**Implementation, Maintenance, Scaling Up, Sustainability (IMSS)
of Interventions, Multi-Intervention Programs and Multi-Component Approaches
A Working Paper**

Introduction

The implementation, ongoing maintenance or operation, scaling up and long-term sustainability (IMSS) of individual interventions, multi-intervention programs on various health & social topics and multi-component approaches has emerged as a primary concern in education, health promotion and social development. Implementation science experts and advocates have successfully introduced this change continuum and challenge as a key dimension of a more systems-focused paradigm and have provided numerous concepts and tools that can be understood and used more effectively in policy and program planning. This IMSS continuum is similar but different than other dimensions such as capacity-building, integration within education systems and better use of systems science concepts and organizational development tools.

This working paper is intended to describe the scope of IMSS work and potential strategies used as well as suggest that this cross-cutting theme needs greater attention in our policy/planning models as well as when we address any specific topic, population or context.

Here is a brief summary of what we know about IMSS. Each of the concepts underlined below and others need our attention and planned application in work.

*Planning for the* ***implementation, maintenance, scale up, sustainability of these multi-intervention approaches and programs*** *requires use of traditional, effective, operational planning steps such as* *involving stakeholders, selecting effective programs and* *using evidence-based and experience-tested implementation models and frameworks. Planners should also* *identify local barriers/drivers of change such as inter-organizational relationships, recent events and incidents. Planning should include considerations of scaling up, start-up and ongoing costs, succession of key personnel and sustainability from the start. A thorough understanding of the local situation, magnitude, complexity and the “fit” or congruence a between the planned interventions or approach with the local situation, the use of evidence-based and experience-tested planning tools and* *clarity about the intended outputs from different distribution, dissemination or diffusion (institutionalization) strategies are also required.*

Better practice advice can be summarized under these headings:

1. Begin with the end in mind: Sustainable multi-component approaches, multi-intervention programs or single intervention programs is the “end” that we need to keep in mind. Sustainability is indicated when the innovation is valued through written reports, structures, assigned staffing with titles reflecting the program or approach, logos, and rituals such as regular staff meetings or with terms being added to the organization's language. Sustainable change has defined roles, including a designated supervisor to receive reports, formal descriptions of tasks and jobs and manual of procedures or policies. Factors that promote sustainability[[1]](#endnote-1) include; the perceived advantages (social, economic, political) of the innovation or reform, the involvement of middle managers as champions, linking the long-term health or social goals of the project to short term educational benefits such as fewer class disruptions, formation of peer networks within the organization and making the content of the innovation interesting to students and educators. Achieving a critical mass of support (and ensuring a minimum level of ongoing support) by starting with early adopters and listening to the concerns of adopters and resistors is important in the early stages. Training of all relevant staff (not just educators) is important but only effective if it is provided to new staff and only if it is updated for existing staff. Using hybrid designs that embed implementation planning from the first planning steps is recommended[[2]](#endnote-2),[[3]](#endnote-3).
2. Be clear about your intended process and required resources: Clarity about the intended outputs that come from different distribution, dissemination or diffusion (institutionalization) strategies is required[[4]](#endnote-4). These strategies produce different results that may or may not be intended to be sustainable. Distribution, the strategy often used when resources are scarce, is a limited strategy that simply sends the materials to a set of intended audiences in a manner that is convenient to them. The distribution plan for a resource sometimes includes an ongoing publicity to maintain awareness about the resource. This level of activity will also usually have someone assigned to respond to inquiries. A dissemination strategy crosses the line into providing “customer support” but does not hire new staff or provide ongoing funding for new staff. In effect, a dissemination strategy relies on others becoming a champion and change agent on behalf of the new resource, innovation or idea. Diffusion or the institutionalization of a program or approach is a multi-stage strategy whereby the policy of program is considered part of the core business of the organization, with a budget line, place in the organization staffing chart, having personnel, facilities and equipment assigned to that named function with specific job descriptions and a developing institutional memory for important agreements and procedures. A review[[5]](#endnote-5) demonstrates that the costs of scaling up an intervention are specific to both the type of intervention and its particular setting. However, the literature indicates general principles that can guide the process: (1) calculate separate unit costs for urban and rural populations; (2) identify economies and diseconomies of scale, and separate the fixed and variable components of the costs; (3) assess availability and capacity of health human resources; and (4) include administrative costs, which can constitute a significant proportion of scale-up costs in the short run.
3. Consider the size, time and costs of the intended innovation or change to determine the time needed for implementation: Realistic estimates of the investments required for the policy, program or approach should be considered from the outset. A low-cost policy change such as regulating food sales in schools will likely take a year to develop with stakeholders and then 2-3 years to implement in a school system, with related changes to school activities such as fund-raising, sponsorship of sports events and classroom practices such as food rewards taking longer. A large cost intervention such as school meals can take 10-15 years to implement in a national system if the maintenance stage is to include local government funding (as opposed to external) funding and the provision of local grown foods. Building a multi-intervention program around an issue like food and nutrition can take 5-10 years before the different elements such as policy on school food environments, classroom and extended nutrition education, school feeding, school gardens and others are in place in most schools. Aligning multi-interventions within a multi-component approach such as Health Promoting Schools or the Essential Package on several selected issues will take even longer, especially if a multi-level approach involving the relevant ministries, local agencies/authorities and schools/ neighbourhood professionals is the goal. Start-up and ongoing costs of the intended policy, program or approach should be estimated and planned for in advance of starting. Further, the size of the change will shape the response from various systems. Local schools are open and adaptive to small scale, low cost “innovations” but education agencies and ministries are often resistant to large scale reforms that require them to change the balance between their academic, custodial and socialization functions.

