed and to use the original pilot as a demonstration model for visits. This is combined with training for upgrading clinical skills, new referral arrangements, quality assurance and community-based health management.

The study notes that scaling-up spreads within districts once the initiative gets started in one or two zones, but spreads slowly across district boundaries, and did so mainly because of staff exchanges. So within and across districts the involvement of leaders from neighbouring communities was necessary. It also notes the resource constraints problem of scale-up, where often fewer resources are available than were used in the pilot. The ‘faster’ districts had found additional funds, usually not from government, for example by means of ‘private practitioners’ who were paramedics who were community-financed rather than salaried employees.

Other examples show the greater latitude and multi-stakeholder participatory approach to planning and implementation of this approach, which also involved a different approach to accountability. The latitude was necessary to involve different stakeholders in planning and contributing some part to the change, because of recognition that one model often needed local adaptation and systematic participatory planning, using methods like participatory Logframe [16]. Logframe plans also allow accountability because they need to be made by specifying both the detailed indicators and methods for collecting indicators in order to monitor progress. Accountability to funders was then provided by requiring annual reviews of the plan for spread, and a documentation of progress and of adjustments to the plan. In some NGOs, this documentation was entered into Internet-based knowledge management systems, which then allowed other programmes in other countries to find and use improvements which were assessed as successful elsewhere.

**Facilitated evolution**

During 2000–2005 a new model emerged, not well documented in the literature, but which drew on a combination of system theory and resilience theory, the latter referring to ‘the capacity of a social-ecological system both to withstand perturbations from climate or economic shocks and to rebuild and renew itself afterwards’ [17, 18]. This approach emphasized creating conditions under which ‘take-up sites’ are able to find, adapt and develop practices and models of care which address the challenges they face. The emphasis is less on the implementers ‘targeting’ spread sites, but more on how different districts can define their problems and search for ‘packaged solutions’. The aim is to provide capability and ways for districts or sites to match their problems to different practices and models which could improve their services. It demands and supports a set of attitudes towards making local improvement for specific locally experienced problems and more skills and capacity in local areas and in facilities to do this. It is a 180-degree switch from demanding compliance to detailed prescriptions, to taking an initiative, but still requires accountability through showing the results of the initiative and impact on health, all of which may not be feasible.

One example is how an Adventist Church Development Agency (ADRA) Uganda Bunya HIV/AIDS/reproductive health community development programme has been taken up by other programmes in Uganda, and similar programmes in Zambia [19]. The original model was a multi-component programme, developed and then supported and coordinated by an ADRA project team in one district. The aim of the programme was to prevent HIV/AIDS and care for AIDS patients in the poor rural villages of one small area. Previous experience had found that HIV/AIDS prevention and care was best achieved by community development which provided women with independent income and involved many activities within and supported by the community. The project team role was to motivate and support village and church leaders to take different actions and provide other resources, and how they did this was documented.

Evaluations found the project to be successful and showed how it could be adopted elsewhere by similar project teams, staffed by local people trained in the ideas and able to take a flexible approach to working with their communities. These staff worked to establish demand within the communities for micro-finance and other aspects of the programme which could be locally resourced, and to provide local leaders with the materials to meet these demands, as well as local structures for local direction and planning which were sustainable after the project staff had provided their initial input [19]. The structure and strategy to spread the model was based on local government and health care management taking over the supervision and working with the development agency to train other districts.

This approach to ‘Facilitated evolution’ also recognizes that significant social and environmental changes are likely, such as famine and drought, conflict and changes of
government, all of which occurred in both the pilot and the spread programme. As in high-income countries, ‘environmental changes’ will demand radical adjustments to the plan for making an improvement change, and will require many stakeholders to contribute to the adaptation. This facilitated, a co-creative, reflective, evolutionary approach or ‘innovation’ [2] and at the local level requires a particular kind of support from resource groups different from the more directive ‘support’ of the two other spread approaches above. It required different types of incentives and accountability for the local programmes and units, and is more suited to changes and situations where the spread is more of an initial idea that will develop in ways which are difficult to imagine (i.e. has ‘high adaptation latitude’ in content and in the implementation method).

The above summary of three approaches implies that there was a complete transition over the years from one approach to another in all international health, and for all types of scale-up programmes, which was not the case. What it does highlight is that there are different approaches, that one approach may be more suited to one situation or type of spread change than another, and that there are choices to be made about the broad approach to be used, and then choices with these about methods and structures and other details. It also shows the increasing recognition that, for some changes, there is value in and methods for involving a number of parties and the community in designing and carrying out spread strategies, especially if the improvement change is to be seen as an evolving change with accountability for results rather than for activity.

Lessons for spreading QI for high-income countries from research into scale-up in international health programmes [8, 9].

• There is no evidence from research, and there may never be, for making detailed prescriptions about how to spread all types of improvement successfully in all situations.
• Overall, scaling-up is a complex enterprise, within many interacting forces, which must engage many interest groups and organizations, and take account of the political, cultural and institutional context.
• Most scaling-up required a package of interventions, rather than a single new approach or model, and often demands a significant degree of change in the way health services and systems function.
• Scaling-up is an ‘institution-building process’, which takes time if the change is to be sustained, but funders and policy-makers are impatient for results. Institutions and services require ‘considerable nurturing to learn how to function in new ways’.
• Scaling-up requires support from a ‘resource team’, which helps governments and other actors to find ways to bring about change.
• The innovation, the resource team, the user organization, the environment and the scaling-up strategy interact with each other in complex ways: strategies need to ensure congruence among the elements of scaling-up through regular or special vertical and horizontal coordination structures.

