

AN APPROACH TO RAPID SCALE-UP

USING HIV/AIDS TREATMENT
AND CARE AS AN EXAMPLE



HIV/AIDS, Tuberculosis and Malaria
Evidence and Information for Policy
World Health Organization
2004

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INTRODUCTION

Purpose of the document

Scaling up – which is defined here as the activity of expanding an intervention or programme from initial facilities that serve a small proportion of the population to facilities that serve a significantly larger population (such as an entire region or country) – has several approaches. The World Health Organization (WHO) is in the process of exploring these approaches and of refining its recommendations, based on reviews and international experiences.

This document provides general guidance for policy-makers, health care managers and administrators, and health care providers on one general dynamic approach (process) to rapid scale-up. The document uses human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS) treatment and care as an example.

The scale-up method presented in this document includes the following elements.

- ▶ **The Breakthrough Series (BTS) collaborative:** An improvement approach that relies on the spread and adaptation of existing knowledge to multiple settings simultaneously, to accomplish a common aim.
- ▶ **A Real-Time Interactive Operational Research (RTIOR) method:** This method, which is linked to the BTS approach, allows providers of health care services at facilities to learn from their experiences and to share their knowledge with peers.
- ▶ **A multiplicative scale-up framework:** To reach the full scale intended, this framework expands implementation from an initial number of pilot sites, using a sequence of phases – each involving 5-10 times more facilities.

The HIV/AIDS context

Of the estimated 38 million people with HIV/AIDS, 95% live in developing countries. Advances in medical science and the availability of combination antiretroviral therapy (ART) have improved the lives of many people with the disease in high-income settings, allowing them to lead productive lives for years. This achievement, however, has hardly touched the poorer parts of the world.

To remedy this inequity, strategies like the one described herein are necessary to help broadly expand access to ART and to provide ongoing management of HIV/AIDS as a chronic disease. Building on the growing availability of antiretroviral drugs and well established treatment guidelines for the disease, these strategies examine the entire system of care delivery and all of its elements (such as patient flow, information management, staff organization, supply logistics, and the interaction between laboratory and clinical services), making certain that the unique requirements of HIV/AIDS are met and that as many patients as possible receive the care and treatment so urgently needed.

LEARNING DURING SCALE-UP: COLLABORATION AND REAL-TIME INTERACTIVE OPERATIONAL RESEARCH

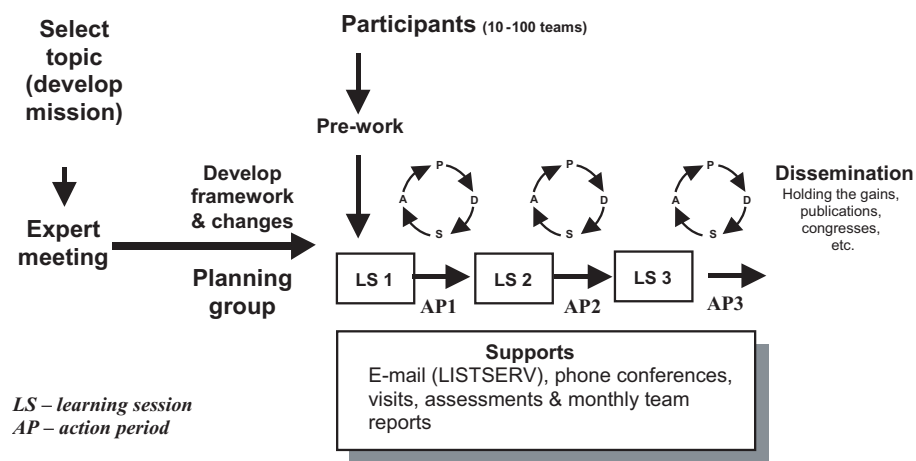
Collaborative improvement through the BTS approach – a system for learning and improvement

The BTS is an improvement method that relies on the spread and adaptation of existing knowledge to *multiple settings*, to accomplish a common aim.¹

In a health care system, the value of this approach is in accelerating the rate of improvement. It does this by *simultaneously*, rather than sequentially, coordinating (and learning from) the implementation of new approaches to care in multiple settings. Participating sites (such as health care centres and hospitals) work together for a period of 6–18 months to study, test and implement the latest knowledge available – to produce rapid improvements in their sites. These sites openly share successes, barriers encountered and tips and tools with other sites working towards the same goals.

The essential elements of the BTS design, as developed by the Institute for Healthcare Improvement (IHI), are shown in Fig. 1.

Fig. 1. The IHI Breakthrough Series design (6–18-month time frame)



Source: Institute for Healthcare Improvement. The Breakthrough Series: IHI's Collaborative Model for Achieving Breakthrough Improvement. Boston, Institute for Healthcare Improvement, 2003.

