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EVIDENCE AND EVALUATION GUIDANCE SERIES

# Increasing the Scale of Population Health Interventions

## A Guide

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The NSW Ministry for Health acknowledges the traditional custodians of the lands across NSW. We acknowledge that we live and work on Aboriginal lands. We pay our respects to Elders past and present and to all Aboriginal people.

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SHPN (CEE) 230982
ISBN 978-1-76023-708-0

December 2023

Suggested citation:
Centre for Epidemiology and Evidence. *Increasing the Scale of Population Health Interventions: A Guide*. Evidence and Evaluation Guidance Series, Population and Public Health Division. Sydney: NSW Ministry of Health; 2023.

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# Introduction

In order to achieve population-wide health improvements, population health interventions found to be effective in a research setting need to be implemented as widely as possible. This involves a change of scale or a scaling up of the intervention.[1] Scaling up such interventions is necessary to ensure the target population has access to the most effective services and programs available.

However, not all interventions shown to be effective in a research setting are suitable for scaling up. The scalability of an intervention is not only determined by its effectiveness but other key issues such as the likely reach and adoption of the intervention, the costs of operating at scale, and the acceptability and fit of the intervention with the local context.[2] It is important that attention is paid to the scalability of an intervention, so resources are allocated to interventions that are more likely to be successfully scaled up, and therefore more likely to have an impact on the health of the population as a whole.

Scaling up is also more likely to be successful if a systematic approach to scaling up is adopted from the outset.[3] Such an approach is required to help policy makers and practitioners address the substantial challenges faced when interventions are scaled up.[3] For example, the same human, technical and financial resources available in the research setting in which the original intervention was tested may not be available when the intervention is scaled up.[3] The intervention will need to be implemented in the 'real world' where few existing support systems may be in place and other pressing priorities and competing interests need to be considered.[1,4] In addition, the context in which the intervention is scaled up is likely to be highly political, rapidly changing, and influenced by a variety of factors, inputs and relationships.[2] Under such circumstances, successful scaling up calls for careful balancing between achieving desired outcomes and implementation constraints.[3] It also requires an implementation process that uses and engages existing health system capacities, wherever possible, rather than imposing additional requirements and burdens on the system.[4] Finally, the process of scaling up requires ongoing monitoring and the flexibility to adjust to changes in the political, social or organisational context.[1]

However, at the current time, few policy makers and practitioners have skills in and knowledge of scaling up methods.[3] Further, there are relatively few examples in the published literature where the steps and considerations involved in scaling up an intervention are described.[3,5,6] As a consequence, population health interventions found to be effective in a research setting remain under-utilised by the field of population health.

This guide seeks to address these issues by describing a step-by-step process that includes both an assessment of the scalability of an intervention and a description of how to proceed with scaling up in order to have the greatest chance of success.

# How to use this guide

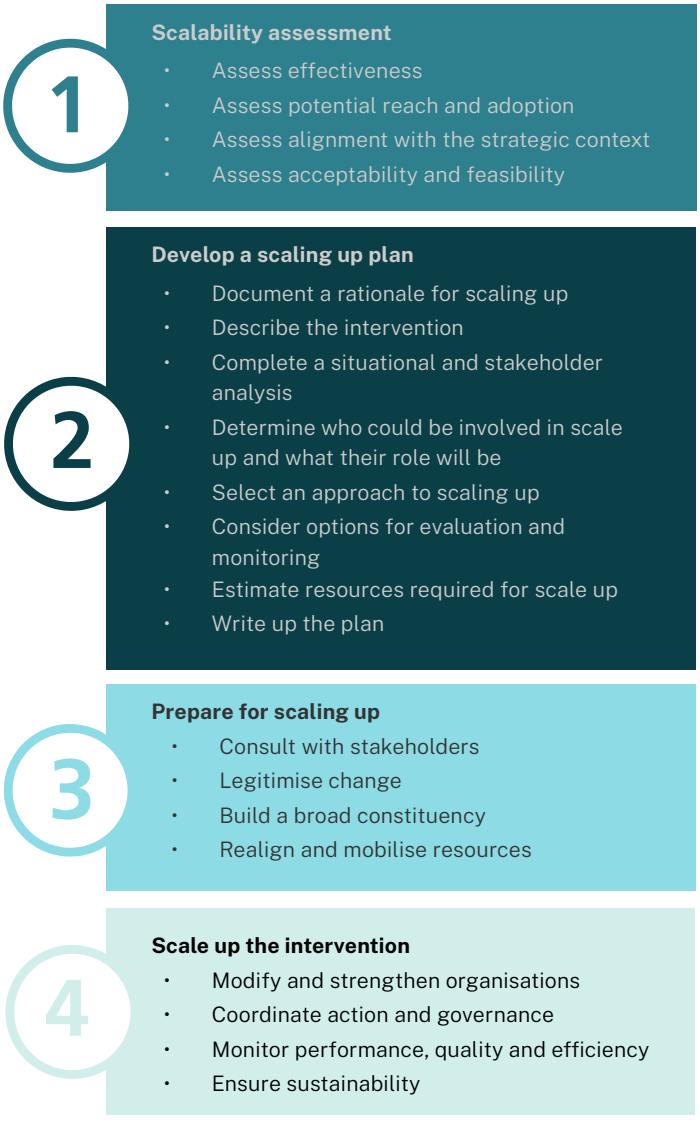
The guide describes a 4-step process for scaling up interventions. **Step 1** is to complete a scalability assessment to assess the suitability of the intervention or interventions for scaling up. The outcome of this assessment will determine whether the remaining steps in the guide should be followed. **Step 2** describes how to develop a scaling up plan which should create a vision of what scaling up will look like and a compelling case for action. **Step 3** describes how to prepare for scaling up by securing resources and building a foundation of legitimacy and support for the scaling up plan. Finally, **Step 4** describes some of the main tasks that should be addressed during scaling up.

