Lessons Learned from a Preliminary Analysis of the Scale-Up Experience of Six High-Impact Reproductive, Maternal, Newborn, and Child Health (RMNCH) Interventions

June 2014

Table of Contents

Abbreviations

ANC	Antenatal Care
DRC	Democratic Republic of the Congo
HBB	Helping Babies Breathe
HMIS	Health Management Information System
iCCM	Integrated Community Case Management
IPTp	Intermittent Preventive Treatment in Pregnancy
ITN	Insecticide-Treated Nets
IUCD	Intrauterine Contraceptive Device
MCHIP	Maternal and Child Health Integrated Program
MiP	Malaria in Pregnancy
MNCH	Maternal, Newborn, and Child Health
MOH	Ministry of Health
NGO	Nongovernmental Organization
NUVI	New and Underutilized Vaccines
PCV	Pneumococcal Conjugate Vaccine
PMI	President's Malaria Initiative
PMTCT	Prevention of Mother-to-Child Transmission of HIV
PPFP	Postpartum Family Planning
PPIUCD	Postpartum Intrauterine Contraceptive Device
PPH	Postpartum Hemorrhage
QI	Quality Improvement
RMNCH	Reproductive, Maternal, Newborn, and Child Health
SBA	Skilled Birth Attendant
TBA	Traditional Birth Attendant
USAID	U.S. Agency for International Development
UUIFB	Uterotonic Use Immediately Following Birth
WHO	World Health Organization

Acknowledgments

Background

Since 2008, the USAID Bureau for Global Health's flagship Maternal and Child Health Integrated Program (MCHIP) has worked in more than 50 developing countries in Africa, Asia, Latin America, and the Caribbean to improve the health of women and children. MCHIP has worked with USAID Missions, governments, nongovernmental organizations, local communities, and partner agencies in over 50 developing countries to assist in the scale up of high impact interventions in reproductive, maternal, newborn, and child health (RMNCH), one of MCHIP's objectives. This brief summarizes the results of this scale up experience and the lessons learned, mainly based on 18 case studies of six high-impact RMNCH interventions in 14 countries supported by MCHIP over the life of the project (Larson et al. 2014). It also includes preliminary learning from two in-depth country studies and several studies of the scaling-up experience done by MCHIP technical teams for individual interventions they supported. The review analyzes the elements and strategies of the country scale up experiences and shows outcomes in institutionalizing and expanding the coverage of the interventions. It draws conclusions on lessons learned that could be applicable to other programs.

CASE STUDIES OF SCALE UP

The review is mainly based on the study of six high-impact RMNCH interventions in 18 settings, supported by MCHIP between 2008 and 2013. For each intervention, there are three case study countries (and global efforts to scale up misoprostol for PPH prevention) where MCHIP participated in scale-up efforts. These country case examples are shown in Table 1. In all cases, the scale up goal is national in scope, including India. Two cases were picked for even more in-depth review (3-4 weeks of additional in-country data gathering).

Table 1. Scale-up country case examples studied

Intervention	Countries		
Postpartum family planning (PPFP)	India*	Philippines	Tanzania
Newborn resuscitation (Helping Babies Breathe or HBB)	Bangladesh*	Colombia	Malawi*
Uterotonic use immediately following birth (UUIFB) to prevent postpartum hemorrhage (PPH)	Global	India	Mozambique
Integrated community case management (iCCM) of childhood illnesses	Democratic Republic of the Congo (DRC)	Mali*	Rwanda
Prevention of malaria in pregnancy (MiP) focusing on intermittent preventive treatment in pregnancy (IPTp)	Burkina Faso	Ghana	Kenya
Introduction of new and underutilized vaccines (NUVI), specifically pneumococcal conjugate vaccine (PCV)	Kenya	Malawi	Tanzania

* Additional in-depth investigation done in these four cases (India and Mali with 3–4 weeks in-country primary data collection; Malawi, Bangladesh synthesizing findings from process and impact evaluations). Some preliminary findings from that work here but main body will be in separate report.