The first step is to select an area of work (or topic) and to organize the existing knowledge of best practices in that area into a framework. This information provides a shared reference point throughout the BTS. The BTS collaborative learning model includes both learning sessions (designated "LS 1", "LS 2" and "LS 3" in Fig. 1), and action periods (designated "AP1", "AP2" and "AP3" in Fig. 1). Action periods take place between learning sessions. During the learning sessions,

¹ Institute for Healthcare Improvement. The Breakthrough Series: IHI's Collaborative Model for Achieving Breakthrough Improvement. Boston, Institute for Healthcare Improvement, 2003.

representatives from all sites come together to learn new ideas and to share their experiences. During the action periods, ideas are tested, adapted and implemented at each participating site, leveraging an approach known as the Model for Improvement.²

The Model for Improvement is a crucial component of the BTS. As shown in Fig. 2, it consists of three fundamental questions and a plan–do–study–act (PDSA) cycle to test and implement changes in real settings.

The PDSA cycle is a simple way to help local teams answer the three fundamental questions when they introduce a new activity, using the scientific method to learn and assess changes in their own settings. In the case of HIV/AIDS, the PDSA cycle can be used to test or adapt best practices and new approaches and to spread them when they work.

For example, after a health care team clarifies what it wants to accomplish (its aim) and develops measures to monitor its progress, it completes a PDSA cycle:

Plan: Health care teams plan a change. Their plan addresses the following issues: what change do they want to test in this cycle; what questions need to be answered about the change; who will be involved; where will the plan be implemented; on what time scale; and what data need to be collected.

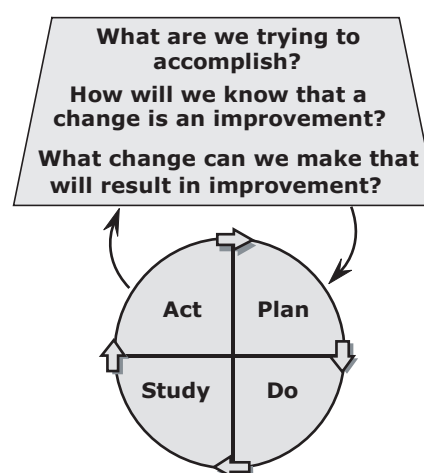
Do: Health care teams test the change on a small scale. They document problems and unexpected observations, and begin analysis of data collected.

Study: Health care teams observe the results, complete an analysis of the data, compare results with initial goals and summarize what they have learnt.

Act: Health care teams make a decision about their next step. Common decisions include testing the change under different circumstances and either refining it further or abandoning it. After a decision has been made, the team is back at **Plan**.

The repetition of these cycles supports the RTIORM method, which allows shared learning and growth of knowledge from implementation in a given setting.

Fig 2. The Model for Improvement



Source: Langley G et al. The improvement guide: a practical approach to enhancing organizational performance. San Francisco, Jossey-Bass Publishers, 1996.

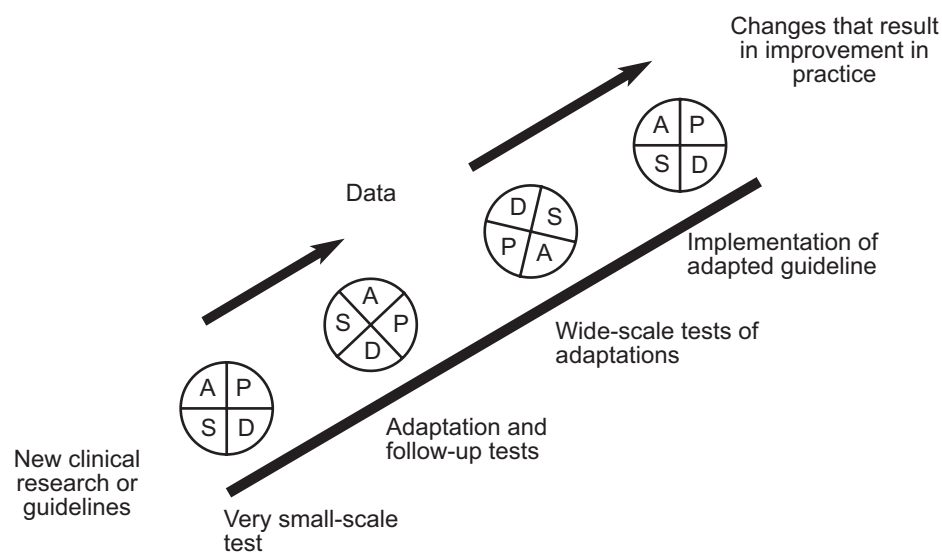
² Langley G et al. The improvement guide: a practical approach to enhancing organizational performance. San Francisco, Jossey-Bass Publishers, 1996.

The RTIOR method – using the scientific method in daily improvement work

A critical component of the collaborative improvement approach in the BTS is that participating health care teams contribute to adapting the new approaches to HIV/AIDS care. The RTIOR method is designed to capture local knowledge and experience by making health care teams active partners in the refinement and improvement of health care processes.

Fig. 3 illustrates the conceptual model of accumulating experience and expanding changes as confidence grows through the use of the RTIOR method.

Fig. 3. Real-Time Interactive Operational Research



The PDSA approach involves sequential tests, each building on prior iterations. Once one cycle of testing and learning is completed, the next one begins. This process allows health care teams to understand which changes worked and which need to be adapted or discarded. The knowledge gained in the first cycle is used to plan the next test.