The guide is written in a linear way, as if the user is starting from the point of assessing the scalability of an intervention. However, the entry point for each user may vary. For example, the latter steps in the guide could be used by those already involved in scaling up interventions to reflect on and review their current implementation processes. It may also be necessary for all users to revisit earlier steps in the process to find solutions to problems that arise during scaling up. At each step in the process the project team will be required to make decisions that are not always clear cut; some judgement on the part of the project team is required. These decisions may result in revisions to the scaling up process and changes in direction over time. It may also be necessary to discontinue the scaling up process if a way forward cannot be found, or desired outcomes are not being achieved. If such a decision is made, an exit strategy should be implemented that includes management of likely risks for all key stakeholders. Ultimately, scaling up is a significant process that requires time and resources to ensure that it is managed successfully.

The guide has grown out of experience in the field of population health and as such is written from a population health perspective; however, the core concepts within the guide could be applied to other human service endeavours. It is designed to be used by health practitioners, policy makers, and others with responsibility for scaling up evidence-based population health interventions. It has been written primarily for use within the public sector in high resource environments but could also be used by non-government organisations tasked with such processes.

The guide may also be useful to researchers. For example, the scalability assessment may assist researchers to design research studies that are potentially suitable for scaling up, particularly in circumstances where research-practice collaborations are encouraged. Step 1 could also be used to identify research gaps, and guide researchers towards seeking funding to address such scalability information gaps. Similarly, this guide may be used to assist researchers to present intervention research findings, so the information necessary for health practitioners and policy makers to assess the scalability of an intervention is available. In addition, the later stages of the guide can be used by researchers to identify opportunities for partnering in evaluation and monitoring efforts when interventions are scaled up.

**Figure 1. Steps in the scaling up process**



# Step 1: Scalability assessment

The aim of Step 1 is to determine if the intervention is scalable. In doing so, the user should consider a variety of information sources, including published research, grey literature, expert advice, and practice-based knowledge. It may not be possible or relevant for the user to answer all of the questions posed as part of this step. If information is missing, a judgement is required about whether these gaps are relevant, or whether they would have little impact on the overall scalability assessment, whether the gaps can be addressed during implementation, or whether further research is required before scaling up the intervention can be recommended.

This step can be used to gather information about the scalability of a particular intervention. It can also be used to compare and contrast a number of different interventions being considered as part of a planning process. Alternately, it could be used as a tool to identify gaps in knowledge around the scalability of an intervention which could then be used to build a case for further research to address these gaps.

### 1.1 Assess effectiveness

The key prerequisite for scaling up a population health intervention is that it is effective.[1,3,6] Ideally, evidence of effectiveness should be provided from randomised controlled research trials (RCTs); however, it is increasingly acknowledged that evidence of effectiveness for population health interventions can be derived from a broader range of research designs including stepped wedge, multiple baseline, and quasi-experimental designs.[7] The type and amount of evidence available about the effectiveness of the intervention should be noted in the decision making process—the less uncertainty about the results the better.

It is also important to consider whether the effect size of the original intervention is known and whether this is likely to be policy significance. The policy significance of the intervention is critical in determining the likely benefits of scaling up the intervention for the population (e.g. reduced mortality and morbidity) and also the likely benefits of scaling up the intervention to the funder (for example, reduced costs of greater efficiency).