MODIFIED ExpandNET FRAMEWORK USED FOR ANALYSIS OF SCALE-UP

A note on terminology*: ExpandNet uses the term "innovation" to indicate a new intervention. We will use the term "intervention" throughout the document to mean the same thing, since some of the interventions MCHIP supported (like prevention of malaria in pregnancy) were not particularly new, even though they were in need of scaling up. The term "innovation" will only be retained in quotes where it was used, particularly by ExpandNet. The ExpandNet term "user organization" is simply replaced with its more commonly used synonym "implementer."*

MCHIP adopted one of the most commonly used definitions of scale-up in global public health—that of ExpandNet (2009):

"Deliberate efforts to increase the impact of successfully tested health innovations so as to benefit more people and to foster policy and programme development on a lasting basis."

Important features of this definition are the following:

- Scale-up is a deliberate process involving explicit goals and thorough planning.

- Scale-up efforts occur after there is evidence that the intervention will be effective in that setting.

- The intent of scale-up is to benefit more people by expanding access and use of the intervention.

- The establishment of supportive policies and routine service delivery processes is essential in order to institutionalize the intervention and achieve lasting benefits.

ExpandNet conceptualizes five elements and four strategies of the scale-up process, shown in Figure 1 (ExpandNet 2010). These strategies match well with those employed for scale-up in the cases studied. The ExpandNet framework classically assumes that the benefit of the intervention to be scaled up has been proven through local testing and piloting. It also posits that scale-up is most likely to be successful where there is local ownership of the decision to scale up; strong collaboration by government officials, technical advisors, and donors around a common vision; and a systematic and integrated approach to make the intervention a sustainable part of the routine health system through institutionalization and expansion. This framework adequately captures most of the components of the scale up process as it occurred in the examples studied here, with the exception of the role of clients and communities, which was added.

Figure 1. ExpandNet scale-up framework
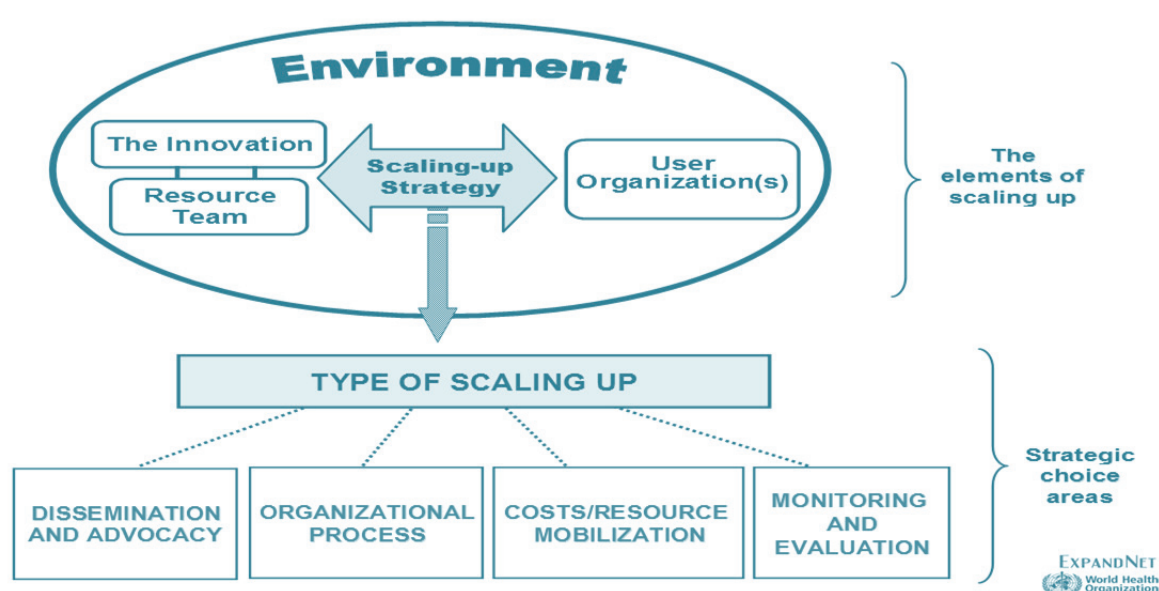
Scale-Up Elements