Health care teams continue to refine a particular change until it is ready for broader implementation, when it effectively becomes a standard procedure formalized within the organization. Local teams can test more than one change simultaneously and, where possible, they should share their successful ideas and innovations with teams at other sites as they do their work (using e-mail and telephone communication throughout action periods, in addition to face-to-face interaction in learning sessions). Box 1 shows the steps in the adaptation of treatment guidelines using the RTIOR method.

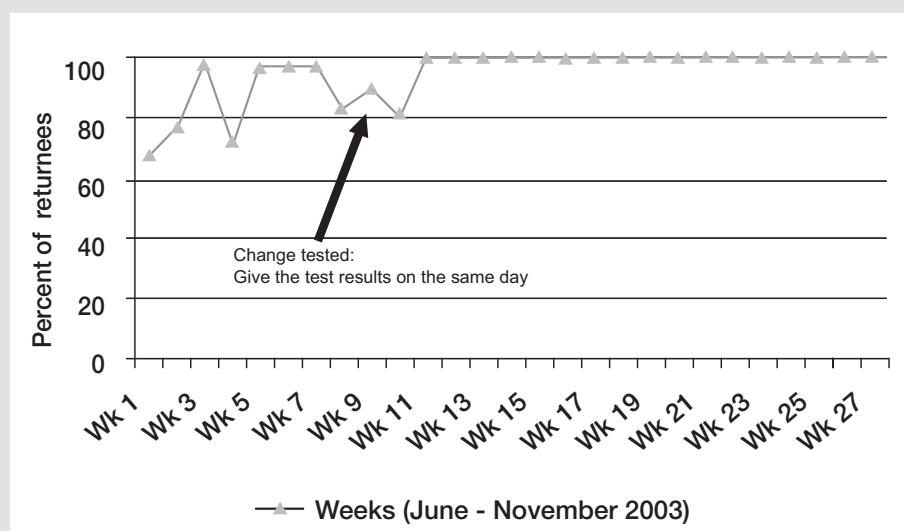
Box 1. Steps in the adaptation of treatment guidelines using the RTIOR method

1. A new treatment guideline is introduced into a health service delivery site (such as a primary health care centre with two or three health care teams).
2. The health care system's goal is to adapt the guideline for use in its local setting.
3. To measure progress, a team at the site develops a balanced set of measures, such as the number of patients receiving care via the guideline, the amount of time visits take using the guideline, and the cost of delivering care using the guideline.
4. The health care team then uses a formal method (based on the PDSA cycle) to begin using the new guideline. For an initial PDSA cycle, the team may develop a plan ("Plan", in PDSA) to try the guideline with one patient and one clinician, to learn how it fits into their care processes. The plan includes data collection, to answer the questions they have about the guideline. For example, the team may time the visit, see if tests or medications were ordered – as described by the guideline – and determine if the clinician liked using the guideline.
5. As team members "Do" what they planned, the local team observes and documents how well the guideline works and begins to generate its own new ideas on how to allow the guideline to better fit into its own local health care system, so as to provide better patient care. In the case of the example used, the clinician may observe during the "Do" phase that there are several steps in the guideline that do not require clinical skills.
6. After the team has completed the initial test, it analyses the data and compares results to its predictions in the plan "Study". For example, the team discovers that the clinician took twice as long as expected for the visit, but that the care delivered met the guideline criteria and that the clinician found the guideline beneficial.
7. Next, the team members "Act" on the new knowledge they obtained from this test. Based on the information gained from this first test, the team decides to do another test.
8. The team plans the next PDSA cycle to incorporate what has been learned and to increase the guideline's effectiveness and efficiency in its health care system. The team develops a new PDSA cycle and tests the process by having a health care worker begin the visit of the next patient by collecting information (such as current medications and recent tests), as determined by the guideline.
9. The PDSA cycles continue until the team has a guideline process that works for it and that has been successfully tested in a wide range of situations.
10. Once testing is completed, the team implements the process. For example, it changes the job description of a health care worker, places copies of a guideline-based form in each patient's chart and makes guideline-based care part of the clinician's performance review.
11. The team then shares what it has learned with another team in their local health system. The next team is encouraged to try its own tests to adapt the guideline.
12. System-wide measurements (see Step 3) are used to track the progress of the use of the guideline throughout the entire system, as it spreads to each new delivery site.

Box 2. Voluntary counselling and testing in Rwanda

As part of a larger programme on the prevention of mother-to-child transmission (PMTCT) of HIV, a team working on voluntary counselling and testing (VCT) in Rwanda analysed its existing VCT process and noted that only 82% of patients tested returned to learn their test results. The hypothesis was that the 18% dropout rate was related to the delay of 2–3 days between taking the blood sample and receiving the results. The change tested was to ensure that the laboratory would provide results within a few hours, instead of days. During this time, the people tested were kept busy in the VCT centre. As demonstrated in Fig. 4, this single change brought the dropout rate down to practically zero.