It should be noted that **the effectiveness of interventions may attenuate as they are scaled up**; therefore, relatively large effect sizes should be demonstrated in the efficacy stage, if an acceptable level of effect is to be maintained when interventions are scaled up.[1] This reduction in effect size is due, in part, to difficulties maintaining the dose and fidelity of the original intervention in real world settings, and the selected nature of participants or communities involved in research studies. It is rare for interventions to remain unchanged as they are scaled up due to the need to adapt interventions to suit the local context.[1,6] Cost can also be a major factor that drives the need for adaptation. Therefore, the adaptability of the intervention should form part of the scalability assessment. To make this assessment, it is important that the key elements of the intervention are understood, including which components are essential in order to maintain effectiveness.

The scalability assessment should also determine whether a differential effectiveness across target groups and/or socioeconomic status (SES) has been shown.[1] This is important, as interventions can be highly effective among target groups that need them least (e.g. high SES populations with low risk profiles) and ineffective in those that need them most (e.g. low SES populations with high risk profiles).

For example, a recent meta-analysis of RCTs concluded that lifestyle-based diabetes prevention programs were effective in reducing progression to type 2 diabetes.[8] However, subsequent less intensive, 'real-world' intervention replication trials targeting different populations yielded much smaller effect sizes for key diabetes prevention related outcome variables.[9,10]

The final part of the effectiveness assessment is an examination of any unintended consequences and adverse outcomes. Interventions should aim to minimise such adverse outcomes before being scaled up and, in extreme instances, may be abandoned altogether if the outcomes are too adverse.[1]

**Key questions**

- Is the intervention effective and how strong is the evidence?
- What is the effect size of the original intervention? Is the effect size of the intervention likely to be of policy significance?
- Are the benefits of the intervention likely to outweigh the costs?
- Can the same dosage, fidelity and effect of the original intervention be maintained in the real world within acceptable costs?
- How adaptable is the intervention? Is it likely that the key elements of the original intervention necessary to maintain effectiveness can be retained when it is scaled up?
- Is the intervention likely to have differential effectiveness across target groups and/or socio-economic status?
- Is the intervention likely to have unintended consequences or adverse outcomes?

## 1.2 Assess potential reach and adoption

Reach refers to the level of contact with or individual participation of an intended target population in an intervention,[11] while adoption is the proportion of intended intermediary target settings, practices or organisations (examples may include schools and workplaces) that adopt an intervention,[11] before proceeding to implementation with the intended target group. Both reach and adoption are at the heart of scalability.[1] Some interventions by their very nature and intended target audience can reach a greater proportion of the population, while others may be specifically designed to target relatively small segments of the population. What is important is that interventions reach as large a proportion of those eligible to receive them as possible when they are scaled up. Similarly, it is important that interventions are adopted by as large a proportion of eligible settings as possible. In addition, it is important to determine whether an intervention has differential rates of reach and adoption across target populations and/or settings.

**Key questions**

- What is the likely reach of the intervention per eligible population when scaled up?
- What is the likely adoption rate by intermediary settings and organisations?
- Is the likely reach and adoption of the intervention extensive enough to have a population impact?
- Is the intervention likely to have differential rates of reach and adoption?

### 1.3 Assess alignment with the strategic context

For interventions to have the best chance of being scaled up, it is important they are aligned with policy priorities.[3,12-14] Even highly effective interventions may struggle to attain funding for expansion if they do not address a pressing and persistent problem or if they are not aligned with the priority areas of funding agencies.[1,6]

It is also important that the context within which the original intervention was implemented is comparable to that of the new environment or setting, particularly if contextual factors (e.g. literacy, income, cultural values, access to media and services, skill and experience of the workforce) were important to the success of the original intervention.[15,16]

Also important is the alignment of the intervention with the broader strategic context of the new environment or setting.[6,12] That is, the social, organisational and political context in which the intervention will be implemented.[16] In addition, the intervention should be compatible with roles, other practices and interventions in the new setting.[1] A potential intervention should complement existing interventions and if it is similar to existing interventions there must be evidence that it is superior to current practice before it is considered for scaling up.[6]

**Key questions**

- Is the intervention consistent with national, state or regional policy directions?
- Will the intervention address an identified need of funding agencies?
- Is the context within which the original intervention was implemented comparable to that of the new environment or setting in which the intervention will be scaled up?
- How well will the intervention align with the broader strategic context within which it will be scaled up?
- Is the intervention compatible with similar interventions in the same setting?
- Is the intervention superior to current practice?

### 1.4 Assess acceptability and feasibility

An important consideration for scalability is a broad assessment of the 'do-ability' of the intervention. A judgement is required about whether it is conceivable that the intervention could be scaled up given what is known about its costs, workforce requirements, infrastructure requirements and acceptability to stakeholders. Another factor to consider is how long the intervention is likely to take to implement and how this relates to the type and length of funding that might be available. Whether the intervention is acceptable to stakeholders may be determined by assessing how acceptable the original intervention was to the stakeholders involved at the time (if the stakeholders will be similar to those that will be involved when the intervention is scaled up) or by conducting a preliminary or informal consultation process with key stakeholders likely to be involved in scaling up the intervention.