ExpandNet describes the following elements of the scale-up process (Figure 1):

- A proven procedure, technology, health care practice, or health care cadre that is to be scaled up (**innovation**). *Note: This will be called the "intervention" in this document.*

- Appropriate for the country context (**environment**).

- Involving the organization(s) responsible for implementing the intervention (**user organization[s]**). *NOTE: This will be called the "implementer" in this document.*

- A group of people responsible for driving the institutionalization and expansion of that intervention (**resource team**).

SCALE-UP STRATEGIES

ExpandNet defines four types of strategies commonly used to promote scale-up of an intervention:

- **Dissemination and advocacy** involves communicating information about the intervention. Strategies of this type include conducting and sharing the results of research and evaluation. Guidelines, policies, and national strategies are important platforms for informing people about the intervention, galvanizing support, planning, and coherent implementation.

- Scaling up an intervention usually involves making changes to **organizational processes** of the implementing organization at the national, regional, district, facility, and community levels. The organizational processes most frequently employed in scaling up are training of providers and often their managers and support staff, follow-up and ongoing supervision, quality improvement procedures, and strengthening of logistics and supply chains.

- **Resources need to be mobilized** for the additional costs of scale-up from the national government and/or development partners.

- **Monitoring and evaluation** activities have been found to be crucial throughout successful the scale-up process, allowing timely course corrections when needed (Cooley and Kohl 2006; Yamey 2011; Levine 2007).

SCALE UP OUTCOMES

The ExpandNet framework defines two desired outcomes of scale-up: service expansion to reach more people (i.e., increased coverage) and institutionalization of the intervention within national systems. Together, these outcomes should produce sustainable impact at scale. This is shown in Figure 2.

Figure 2. Scale up outcomes—service expansion and institutionalization in national systems
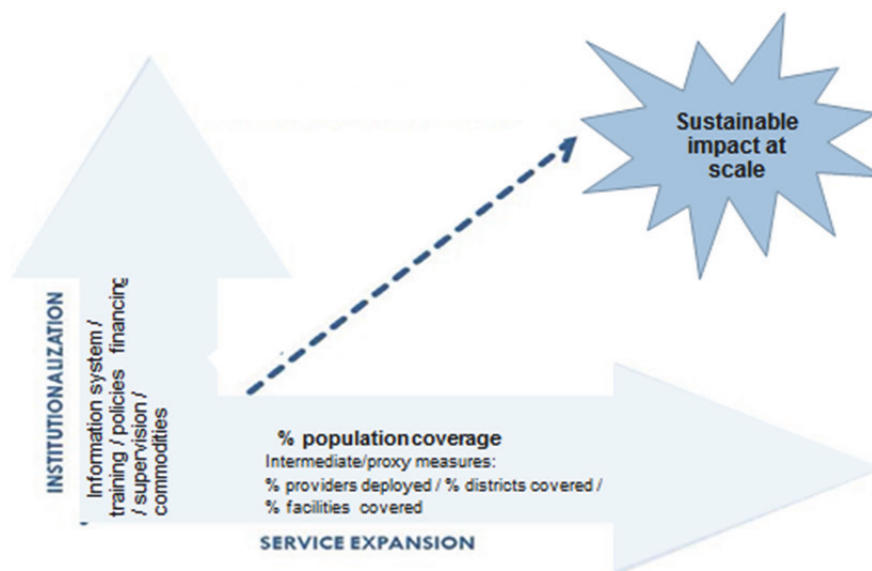
Source: Based on diagram from Institute for Reproductive Health, Monitoring and Evaluating Scale up

Methods

This retrospective review was undertaken in several stages over an eight-month period:

- Completion of key information by country teams for the years 2008 and 2013: information on expansion of the intervention and completed institutionalization matrices. These matrices describe the situation with institutionalization in a standard way (see Annex for the tool used).