Fig. 4. Return rates for test results among women tested in Rwanda's Byumba Health Center, PMTCT Service



Source: PMTCT Collaborative, Rwanda, work implemented by the Government of Rwanda with technical assistance from the United States Agency for International Development (USAID) funded Quality Assurance Project - University Research Co. LLC

Fig. 4 shows the measurement template used by a team in the United States Agency for International Development's (USAID) Quality Assurance and Workforce Development Project (QAP 3) AIDS Care Collaborative. University Research Co., LLC, implemented the project in Rwanda. The measurement template illustrates an aim for improvement (increasing return rates for test results among women tested for HIV), shows how the team knows it has successfully fulfilled this aim (by measuring the proportion of women who return for results out of all women being tested for HIV), and gives a time-series plot for this indicator (annotated with arrows showing where a new change – giving test results on the same day as the test - was introduced).

In other countries, increasing the return rate of those receiving test results has been associated with the following interventions: comprehensive communications programmes about the benefits of knowing one's status; the use of rapid tests to reduce dependence on laboratory services, thus providing quicker results; and decentralization of testing and counselling to clinical/medical services and other outreach activities.

In applying the BTS collaborative and the RTIOR method, the following are some useful tips for those involved in the process at different levels.

Tips for system leaders (such as WHO “3 by 5” country officers and National AIDS Programme leaders)

- ▶ **Apply system’s thinking principles** to design improvement initiatives.
- ▶ **Appreciate the importance of contextual factors in implementing new ideas.** Understand that local service sites must change and adapt centrally designed models, to allow them to work well in local settings. Therefore, encourage rapid adaptation of new research and existing knowledge to new settings.
- ▶ **Emphasize collaborative learning and sharing.** Trust the wisdom of local teams, communities, and care providers to find increasingly better solutions, and to share with each other. Encourage feedback, using simple measurements, to continuously update the best practices and new knowledge for patient care.
- ▶ **Treat diffusion of change as a key component of research, and invest in learning by doing.** Understand that attention to scale-up begins with initial prototypes, which will be modified – based on experience and reflection – as time passes.
- ▶ **Assure success by supporting local teams, communities and care providers.** Review the effort regularly, and support teams in addressing barriers as they identify them. Such barriers can be related to policy, procedures, logistics, supply chain, and other essential supports that local teams may not be able to control without support from the leadership.

Tips for health care teams

- ▶ **Rapidly test new ideas by using iterative methods:**
 - ▶ Emphasize a local trial and learning approach, in which taking action is the best and fastest way to learn.
 - ▶ Start testing immediately and use learning to develop plans; understand the value of the PDSA approach as a basic one locally.
 - ▶ Use very small-scale local tests initially and immediately follow up with other tests of ideas, adapted from learning from the initial cycle.
 - ▶ Use the new concepts (available guidance on HIV/AIDS care) in a proposed new design of care to adapt or develop ideas that work. For example, if WHO guidelines try to minimize reliance on scarce resources (such as laboratory tests) or to increase reliance on community health workers, then work actively with those concepts.
 - ▶ After initial successes, continue to test ideas over a wide range of conditions.
 - ▶ Implement proven ideas, using principles of sustainability – for example, how can a new, better procedure, which has been tested and proven successful, be incorporated as the new *standard* way to do the work.

► **Effectively use data for learning:**

- Collect a sufficient, balanced set of measurements from the local health care system. These measurements should be as simple as possible.
- Use a time-series display of key measurements (see Fig. 4), annotated with the sequence of changes and other significant events.
- To ensure sustainability, continue the time-series graph after the changes have been made.

► **Document progress:**

- Document all the learning that took place during the evolution to the new system.
- Describe the redesigned system clearly, so that others can learn from it.

THE MULTIPLICATIVE SCALE-UP FRAMEWORK

Chapter 3 presents an approach for expanding implementation from the initial pilot sites to the full scale intended; it leverages the methodologies described in the preceding chapter. The heart of this scale-up design is the use of a multiplicative structure, where the implementation for reaching many patients in the shortest possible time takes place in phases. The number of phases ultimately depends on the burden of the disease, the size of the country, and the number of treatment sites.

In general, to determine the number of phases and the number of sites in each phase, we use the *multiplication* phase plan, whereby the number of sites in each phase is multiplied by a factor of 5-10. For example, a country that intends to have 1000 service delivery sites at full scale might need three phases – 40 sites in the first phase, 200 (40 x 5) in the second phase and 1000 (200 x 5) in the third phase.

The following eight steps are those recommended to be followed in designing and implementing the scale-up process.

3.1 Establish the country's leadership and coordinating committee

The rapid scale-up work should be led and supervised by senior health care authorities in the country concerned, in conjunction (or even combined) with the WHO Country Office team and other partners. The coordinating structure is established so that it can affect policies, support and facilitate changes, and solve problems for the teams that they cannot solve themselves. The coordinating committee structure may help build bridges and dialogue between the scale-up effort and the health ministry and, if possible, this committee structure should include a single, full-time scale-up leader who will assume primary responsibility for this phase and the system for team-by-team learning and improvement.

3.2 Identify the AIDS care expert group

When the work begins, and throughout the scale-up effort, it is important that each national coordinating group stay in close communication with their own national experts and WHO AIDS care and treatment experts. This will help both align the country's treatment efforts with the best of current science and care policy; it will also allow the country's leaders and WHO advisors to review progress and extract lessons from the various countries, to improve the overall models of care and treatment.