Possible ways forward for wide-scale focused improvement

The reviews of research noted above show that the methods and strategies for scale-up are many and various [8, 9]. Some studies have documented strategies which have achieved significant spread, and some equally valuable studies have found mediocre or patchy results in scale-up programmes and provide some explanations for this. As with research into large-scale changes in high-income countries, the research in international health has its limitations: first, in being able to attribute results unambiguously to the scale-up programme, secondly, in providing valid explanations about which context factors were critical to success or failure and thirdly, in providing generalizable knowledge. However, scale-up in international health can contribute experience and evidence for achieving more rapid QI spread, and suggests directions for research into the subject.

First, it is possible that the spread of some types of improvement changes may be best carried out by a top-down directed and prescribed implementation, with detailed accountability or inspection for control. Other types of improvement change might be better viewed as principles, not prescriptions, allowing or requiring adaptation and using a participatory planned approach, but with regular reviews and corrections, led by experts. The third approach noted above was to think of the spread initiative as ‘facilitated evolution’, where it is likely that there will be radical changes to the context. This would require leaders to be actively involved in regular reviews and local corrections to plan. Here the spread approach is more about creating the incentives and enabling conditions for sites or units to improve, with the focus on facilitating adoption and adaptation, rather than on driving ‘targets’ to make a prescribed change. Decision-makers could be helped by research which produced a typology of improvement changes, showing which changes are best spread by which approach and strategy, based on the evidence to date and/or which showed the gaps in empirical research which may not make it possible to do this.

Secondly, it is notable that some international health scale-up strategies have been successful as a result of the help given by researchers when they have used an action and collaborative research approach [20, 21]. The researcher’s practical value appears to have been in giving to those making the change independent documentation and data about progress and consequences. Also, researchers provide an analytic capacity to diagnose causes of lack of progress and possible ways forwards, which are then used as hypotheses for testing. Similar collaborative, action, participatory or embedded approaches to research in health care improvement might provide both new knowledge and more effective change than traditional ‘independent researcher’ approaches as is shown by some USA ‘QUERI’ programmes [22].

Thirdly, in international health Logframe planning methods are ‘standard industry practice’ for any scale-up programme, and are used for all of the three approaches to
wide-scale focused improvement noted above [16]. This is a method which, when carried out using a workshop process involving those making the change and beneficiaries, provides a way for surfacing assumptions about which changes will lead to which results, and also identifies indicators of progress. Subsequently, other sites or services seeking to make similar changes find the documented Logframe model of a successful pilot an essential starting point for understanding what needs to change, and for making their adaptations. In effect, the Logframe is a logic model or programme theory [23]. Using such methods would allow health care improvers to understand the principles and how the change works, and then better adapt it to their situation, rather than mimic-copying changes which actually need local adaptation to succeed.

Fourthly, there is a debate about how strong the evidence of effectiveness of an intervention needs to be before large-scale programmes are started to spread the intervention. The concept of ‘adaptation-latitude’ about content and about the implementation method could contribute positively to this debate. An approach to large-scale spread which demands an exact copy of both the change and the implementation method may prevent local testing and adaptation. If the discretion latitude is made clear, then the local implementer’s adaptation and testing can contribute to the development of knowledge about when and where the change is most effective and about how it can be modified for different circumstances.

One answer to how strong the evidence needs to be is, ‘proportional to the benefits, risks of harm, costs and the ease of the change’ [2]. The international health field has many examples of treatments or service models which have the potential to save many lives and where there is good knowledge of side effects, and where one year’s delay in ‘roll-out’ can be counted in thousands of lives lost [24]. If there are low risks and costs, and the change is easy to implement compared with the potential benefit, then the evidence of effectiveness does not have to be as strong as for a high-cost change or one with risks of harm. Indeed, if benefit is likely to be high, then there is an ethical case that the burden of proof should lie with those opposing the change rather than those proposing it because of the potential lives lost before research establishes more knowledge about effectiveness.

Conclusions

The aim of the paper was to contribute to thinking and practical decisions about spreading quality and safety improvement changes and methods. It drew on research into scale-up of treatments and service models in international health to describe ways of conceptualizing spread strategies and to show some of the evidence from research which is relevant to spread in high-income countries. A checklist for planning improvement spread based on this research is available [25].

One conclusion is that researchers could more precisely define what they mean in their study by such terms as ‘spread’, ‘scale-up’, ‘approach’ and ‘strategy’ because this would help communication and cumulation of knowledge. This paper used the term ‘uptake’ to emphasize the choice and discretion which providers have, and proposed that research could usefully pay more attention to defining which aspects of a change could be adapted and which need to be copied exactly. The concept of ‘adaptation-latitude’ about content and about the implementation method, and the concept of ‘proportionality of proof’ could contribute to the debate about ‘premature spread’ of ‘unproven’ interventions and to discussion about different standards of evidence for different types of interventions. It could allow more use of adaptive testing in different situations to contribute to QI knowledge, if the adaptations and results were documented in a standardized way and made easily accessible; this would require a development of ‘experience-exchange’ databases for project reports [26, 27].

The paper concluded that three approaches to spread may be identified and these can help to distinguish important differences between programmes which appear similar but are based on different assumptions about how changes are best spread. Future research might usefully examine whether one approach might be more effective than another for spreading certain types of change in different situations. More generally, examples, research methods and experiences from scale-up in low-income countries with few resources and underdeveloped infrastructure can contribute to the much needed knowledge and practical insights for higher income countries.

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