- desk review and analysis for each of the 18 scale-up cases incorporating the matrices, indicators of expansion, and other relevant project documents;

- key informant interviews with MCHIP technical leaders;

- group discussions with MCHIP team leaders to validate the conclusions; and

- two in-depth country case studies (PPFP in India; iCCM in Mali) and review of other MCHIP studies of the scale-up process to gather more in-depth information and validate general conclusions.

OUTCOME INFORMATION: INSTITUTIONALIZATION MATRICES AND SERVICE EXPANSION INFORMATION

MCHIP developed matrices to measure the extent of institutionalization of the intervention based on the six building blocks of health systems as defined by the World Health Organization (WHO) (2007). Some of the WHO building blocks, such as governance, were divided in order to operationalize measurement, resulting in a 12-component matrix (see Table 2). The one addition to the WHO building block model, which focuses on supply of health services, is a component on demand creation and community engagement that is emphasized in several other frameworks (e.g., Yamey, 2011). The ExpandNet scale-up strategies can be mapped as ways to achieve improvements in institutionalization within the health system according to the WHO building blocks. Table 2 shows the match between the ExpandNet strategies and the WHO building blocks: dissemination and advocacy (governance); organizational processes (human resources for health, service provision, and commodities and supplies); resource mobilization (finance); and monitoring and evaluation (health information). The scoring of the institutionalization matrix consisted of a five-point scale, from zero to four. A score of zero meant there was no activity occurring in the country related to that component with respect to the intervention. A score of four indicated that the national government through the Ministry of Health (MOH) had fully institutionalized the changes needed to support the intervention within that component and, therefore, made it a sustainable part of the routine practice of the health service.

The MCHIP country team convened a meeting with a group of in-country knowledgeable stakeholders that included a representative from the relevant section of the MOH and representatives from other technical agencies aiding the scale up process. They discussed and answered the questions about the state of institutionalization of each of the 12 health system components, filling out the information for the current year (2013)and retrospectively for 2008 (see example for iCCM in Mali at Annex).

Information on service expansion was gathered by the study team for each of the interventions from project documents and reports and confirmed in interviews with the country teams—numbers of facilities covered; number of districts covered; and population coverage where available.

Table 2. Institutionalization matrix

ExpandNet Scale-Up Strategy	WHO Building Block	Health System Component	Questions for Scoring of institutionalization (scale of 0 to 4)
Dissemination and Advocacy (Piloting and Evidence-Based Advocacy)	Governance	Policy	Has the MOH implemented the necessary policy elements and practice guidelines to support the intervention?
		Planning	Has the MOH included the intervention in national and subnational plans?
		Coordination	Is the intervention included as a regular topic of discussion with appropriate national and subnational coordination bodies?
		Leadership	Are there ongoing leadership efforts for the intervention (at first by champions, and later by an institutionalized group in the MOH)?
Resource Mobilization	Finance	Finance	Is the government including the intervention in its budgeting process?
Monitoring and Evaluation (Data for Action)	Health Information	Health Information	Does the MOH collect, report, and use appropriate indicators/information for the intervention?
Organizational Processes (Capacity Building)	Commodities and Supplies	Commodities and Supplies	Is the MOH procuring and distributing sufficient quantities of the needed commodities within its normal logistics system?