3.3 Understand the full scale intended

Start with a clear understanding of the full scale intended: the number of patients to be cared for at the completion of the programme and the number and location of sites providing services. It is important to develop and test the model of care with knowledge of the full scale intended, because this influences the features built into the scale-up design.

3.4 Organize the first phase in the multiplicative approach

The following are six key components of the first, prototype phase of expansion.

a. Select participating facilities in first-phase pilot sites

The choice of the first-phase *prototype* facilities should be based on the prevalence of HIV/AIDS, the geographic distribution of the population, the experience of the health care team and degree of preparation at a given site.

The scale-up will occur primarily within *nested systems* (see Box 3 for the definition). First-phase facilities are selected to include the key provincial- or district-level cities – together with local health centres, health posts and other types of facilities. It is important to include the different types of facilities, the central as well as the local, in order to design the system at all these levels. Moreover, when selecting first-phase prototype facilities, it is also important to involve all those sites needed to successfully spread the programme – that is, all the nodal points (see Box 3 for the definition) – in succeeding phases.

Box 3. Definition of a nested system and of nodal points

A nested system is a system of care that consists of at least one facility that represents the different levels of care (tertiary, secondary, primary and community levels). Consideration is given to the inclusion of both urban and rural delivery services, as well as private services, if possible. To the extent possible, the different facilities for a specified population should be in the same geographic area.

Nodal points are the facilities within a nested system from which a “natural” spread can occur in the succeeding phases. These facilities represent the major health sites in districts or regions – for example, referral facilities for smaller sites in the system.

To begin with prototypes that are in principle scalable, all levels are involved from the start. To determine the number of sites in this phase, use the multiplication phase plan described at the beginning of this chapter, using a factor of 5-10. Fig. 5 illustrates the selection of first-phase *prototype* facilities representing the different levels of care in a district or province. Fig. 6 illustrates the selection of *prototype* facilities throughout the country

Fig. 5. Selection of first-phase prototype facilities;

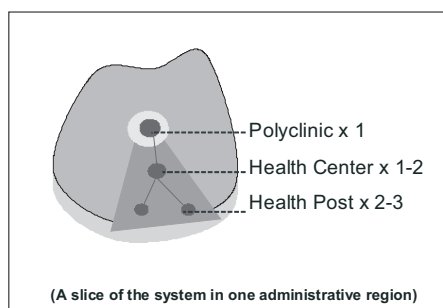
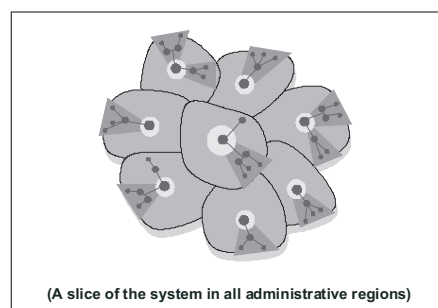


Fig. 6. Selection of prototype facilities throughout the country



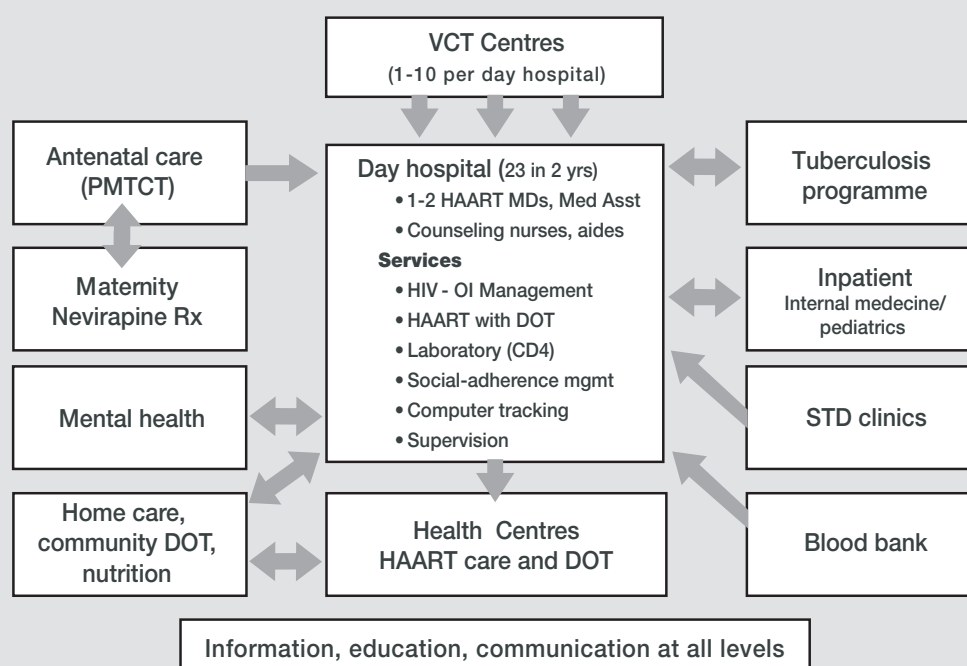
Source: work underway by M. Rashad Massoud, United States Agency for International Development (USAID) funded Quality Assurance Project - University Research Co. LLC

Box 4. Scaling up ART in Mozambique

Mozambique is a large country. Its population of about 19 million lives in two different settings: cities and rural areas. It is divided administratively into 10 provinces and the capital city of Maputo. In the rural areas, the population is greatly dispersed, with few roads and little infrastructure. The health care system is focused on good primary care, but the sophistication necessary for treating AIDS can be found primarily in provincial and rural hospitals.