**Key questions**

- What organisational, technical, human and financial resources were required to deliver the original effective intervention?
- How ready is the current system to accommodate these requirements at scale?
- Is the intervention likely to be acceptable to target groups and other stakeholders when scaled up?
- Are the potential costs of the intervention at scale likely to fit within the budget that may be available?

# Step 2: Develop a scaling up plan

The aim of Step 2 is to develop a practical and workable scaling up plan that can be used to convince stakeholders there is a compelling case for action.

## 2.1 Document a rationale for scaling up

The rationale for scaling up the intervention should be drawn from the information gathered in Step 1, although further investigation and analysis may be necessary to document a comprehensive case for action.

**Key questions**

- Has the information gathered during Step 1 been systematically documented?
- What gaps are there? Is there parallel evidence (e.g. related to similar interventions that can be used as part of the documentation)?
- Is any further consultation or research required?

## 2.2 Describe the intervention

This is a detailed description of 'what' will be scaled up. The description should be drawn from the available information about the key characteristics and components of success of the original intervention. This information may come from a single study or may be drawn from multiple studies of similar interventions (e.g. studies included in a systematic review). While the elements of the intervention that are essential to maintain its effectiveness must be retained, where possible the original intervention should be simplified and streamlined. It is usually necessary to adapt the original intervention to suit the context within which it will now be implemented. However, any changes to the intervention that may impact on its effectiveness should be carefully considered. Simplifying the original intervention also assists in clearly communicating the objectives and elements of the intervention to stakeholders.

**Key questions**

- Have the objectives of the intervention been clearly described?
- Have the target group(s) of the intervention been clearly described?
- Have the key elements of the intervention been described in as simple a manner as possible?
- Have the elements of the intervention essential to maintain its effectiveness been retained?

## 2.3 Complete a situational and stakeholder analysis

This step involves examining the political and environmental context to determine what conditions, organisations, groups or individuals are likely to affect the prospects of scaling up the intervention.[3] It should draw on the information gathered as part of Steps 1.3 and 1.4 but requires a more comprehensive analysis of these issues, including an analysis of who the key stakeholders involved in scale up may be and their readiness and support for scaling up the intervention.

For example, a situational and stakeholder analysis was completed as part of the development of the Get Healthy Information and Coaching Service, a free telephone-based physical activity, nutrition and healthy weight coaching service offered by the New South Wales Government. This analysis acknowledged that the NSW Government had provided in-principle support to a telephone and web-based lifestyle intervention through the Australian Better Health Initiative. It also involved mapping the availability and accessibility of public and private telephone and web-based lifestyle interventions in the NSW market, as well as identifying likely stakeholders with an interest in such a service.[17]

**Key questions**

- Has the social, political and organisational environment in which the intervention will be scaled up been mapped?
- Have key stakeholders and where they fit within the social, political and organisational environment been identified?
- Have the key value positions of each stakeholder (interest, importance, influence) been determined?
- Have potential advocates and champions been identified?
- Have the organisations, organisational units or individuals responsible for key decisions regarding funding and implementation of scaling up been identified?

## 2.4 Determine who could be involved in scale up and what their role will be

Generally there are two main roles that agencies may play in scaling up an intervention, that of the originating organisation(s) and delivery organisation(s).[6] An originating organisation is responsible for commissioning and/or developing the scaling up plan and may also have high level oversight of its implementation. The delivery organisation takes up direct implementation of the plan. Delivery organisations may be newly created for the purpose of scaling up or they may already exist. In some instances, an agency can be both the originating organisation and the delivery organisation. Where a single agency with the capacity to implement the scaling up plan does not exist it may be necessary for the role of delivery agency to be shared by more than one agency. Alternately, or in addition to this, intermediary agencies may be engaged by either the originating organisation or delivery organisation to provide specific functions during scale up: for example, to evaluate the intervention, monitor quality standards, conduct workforce training, or deliver the intervention directly to the target group. Establishing effective partnerships to facilitate collaboration and coordination between all agencies involved is critical. To determine who might be involved in scaling up the intervention, and what their role may be, it can be helpful to map key tasks or functions required for scale up and then consider who might be best suited to provide these functions.

**Key questions**

- Have the tasks and functions necessary for scaling up the intervention been determined?
- Has the role the originating organisation will play in scaling up the intervention been defined?
- Have potential delivery organisations with appropriate organisational and implementation capacity, or the means to develop that capacity, been identified and matched with key functions? Is it likely that more than one delivery organisation will be required?
- Has the compatibility of the central mission, organisational culture, and values of the proposed delivery organisation(s) with the intervention — and the plan to scale it up — been assessed?
- Will it be necessary to engage intermediary agencies to complete specific tasks or functions? Which agencies may be suitable?
- Have partnerships that will need to be established or strengthened been identified? What mechanisms could be used to facilitate collaboration and coordination between those involved?