ExpandNet Scale-Up Strategy	WHO Building Block	Health System Component	Questions for Scoring of institutionalization (scale of 0 to 4)
	Human Resources	Personnel	Are appropriate health worker cadres authorized and are there sufficient numbers of them to implement the intervention?
		Training	Do appropriate MOH in-service and pre-service curricula include the intervention?
	Service Delivery	Quality Improvement	Does the MOH QI system include the intervention and is it being implemented?
		Supervision	Is the intervention included in regular MOH supervision activities?
Community Demand*	Community Demand	Demand creation and community involvement	Is the MOH engaged in generating demand for the intervention among potential clients?

*Addition to WHO six health system building blocks under service provision to capture community involvement.

DATA ANALYSIS AND LIMITATIONS

Mean institutionalization scores were calculated for each intervention in each setting for 2008 and 2013 to assess level of institutionalization at the beginning and end of MCHIP assistance to countries. The scores were compared across WHO building blocks and the more granular 12 components, as well as across interventions.

Detailed information was not available for every country. Scoring the institutionalization of the intervention across the 12 components was a qualitative exercise by the country teams. Despite their internal validity, it was not possible to calibrate the scores for complete comparability. Thus, comparisons of scores across interventions and health system components are intended to be suggestive of patterns rather than definitive and should be interpreted with caution. More in-depth information is available from the in-depth studies, some of which is presented here, but the final report will not be available until July 2014. Data on service expansion varied across settings and comparisons across countries and interventions should be interpreted with caution.

Results

THE INTERVENTIONS

Table 3 gives a brief description of the health interventions and focus of the scale-up experience in each setting.

Table 3. Overview of the scale-up of the six interventions and the focus in the 18 settings

Intervention	Program descriptions	Scale-up focus in each country
Postpartum family planning (PPFP)	▪ Increasing the capacity of health workers with regular contact with women in the antenatal care (ANC), labor ward, or postpartum period to raise awareness and counsel on PPFP; ▪ Positioning the intrauterine contraceptive device (IUCD) within 48 hours postpartum as a suitable PPFP method; and ▪ Building capacity of skilled birth attendants (SBAs) to undertake safe PPIUCD insertions soon after delivery.	India's scale-up focused on building capacity for PPIUCD services. In the Philippines and Tanzania, opportunities were taken to build capacity of a range of health workers to incorporate PPFP counseling and services into their routine tasks.