Health ministries are similar and are often resistant to reforming the approach to health care services or to moving beyond “prevention” strategies on specific diseases to promoting community and organizational development strategies that are required for health promotion. Environment ministries often focus and organize their work and structures around specific environmental hazards or aspects of climate change. In most sectors, the reward systems, expertise, research, structures and organizational routines are organized around the urgent problems and less around the long-term solutions.
4. Assess the scope, complexity, fit/transferability of the intended innovation or change: The fit[[6]](#endnote-6) or transferability[[7]](#endnote-7) of an innovation or change can be measured and placed on a scale[[8]](#endnote-8). A thematic synthesis[[9]](#endnote-9) revealed 44 criteria, covered by 4 overarching themes, which influence transferability of health interventions: The population (P), the intervention (I), and the environment (E) represent 30 conditional transferability criteria, and the transfer of the intervention (T) represents 14 process criteria for transferring the intervention to the target context. Transferability (-T) depends on the dynamic interaction of conditional criteria in the primary and target context as well as on the process of transfer.
5. ![[Untitled]]()Use key, traditionally identified [implementation mechanisms](http://www.schools-for-all.org/page/Local%2BMechanisms%2Bin%2BImplementation%2B%28HS%29): These mechanisms are often described in various guides and manuals[[10]](#endnote-10),[[11]](#endnote-11). These include involving stakeholders from the outset, selecting evidence-based and experience-tested programs, securing the support of administrators, building staff and organizational competencies and other actions. Partnerships with academic centres is another effective tactic[[12]](#endnote-12).
6. Use evidence-based and experience-tested [implementation models & frameworks](http://www.schools-for-all.org/page/Using%2BEvidence-based%2BImplementation%2BModels%2Bin%2BSchool%2BHealth%2C%2BSafety%2B%26%2BSocial%2BDevelopment%2B%28HS%29)[[13]](#endnote-13),[[14]](#endnote-14),[[15]](#endnote-15),[[16]](#endnote-16),[[17]](#endnote-17): such as the Re-AIM[[18]](#endnote-18), Concerns-based Adoption, PRECEDE-PROCEED or the Consolidated Framework for Implementation Research. Several recent reviews have suggested the use of theory and models of “complex adaptive systems”[[19]](#endnote-19),[[20]](#endnote-20),[[21]](#endnote-21). Other researchers[[22]](#endnote-22),[[23]](#endnote-23),[[24]](#endnote-24) have examined the scope, nature and qualities of these theories and models. Several guides[[25]](#endnote-25),[[26]](#endnote-26) are now available. These approaches and guides can be adapted for low resource contexts[[27]](#endnote-27).