## 2.5 Select an approach to scaling up

There are two main approaches to scaling up health interventions: vertical and horizontal.[3] Scaling up using a vertical approach involves the introduction of an intervention simultaneously across a whole system and results in institutionalisation of a change through policy, regulation, financing or health systems change. This type of approach is usually managed by a central agency (e.g. national, state or regional government) rather than using a decentralised approach. The advantages of vertical approaches are that compliance is generally mandatory and such efforts are often accompanied by commitment from government and resources to support implementation. This means that implementation can occur fairly rapidly and can cover a large area quickly. However, this approach may limit opportunities to adapt intervention delivery to the local context or respond to local issues during implementation. There may also be limited opportunities to change or reverse the intervention overall if it is not working.

Scaling up using a horizontal approach involves the introduction of an intervention across different sites or groups in a phased manner, often beginning with a pilot program, followed by stepwise expansion, learning lessons along the way to help refine further expansion. This type of scaling up is sometimes referred to as expansion or replication. The horizontal approach is particularly useful when there is some uncertainty about the scalability of an intervention, or when resources are more limited. However, the success of the approach is dependent on the ability of those delivering the intervention to undertake and implement the necessary internal changes for scaling up, as well as obtain and sustain sufficient financial resources. These skills and resources are not always available at the local level.

These approaches are not mutually exclusive and often a combination of approaches is used to scale up interventions. Strategic choices about how scaling up is organised and how resources are mobilised need to be made that best suit the intervention and the agencies involved in scaling it up.

Examples of successful 'vertically scaled up' interventions include the introduction of mandatory seat belt legislation,[18] smoking bans in outdoor eating areas,[19] and the introduction of new health system financing models.[20]

Examples of successful 'horizontally scaled up' interventions include the step wise expansion of the effective falls prevention in older people intervention, Stepping On,[21] in local health districts across New South Wales,[22] and the expansion of lifestyle based diabetes prevention programs in community settings in the United States using a YMCA implementation model.[23]

**Key questions**

- Have the relative merits of one step vertical scaling up and stepwise horizontal scaling up been assessed, and an approach that is efficient and appropriate for the intervention been selected?

## 2.6 Consider options for evaluation and monitoring

It is important that an appropriate evaluative framework is built into scaling up from the outset.[1] Formative evaluation prior to scale up will be required to test the appropriateness and acceptability of the intervention with the target audience and other stakeholders (see Step 3.1). Subsequent evaluation and monitoring efforts during scaling up should focus on the:

- process of scaling up the intervention and whether this is progressing as intended
- effectiveness of the intervention and whether this is being maintained over time
- reach or adoption rates of the intervention to determine if the intervention is having the intended population wide impact and factors influencing reach and adoption
- ongoing acceptability of the intervention to individuals and stakeholders
- ongoing compatibility with other interventions and the broader context
- cost of the intervention over time, including an assessment of marginal costs and cost effectiveness.

The emphasis placed on measuring each of these aspects during scaling up will depend on what is already known about the intervention (gaps in evidence identified in Step 1) and the approach to scaling up the intervention that has been selected. For example, if a horizontal approach is chosen there may be greater focus on the practicalities of implementation as well as the acceptability and effectiveness of the intervention as it is scaled up more widely. For vertical approaches the emphasis may be on measuring the processes and factors that lead to widespread reach and adoption across the target population or setting.

Options for how best to collect the necessary information should be considered, for example whether it is possible to incorporate data collection into routine intervention delivery or whether special studies to evaluate outcomes and impact will be needed. In addition, who could be involved in evaluation and monitoring efforts should be considered, including opportunities to involve independent third parties (for example, research institutions).

An example of such an evaluation framework is that developed to evaluate the New South Wales Get Healthy Information and Coaching Service (GHS). It details the data collection, measures, and statistical analysis required in assessing the process of implementation, reach and recruitment, marketing and promotion, service satisfaction, intervention fidelity, setting up and operations costs and in assessing the impact of the GHS on increasing physical activity, improving dietary practices, and reducing body weight and waist circumference.[17]

**Key questions**

- Have options for evaluating and monitoring the process, outcomes and impacts of moving to scale been considered and described?

## 2.7 Estimate resources required for scale up

It is necessary to estimate the human (for example, workforce requirements), technical (for example, materials, technologies, infrastructure, systems) and financial resources that will be needed to scale up the intervention in order to provide as much information as possible to decision makers about the potential cost of scaling up the intervention and to determine whether it is likely the intervention can be implemented within the budget that may be available.

**Key questions**

- Have the human and technical resources needed to scale up the intervention been estimated?
- Have the financial resources required for going to scale and operating at scale been estimated?