To address the needs of patients with HIV/AIDS, the Ministry of Health in Mozambique decided to create Integrated Health Networks as the units that provide care for patients with HIV and AIDS. As shown in Fig. 7 in this box, each Integrated Health Network includes one “day hospital” (ambulatory care centre for ART), one or more antenatal care centres for the prevention of mother-to-child transmission (PMTCT) of HIV, several voluntary counselling and testing (VCT) centres, links to tuberculosis treatment, home care and blood banks, as well as links to inpatient services for both adults and children. Therefore, an Integrated Health Network is comprised of 5–10 (and often more) facilities. The Integrated Health Network represents a slice of the system of care for AIDS in Mozambique.

Fig. 7. Integrated Health Network design



Source: The Republic of Mozambique and the Clinton Foundation. Business Plan 6.0.

Key: HAART = highly active antiretroviral therapy;
 DOT = directly observed therapy;
 OI = opportunistic infections;
 STD = sexually transmitted disease

Under the leadership of the Ministry of Health, a team from IHI/URC/ICIC³ participated with the Clinton Foundation and other partners to help plan the scaling up of ART in Mozambique. In designing the first phase of the scale-up approach, consideration was given to including both urban and rural facilities in each of the Integrated Health Networks. The first phase also included at least one Integrated Health Network from Maputo, as well as health from the capital cities of each of the provinces. In addition, other important cities were chosen to participate from the start, based on the rate of HIV-positive people and the presence of strong local health systems. The total number of Integrated Health Networks proposed for the first phase was 24.

The scale-up in Mozambique needed to factor in both the very high cost of local travel and the impassibility of the roads during the flood season, which for a few months each year often divides up the country into three parts. Therefore, three separate collaborative projects for the northern, middle, and southern provinces were recommended. These three projects would function independently of each other when road conditions were unfavourable, but otherwise would get together and learn from one another when conditions permitted.

It is expected that each of the first-phase Integrated Health Networks will propagate its findings and practices (by becoming a centre for spread) to other Integrated Health Networks in its province, going through as many subsequent phases of spread as needed.

b. Engage the health care team in rapid scale-up

In each participating facility, a team is formed. Each team is comprised of a member from each of the disciplines involved in the delivery of care within its facility, as well as patients and community members. For example, depending on local resources, a team in a local health centre might include a physician (if there is one), a nurse, a community health worker, and an HIV-positive patient. These teams will carry out rapid scale-up of AIDS care systems – testing and adapting changes, learning, and sharing their experiences with others.

c. Organize and equip health care teams in service delivery sites

Local leaders and caregivers require support and mentoring in the areas of expertise needed for rapid scale-up of AIDS treatment and care. Initially, all health care teams at the service delivery sites – (such as the hospital and primary health care centre) should receive training in the following four areas.

1. Clinical management of people with AIDS – using, for example, *Integrated Management of Adolescent and Adult Illness (IMAI) modules*.⁴

³ IHI: Institute for Healthcare Improvement, Boston, MA, USA; URC: University Research Co, LLC, Bethesda, MD, USA; ICIC: Improving Chronic Illness Care, Seattle, WA, USA.

⁴ Integrated Management of Adolescent and Adult Illness modules (<http://www.who.int/3by5/publications/documents/imai/en/>).

2. Organization and delivery of AIDS care, using models of care that outline elements of good chronic care – for example, the *Chronic Care Model*,⁵ or its international adaptation, the *WHO Innovative Care for Chronic Conditions Framework*⁶.

3. The Model for Improvement, which allows teams to learn how to develop solutions to problems of implementation, to evaluate results, and to monitor the system's performance. The training includes the following four competencies: (a) understanding their work as processes and systems; (b) working in teams; (c) including patients' needs and expectations in the design of new care delivery systems; and (d) using scientific methods to test and measure the effects of changes.

4. Logistics of local management of supplies and people.

After the initial training, local teams continue to receive ongoing mentoring and advice on problem solving from advisors to develop their skills. To facilitate continuous learning and sharing of information, distance-, learning- and web-based tools also support teams, where technologies permit. All possibilities should be explored to establish communication among teams from different sites, to ensure sharing of information and learning. This could be through meetings, telephone conversations or electronic communications.

d. Use the BTS Collaborative Model to adapt and implement the AIDS care model in the prototypes

Following initial training at the first learning session, teams embark on testing and adapting AIDS care guidelines and delivery models by using the Model for Improvement, described earlier in chapter 2. The teams measure and report on initial learning and performance. Feedback on the experience of teams engaged in local adaptation of the care model takes place continuously. As teams test and modify the new care designs, they communicate the results of their tests to other teams. Where possible, this communication among teams can occur through local meetings, monthly reports, telephone conversations and conferences, Internet dissemination or roaming programme staff. In this way, the teams can also share their ideas and lessons outside and between learning sessions (the LSs in Fig. 1).

e. Identify the "champions" to assist in scale-up in the second phase

In many sites, individual people will emerge as being particularly skilled, inventive and successful at adapting the care model to their local setting. The proposed approach to scale-up specifically encourages and supports these "champions" to help and teach others in new sites in successive phases. This capitalizes on local leadership, talent and lessons learnt, rather than relying solely on the central leadership and formal expertise.

f. Document progress and learning

The first-phase pilot sites represent the sites where the intended model of care is adapted to the local context and tested to develop a prototype that can be spread throughout the larger system. Here it is important to document progress and describe clearly the redesigned system, to enable others to learn from this process.