Identify [local barriers/drivers of change](http://www.schools-for-all.org/page/Local%2BDrivers%2Bin%2BImplementation%2B%28GT%29)[[28]](#endnote-28),[[29]](#endnote-29): Anticipate the possible interactions between the intended innovation/change, the local context[[30]](#endnote-30),[[31]](#endnote-31),[[32]](#endnote-32) and the processes that you intend to follow. These include such elements and aspects such as attributes of the local community, inter-organizational relationships, recent events and incidents, cultural factors, personal relationships among key individuals, the history and evolution of the problem and related programs in the country and more. The timing of the implementation, maintenance or scale up activities can be critical[[33]](#endnote-33). The attributes of the service or innovation being scaled, the actors involved, the context, and the scale-up strategy) and questions commonly addressed by Implementation Research IR (concerning acceptability, appropriateness, adoption, feasibility, fidelity to original design, implementation costs, coverage and sustainability) all need to be explored[[34]](#endnote-34). The timing of the implementation, maintenance and scaling up activities is also critical[[35]](#endnote-35). Begin with early adopters and encourage them instead of responding only to resisters. Take small practical steps with activities that show early results or early enthusiasm/support for the change.

1. Work through some of the ambiguities about Scale-Up (is it expansion of a single intervention? Or a comprehensive approach?) and challenges associated with “scaling up” approaches, policies and programs[[36]](#endnote-36) which tend to be iterative in nature[[37]](#endnote-37): These include a lack of technical consensus, limited resources, low engagement of local implementers and poor use of diffusion techniques. Lessons learned from successful scaling up activities[[38]](#endnote-38) such as using local evidence and experience, building institutional capacity, providing ongoing technical support when scale up involves complex interventions, integrating considerations of gender and equity issues into the process and ensuring ongoing feedback and formative assessments. Clarity in defining the scalable unit within the organization[[39]](#endnote-39) is critical – for too long in school health & development, the individual school has been treated as that unit for change but in reality, it must include the ministries and local authorities and agencies. Recognize that scaling up is a craft not a science[[40]](#endnote-40). Pragmatism[[41]](#endnote-41) and a lack of hubris[[42]](#endnote-42) are required as more knowledge and understanding are acquired. As with the adoption of the policy, program or approach itself, effective implementation, maintenance, scale up and sustainability will require sustained political and managerial support[[43]](#endnote-43) as scaling down existing programs is also difficult[[44]](#endnote-44).
2. Think clearly and realistically about the sustainability of comprehensive approaches[[45]](#endnote-45),[[46]](#endnote-46),[[47]](#endnote-47), [[48]](#endnote-48): Planning for sustainability is the first stage of a process that must engage all relevant stakeholders from the outset, not in the middle or at the end of a pilot project. Sustainability must be achieved at multiple levels (professionals, school, school board/health authority/agency and ministries) within several systems to be stable. Routinization or institutionalization of an innovation is critical to sustainability and includes instilling the program or change in the corporate or organizational memory (explicit part of the annual budget, assigning positions in the annual staffing plan, providing office space and equipment and allocating staff time to complete the tasks)
3. Recognize critical events, junctures or transition points in the scaling up or scaling down of the comprehensive approach: There are several critical junctures, events, pathways or transition points that mark progress in growing a comprehensive, multi-sector approach[[49]](#endnote-49),[[50]](#endnote-50),[[51]](#endnote-51). Often these critical events, junctures or transitions can become bottlenecks, barriers or breaking points that prevent the full development of a coherent and comprehensive SF&N approach. One type of transition or critical event occurs in all multi-intervention approaches. The transition occurs when isolated, individual interventions become a more effective, coordinated set of policies and programs that make up a multi-faceted approach. Macro-policies can require ministries, agencies and front-line personnel to coordinate the various interventions. However, it takes time and training for all levels and categories of personnel to assimilate this type of thinking and doing into their daily practice. It also takes a system and organization that rewards staff for reaching across to others to establish linkages rather than only focusing on their project, program or task.

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