## 2.8 Write up the plan

The scaling up plan should summarise the thinking and analysis that took place during Steps 2.1–2.7. It should present a clear and concise case for scaling up the intervention as well as an overview of how this will be brought about. Ultimately the plan should create a vision of what scaling up will look like if successfully completed. Audiences for the plan can be both internal (for example, decision makers within the originating organisation) and external (potential delivery organisations, champions and other stakeholders). The plan should be written with this in mind. In some cases more than one version of the plan may be necessary.

**Key questions**

- Has a plan that creates a vision of what scaling up will look like and a compelling case for action been developed?

# Step 3: Prepare for scaling up

The aim of Step 3 is to secure resources needed for going to scale and operating at scale and to build a foundation of legitimacy and support that can help sustain the scaling up effort.

## 3.1 Consult with stakeholders

It is important that the appropriateness and acceptability of the scaling up plan to key stakeholders (including target groups for the intervention) is assessed before scaling up begins. Measuring appropriateness and acceptability will identify problems with the scaling up plan and identify potential barriers and enablers to scaling up the intervention, and is central to the design of effective advocacy and communication strategies. Often scaling up plans must be adapted to meet concerns raised by stakeholders through a process of negotiation.[6]

**Key questions**

- Is the scaling up plan acceptable to target groups and stakeholders? Has the plan been revised to better reflect stakeholders' perspectives?
- Do potential partners think the proposed plan is appropriate and workable?

## 3.2 Legitimise change

Legitimising change begins with gaining the support of decision makers. They must be convinced that scaling up the intervention is a credible and superior solution to a pressing problem for a population. It is vital to repeatedly demonstrate that the proposed intervention is effective and the plan for scaling up is both feasible and cost-effective. The plan developed during Step 2 is important for this purpose. Potential advocacy strategies include: policy briefs, engaging the support of opinion leaders and champions to act as spokespersons for scaling up the intervention, input into policy and budgetary processes, and establishing 'commissions' and advisory boards made up of key influencers. The need for change will be legitimised further once decision makers come to believe and assert publicly that change is necessary.[1,6]

The scaling up of breast feeding promotion and support programs in sub-Saharan Africa, Latin America, and Asia (Central, Pacific Rim, South, and Southeast) provides an example of how successful scaling up efforts have built on evidence informed advocacy that has led to impressive social mobilisation, political will, and eventually to hospital and community based breast feeding promotion policies and legislation (for example, WHO International Code of Marketing Breastmilk Substitutes, maternity leave legislation, breast feeding friendly work environments).[12]

**Key questions**

- Which 'champions' are most likely to be effective in promoting scaling up of the intervention to decision makers?
- What are the best ways to promote the merits of scaling up the intervention to decision makers, funders and opinion leaders?
- What arguments, communication strategies, or advocacy strategies are likely to be persuasive to potential champions and decision makers?

### 3.3 Build a broad consistuency

Constituency building complements and amplifies efforts to build legitimacy by going beyond engaging leaders and champions to mobilising the broader 'community of practice' required to successfully scale up an intervention. The aim here is to move from passive acceptance of the need for change to committed action in favour of scaling up the intervention. This can be a challenging process because it can be difficult to change the status quo.[1,3,6] Opposition generally comes from those who perceive they may be impacted adversely by scaling up an intervention due to a reallocation of resources.[6] To overcome this resistance, stakeholders must believe the change is legitimate, imperative, and the best solution to the problem, even if it requires the realignment of existing services and priorities. This can be done by organising stakeholder dialogues, working through peak bodies, non-government organisations, or social institutions and mobilising grass roots campaigns. Tailored stakeholder engagement, social marketing, and public relations campaigns targeting these audiences, can also be used to build support for change, as can the use of champions to add weight to these efforts.

**Key questions**

- How can buy-in from all key internal and external stakeholder groups be achieved?
- Which 'champions' are most likely to be effective in promoting the intervention to the community of practice?
- Which networks and alliances are likely to be the most effective advocates and how can they be most efficiently mobilised and organised?
- What other engagement and communication strategies are necessary to get potential partners and implementers to support scaling up?

### 3.4 Realign and mobilise resources

Funding for scaling up and for operating at scale is rarely in place at the start of scaling up efforts. These funds need to be mobilised through existing channels or through new funding streams.[6] In addition, the resource problem is not simply financial.[1,6] Often the organisations charged with implementing change lack the needed organisational skills and systems to successfully scale up an intervention. Therefore mechanisms to improve skills and develop systems to support implementation need to be developed. There is also a need to consider lateral responses, for example alternative workforces, to overcome human resource capacity constraints and high workforce costs. As noted in Step 2.4, a single organisation that has all the necessary capabilities for scaling up an intervention may not exist, so partnerships between organisations with complementary resources and strengths can be a synergistic way to provide the resources needed for the scaling up process.[1,4,6]

For example, many falls prevention exercise interventions originally designed in randomised controlled trials, to be delivered by allied health professionals,[24,25] have subsequently been successfully delivered by alternate workforces meeting appropriate competency standards at substantially reduced costs.