⁵ Wagner EH et al. A survey of leading chronic disease management programs: Are they consistent with the literature? *Managed Care Quarterly*, 1999, 7(3):56-66.

⁶ Innovative care for chronic conditions: building blocks for action. Geneva, World Health Organization, 2002 (WHO/MNC/CCH/02.01).

3.5 Organize the second phase in the multiplicative approach

The second phase of scale-up builds directly on the first, seeking to increase the number of service delivery sites involved by a factor of 5–10. It leverages the achievements of the first phase, with each of the teams that participated in the first phase becoming responsible for coaching new teams through the journey of adapting and implementing the new HIV care model. Champions from the teams from the first phase are taught and coached during the first phase to fulfil their roles in the second phase; in turn, they become coaches to their peers in other service sites. During the second phase, the following five developments should occur.

a. Expand the leadership and coordinating committee

The leadership and coordinating committee continues to play its important roles in directing and assisting rapid scale-up. Its members may now increase to include the champions from the first-phase facilities, who are now helping the second-phase facilities to rapidly scale up AIDS care.

b. Select second-phase facilities

In the second phase, each facility within the first phase takes responsibility for the facilities that are in its immediate area of reach. These would normally vary in number from 5 to 10 second-phase facilities for each first-phase facility.

c. Engage, equip and organize health care teams

Teams in each of the second-phase service sites are formed along the same lines as those in the first phase. They receive necessary training on the clinical management of AIDS, the adapted AIDS care delivery model, the Model for Improvement and the management of logistics.

d. Encourage the modification, improvement and further adaptation of the care model

Enriched by the experiences of the first-phase teams, the form of the care model used at the beginning of the first phase undergoes continuous development and adaptation to local contexts. The national leaders welcome and encourage this modification, improvement and local adaptation, as long as the local measurement processes are able to show ongoing successes and gains.

e. Lead and manage the scale-up from within the relevant health authority

This is particularly important in the second phase and beyond. In general, a national scale-up guidance group is part of the country's plan. A full-time (if possible), senior person responsible for national scale-up should lead the group. That leader and group will generally have strong, ongoing communication and ties with local level scale-up leaders – (regional and district-level leaders). Depending on the country's traditional balance between central authority and local control in its health care system, this relationship between national and local levels may range from firmly managerial to simply advisory.

3.6 Organize additional phases of scale-up

In larger countries, more than two phases may be required to meet the scale-up requirements and to maintain the recommended scale-up factor of 5-10. For example, consider a large country that has 1000 health centres that potentially need to be able to deliver AIDS care and treatment by the end of 2005. If the first phase includes 20 sites, the second phase could include 140 sites (seven per first-phase site). A third phase would include about 980 sites (seven per second-phase site). By the end of the series of phases, the goal is that all 1000 sites will have adapted and implemented the care model.

The duration of each phase is designed to meet target deadlines. In past experience, phases with durations of 6–9 months are feasible, depending on the intensity and support of national and regional leaders.

In each additional phase, the programme follows the same steps presented in the first phase, each new phase allowing for further adaptation of models of care based on learning experiences from previous phases. It is important to remember to use the sites from the preceding phases as the centres for spread in the succeeding phases.

Box 5. Scaling up the system of neonatal respiratory distress syndrome care in Tver Oblast of the Russian Federation

Tver Oblast has a population of about 1.6 million people and is divided administratively into 37 *rayons* (districts or interregional centres), each of which has at least one hospital that provides care for neonates with respiratory distress syndrome (NRDS). There are a total of 43 hospitals in Tver Oblast that provide neonatal care.

The (re)design of the system of care for NRDS in Tver Oblast started with an initial selection of five hospitals for the first phase. The selection of these five facilities was based on the minimum number (due to financial and logistic considerations) that would include representatives of the different types of facilities involved in the system of NRDS care – including the three different levels of neonatal care, and the urban–rural distribution. Three of the initial five locations were in Tver City itself (the *oblast* (regional) referral hospital, the Tver city referral hospital, and a maternity hospital) and two were in the *rayons* (one of which was a major *rayon* hospital, and the other a peripheral hospital). Essentially, these five facilities represented a “slice of the system of NRDS care” for Tver Oblast.

A second phase was organized in order to reach the full intended scale (43 hospitals) in Tver Oblast. Champions from the first-phase five facilities – who led the NRDS (re)design effort – played the roles of improvement and content advisors during the second phase, under the leadership of the Tver Oblast Health Authority. These champions were guided by improvement and content advisors from the USAID Quality Assurance and Workforce Development Project.