**Key questions**

- Have the skills, competencies and workforce required for scaling up been identified?
- Have competency sets and training systems been developed?
- Has the organisational infrastructure required for scaling up been assessed?
- Have the required information systems and performance monitoring systems been developed?
- Have the necessary partnerships been formed or strengthened?
- Have implementation protocols and resources been developed?
- Have the necessary new technologies, dissemination mechanisms or materials been developed and tested?
- Have potential funding sources been identified and funding secured?

# Step 4: Scale up the intervention

Scaling up involves putting the plan developed in Step 2 into place. In practice, implementation involves an ongoing process of detailed planning and organising, making adjustments, and contingency planning.

## 4.1 Modify and strengthen organisations

Building on the planning and priming actions described in Steps 2 and 3, there may be a need to further develop the capacity of participating organisations to undertake newly assigned roles. Most organisations will need to undergo changes in order to effectively participate in scaling up an intervention.[6] For example, the originating organisation may hand over responsibility for delivery of the intervention to others or expand itself to accommodate delivery. Existing organisations that will deliver the intervention need to determine what actions are required and how to accommodate these alongside their existing responsibilities. Newly formed delivery organisations have to develop entirely new systems and structures. In instances where more than one organisation is involved, these actions need to be coordinated and information and resources shared across organisations. This organisational change can be supported through processes such as staff retraining, mentoring, leadership development and coaching.[6]

To facilitate uptake of the intervention within the delivery organisation(s) it is essential to set up effective systems so knowledge about the intervention and how it should be delivered can be transferred between organisations (e.g. developing manuals and training of trainers). This transfer of knowledge may be affected by the culture, values and norms of the adopting organisation(s) so where possible the delivery approach should be changed or modified so it aligns with these values and norms.[6]

**Key questions**

- What changes need to be made in the 'delivery organisation(s)'?
- What actions are needed to transfer the requisite knowledge, skills and systems to delivery organisation(s) and to align these with their prevailing attitudes and values?
- Which organisations will be responsible for this transfer process and what changes do they need to make to their own capacity structure, staffing or operations to effect change successfully?

## 4.2 Coordinate action and governance

Building on the network of organisations engaged in the scaling up process, concrete and detailed agreements about how, when, where, and by whom resources are to be utilised must be established.[3-6] Programs need to be designed or redesigned, action plans need to be negotiated, and people and technical resources need to be deployed. This often requires managing across organisational boundaries so transparent and clear governance structures should be put in place to allocate roles and responsibilities. In addition, these structures should be used to overcome resistance to change and resolve any disputes that arise. The establishment of networks and coalitions to support those responsible for delivering the intervention is another mechanism that can be used to coordinate action.

**Key questions**

- Are action plans and budgets in place for implementing the scaling up effort?
- Have responsibilities been clearly allocated and efficient mechanisms established for coordinating the scaling up effort?
- Have governance structures for overseeing the implementation of the scaling up effort been put in place?
- Have responsibilities for monitoring these efforts and resolving any conflicts been allocated?

### 4.3 Monitor performance, quality and efficiency

It is important to track the implementation of the intervention and make adjustments if it is not producing the intended results.[1,3,6] As described in Step 2.6, monitoring systems should have an ongoing focus on measuring effectiveness, reach, fidelity, fit within the context, acceptability and costs, with a particular focus on the efficiency of the delivery of an intervention.[3]

Such monitoring systems should be established early in the scaling up process and must be credible and transparent. Even if an intervention is initially successful it does not mean that it will continue to be so. The quality with which interventions are implemented during scaling up can decrease over time and this can substantially reduce the desired outcomes and impacts. In addition, interventions must adapt to changing circumstances over time to continue to be effective, hence continued monitoring is vital. Also of critical importance is that performance monitoring systems include processes for quality improvement and providing information back to key influencers, decision makers, key stakeholders and the public.[1,3,6]

**Key questions**

- Are the costs of intervention delivery and monitoring being assessed?
- Are the marginal costs of delivering the intervention being assessed to determine if there are economies of scale or diseconomies of scale?
- Are systems in place to collect individual and stakeholder feedback on an ongoing basis?
- Are systems in place to monitor the ongoing acceptability and compatibility of the intervention with similar interventions in the broader context?
- Are systems in place to identify the extent to which the intervention is consistent with implementation protocols?
- Is the effectiveness of the intervention being reviewed periodically?
- Are measures in place to monitor the elements of the intervention essential to maintain the effectiveness of the intervention at scale?
- Has a cost effectiveness analysis been completed?
- Are there adequate procedures for documenting the progress, lessons learned and impact of the scaling up effort?
- Have effective mechanisms for ensuring this information is used for quality improvement and fed back to governance structures, key stakeholders and to the broader public been established? Is this information being used to make necessary course corrections?