During the second phase, 6–8 scale-up sites were attached to each of the five facilities from phase one. Most of the team meetings were organized in the initial five facilities. There were, however, site visits to each of the team locations, as well as large conferences that involved representatives from all 43 sites. Telephone and electronic communications were limited primarily to Tver City.

The results: Early neonatal mortality (NMR) dropped from 10.8/1,000 in 1998 (prior to the intervention), to 5.3/1,000 in 2001. Follow-up in 2003 showed an early NMR of 4.2/1,000.

Source: The USAID-funded Quality Assurance Project, University Research Co. LLC, implemented jointly with Tver Oblast Department of Health, and the Central Public Health Research Institute, Moscow - Ministry of Health, Russian Federation.

3.7 List and understand the different factors involved in the system to be scaled up

Successful scale-up involves a *systems viewpoint*, in which the leaders and implementers become increasingly aware of the various factors influencing success and develop continually better models and ideas for addressing barriers to success – learning as they go and making sure to capture new knowledge. As a result of these activities, better and better designs should emerge over time. So, scaling up should be informative, leading to continual learning and improvement of the approach to care.

3.8 Be aware of the factors that constrain scale-up

All systems have bottlenecks (or constraining factors) that limit their speed or performance. In HIV/AIDS care, at any specific time, the key constraints may include drug supply chain speed and reliability, local skill at service settings, and patients' willingness to seek care. In scaling up, the leaders of the process must be aware continually of the current constraints and work with local sites to mitigate their effects. Of specific note are the following five points.

a. Constraints in phase one differ from those in later phases

b. Constraints may vary in different settings

c. Constraints may scale up differently

For some constraining factors (such as laboratory equipment), economies of scale may operate (for example, a single machine may perform 100 tests in a day almost as easily as it performs 10 tests). Other constraining factors (such as drug supplies) scale up arithmetically (for example, treating 1000 patients will likely require 10 times as much medication as treating 100 patients).

d. Information systems may help relieve constraints

Information systems may increase overall system capacity; examples include simple, home-grown data and measurement solutions, mobile information collection services and Internet-based expert consultation systems for remote service sites. A sound, simple, local electronic patient record may also support appropriately equipped service settings.

e. Oversight requirements should be understood and designed

Some elements of scale-up are reasonably within the control of local service delivery sites and teams. For example, local sites may be in the best position to recruit and train community health workers or family members of patients. Other elements may be beyond the capacity of the local sites to influence. For example, national treatment guidelines, drug-supply-chain management, and reporting requirements may depend on activities of regional and national leaders involved in the programme. Therefore, the scale-up approach should clearly identify these cross-cutting support activities and systems, and engage leaders in their design, assessment and continual improvement, so that the local service sites can do their jobs well. In this sense, local service sites are customers of the regional and national oversight and leadership groups.

Box 6. Summarizes the steps to be followed in designing and implementing the scale-up process.

The following steps should be followed in designing and implementing the scale-up process:

- ▶ establish the country's leadership and coordinating committee
- ▶ identify the AIDS care expert group
- ▶ understand the full scale intended
- ▶ organize the first phase in the multiplicative approach of scaling up:
 - ▶ select participating sites
 - ▶ engage health care teams
 - ▶ organize and equip health care teams
 - ▶ use the Model for Improvement to develop the prototype
 - ▶ identify your champions
 - ▶ document progress and learning
- ▶ organize the second phase in the multiplicative approach of scaling up:
 - ▶ expand the leadership and coordinating committee
 - ▶ select second-phase facilities
 - ▶ engage, organize and equip health care teams
 - ▶ encourage the modification, improvement and further adaptation of the care model
 - ▶ lead and manage the scale-up from within the relevant health authority
- ▶ organize additional phases of scale-up
- ▶ list and understand the different factors involved in the system to be scaled up
- ▶ be aware of the factors that constrain scale-up.

CHAPTER 4.

SUMMARY

With the launch of the “3 by 5” Initiative, countries, WHO and other partners are embarking on an effort to tackle an ambitious health care improvement agenda. As countries prepare their plans to scale up the provision of antiretroviral therapy, it becomes necessary to present different strategies and methodologies that help translate these plans into realities.

The approach presented in this document is one form of a systematic, easily understood method for scaling up the number of people under AIDS treatment and care by factors of 10 to 100. It involves multiplicative phases of implementation and also involves harnessing the energies and wisdom of health care workers and communities, in thousands of service sites, in a mutual effort to learn, teach and share.

There are many crucial elements that are important for successful scale-up, such as drug supply, national leadership, the flexibility and full participation of clinicians, important policy changes, the proper management of the supply chain, and the faithful stewardship of new funds. With these elements in place – and with political commitment and the advice of the world’s experts on the AIDS epidemic – a systematic scale-up plan will help countries to reach their aggressive and time-bound treatment scale-up goals.

This document is a collaborative effort between the “3 by 5” Initiative (WHO/HTM/HIV) and the Department of Health System Policies and Operations (WHO/EIP/SPO). The technical content is based on the work and methodology of the Institute for Healthcare Improvement (IHI), Boston, MA, USA, jointly with University Research Co, LLC (URC), Bethesda, MD, USA, and Improving Chronic Illness Care (ICIC), Seattle, WA, USA.

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