## 4.4 Ensure sustainability

The ultimate aim of most scaling up processes is a sustained change in policy and practice. Most commonly this is achieved through implementing organisational changes to institutionalise an intervention so it becomes part of routine practice. This can be difficult to achieve using horizontal scaling up processes alone. Expansion and replication ultimately need to be supported by vertical approaches such as policy support and wide-scale realignment of budgets and resources.

Once the scaling up process has been fully implemented, efforts must turn not only to greater efficiency in program delivery, but also to maintaining stakeholder engagement and political support for the policy or practice change. Just because something has historically been funded and has enjoyed political support does not mean this will continue. Interventions must adapt to changing circumstances over time to continue to be relevant to stakeholders and intended target groups.[3] Hence, continually adapting an intervention to the current context and building the case for ongoing investment are vital.

**Key questions**

- Have strategies to ensure the intervention will be sustainable been identified and implemented?
- Is the data being collected through monitoring being used to support the case for continued or expanded funding?

# Conclusion

The scaling up plan developed and implemented through this four-step process should not be considered static. It will and should change as soon as scaling up is underway and activities should be adapted to fit the needs of the local situation or changing circumstances. Scaling up is a learning process, and changing the scaling up plan as learning proceeds is constructive and necessary. Despite the unpredictability of scaling up processes, a good plan can guide the scaling up process in the right direction and make success more likely. Moreover, learning requires systematic use of evidence. This is why it is essential that data from monitoring is linked to decision-making throughout the scaling up process. This guide argues that plans for scaling up need to consider a broad range of factors and balance what is desirable with what is feasible. Such strategic thinking must continue as the process moves from planning, to implementation, to sustainability.

# Key definitions

Acceptability refers to the degree of support for the intervention among stakeholders

Adaptability refers to the degree to which the intervention can be changed while still maintaining effectiveness.

Adaptation is the adjustment of the intervention for different target populations, localities and organisational factors.[26]

Adoption is the proporation of intended intermediary target settings, practices or organisations (examples may include schools and workplaces) that adopt an intervention before proceeding to implementation with the intended target group.[11]

Comparability refers to how consistent the context in which the original intervention was implemented is with that of the new environment or setting.[15]

Compatibility refers to how well the intervention fits with the systems, services and practices of the new environment or setting.[3]

Cost-effectiveness refers to the benefit or outcome received relative to the cost.

Cost-effectiveness analysis (CEA) provides ratios that show the cost (in monetary terms) of achieving one unit of health outcome.[27] CEA allows interventions or variants of an intervention approach to be ranked according to their (incremental) cost-effectiveness ratios.[28]

Differential effectiveness occurs where a difference in effectiveness is found across target groups or socio-economic status.[1]

Dose refers to the amount of intervention or service received by a participant or member of the target group.

Effect size is a measure of the strength of effect. It can be used to extrapolate the effect of an intervention to larger groups or populations.

Efficacy is how well something works in an ideal or controlled setting, such as a clinical trial; effectiveness describes how well it works under conditions that better represent the 'real world'.

Fidelity refers to the extent to which the implementation of the intervention is consistent with intervention protocols previously found to be effective.[29]

Marginal cost is the increase or decrease in the total cost of the intervention as the intervention is implemented on increasing scale. Marginal costs can be calculated once the fixed costs of implementation have already been absorbed and only the direct (variable) costs have to be accounted for.[1,30,31] When the average costs of program delivery fall as output rises, costs are said to exhibit economies of scale.[32] Conversely, when the marginal costs of program delivery are higher than the average cost, costs exhibit diseconomies of scale.

Population health intervention is a set of actions with a coherent objective to bring about change or produce identifiable outcomes for a whole population or population segment. These actions may include policy, regulatory initiatives, single strategy projects or multi-component programs intended to promote or protect health or prevent ill health in communities or populations.[16]

Reach refers to the level of contact with or individual participation of an intended target population in an intervention.[11]

Scalability refers to the ability of a health intervention shown to be efficacious on a small scale and/or under controlled conditions to be expanded under real world conditions to reach a greater proportion of the eligible population, while retaining effectiveness.[1]

Scaling up refers to deliberate efforts to increase the impact of successfully tested health interventions so as to benefit more people and to foster policy and program development on a lasting basis.[3]

Stakeholder is an individual or an organisation that can affect, will be affected by, or may have an interest in scaling up the intervention.

Strategic context refers to the social, organisational and political setting in which the intervention is implemented.[16]

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