Intervention	Program descriptions	Scale-up focus in each country
Helping Babies Breathe (HBB)	HBB teaches an evidence-based resuscitation protocol aimed at improving the skills of practitioners attending births to recognize and respond to babies having difficulty breathing in the first minute. HBB training materials consist of training modules (guidelines, standard teaching materials, and simulation-based teaching methods) and a package of equipment (a practice neonate mannequin, a simple suction bulb for clearing newborns' airways, and a low-cost bag and mask ventilator).	In Bangladesh, Malawi, and Colombia, a two-day in-service competency-based training was rolled out nationwide, with follow-up skills practice. In Bangladesh, the training has been included in pre-service nursing and medical curricula. In all three countries, resuscitation equipment was provided. There were also efforts to include key elements in the health management information system (HMIS) and supervisory system.
Uterotonic Use Immediately Following Birth (UUIFB) to prevent postpartum hemorrhage (PPH)	Two uterotonic drugs are used, depending on the setting: ▪ Oxytocin is administered by injection if the birth is at a facility with appropriate storage and SBAs. ▪ Misoprostol tablets taken immediately after birth for women delivering at home. Tablets may be provided at time of birth by an SBA or traditional birth attendant (TBA) or distributed in advance for self-administration.	One setting is the global scale-up effort to advocate for advanced distribution of misoprostol where appropriate. Mozambique and India already had established oxytocin as a preventive for births in government facilities. Policies for advanced distribution of misoprostol had been developed in both countries by end of the review period.
Integrated Community Case Management (iCCM)	iCCM of childhood illness is an approach to reduce morbidity and mortality of children under five years old in hard-to-reach or underserved communities. Care is delivered by community health workers (CHWs) (paid or volunteer). CHWs provide first-line treatment for malaria, pneumonia, and diarrhea and referral for serious cases.	In DRC, the iCCM program was already in place by 2008. It aimed to cover selected priority areas. In Rwanda and Mali, the programs were being introduced building on previous experiences of community-based programs delivered by NGOs or government CHWs. Rwanda's program included urban and rural communities, and Mali's targeted communities five kilometers or more from health centers in five of the country's eight regions.
Prevention of malaria in pregnancy (MiP) focusing on intermittent preventive treatment in pregnancy (IPTp)	IPTp with an antimalarial to pregnant women early in the second trimester and once a month up to the time of delivery is one component of a three-pronged approach to reducing the number of women contracting malaria while pregnant. The other two components of the MiP approach are (1) case management of pregnant women with malaria through detection and treatment and (2) use of insecticide-impregnated bed nets (or insecticide-treated nets—ITNs) by women during their pregnancy. Scale-up of MiP requires collaboration between malaria control and maternal health units.	Kenya, Ghana, and Burkina Faso already had MiP policies and strategies in place, which were strengthened during the review period. MCHIP and others placed effort in encouraging integration of policies and closer cooperation between the malaria and maternal and child health authorities within the MoH. All countries reviewed and harmonized policies, had training, and engaged in community education and promotion.
Introduction of new and underutilized vaccines (NUVI), specifically pneumococcal conjugate vaccine (PCV) to prevent pneumonia	Introduction of PCV into the existing national immunization program's health service.	In Malawi, Kenya, and Tanzania, scale-up involved preparing for the national introduction of the new vaccine through development of guidelines on eligibility, training, supply chain and vaccine management, and monitoring and evaluation.

The summary of the overall results in Table 4 below shows the achievements, success factors, and challenges for each intervention. These summary results are followed by a brief introduction of the interventions in the 18 settings, a summary of the scale-up outcomes (institutionalization and expansion), and an analysis of the elements and strategies used to achieve these outcomes.

Table 4. Summary of overall results by intervention

Intervention	Achievements	Success factors	Challenges
PPFP	High delivery load hospitals in all countries have taken up PPFP counseling and provision of PPIUCD in all three countries.	Advocacy, training in counseling and clinical skills; monitoring implementation for quality in India and Philippines. Strong government ownership, involvement of many NGOs and development partners, active resource team.	Introduction of a new task; overcoming initial resistance from providers about PPIUCD.
HBB	Large numbers of health workers trained, HBB approach incorporated into national essential newborn care guidelines in all three countries.	Involvement of pediatric associations, strong government ownership.	Scale up failed to anticipate the difficulties in changing clinical practice and therefore did not add strategies to support change post training. Timing and availability of external funds.
UUIFB	The two country cases have adopted a policy supporting advanced distribution of misoprostol for home births.	Advocacy, sharing of international evidence, developing methods for estimating coverage as an advocacy tool.	Concerns related to the safety of community use of misoprostol and congruence with policies to encourage institutional births.
iCCM	Extensive expansion of community-based identification and treatment of childhood malaria, pneumonia, and diarrhea.	Government ownership, tailoring delivery platforms to existing services, supplies of medicines, community support.	Ongoing costs for rewarding community health workers, integration with other parts of the health service, concerns about the quality of service provision. Timing and availability of external funding a constraint in two countries.
MiP/IPTp	Some improvements in IPT2 coverage during most recent pregnancy (pre-2008 to 2012 or later): • Ghana 46% to 65% • Burkina Faso 1% to 39% • Kenya 15% to 29%	Coordination, harmonizing of policies, training.	Difficulties in achieving shared ownership between malaria control and maternal health units led to limited support for antenatal care providers to adopt the practice. This process worked best in Burkina Faso, which also had the largest gains in coverage.
NUVI/PCV	Near universal coverage of PCV in the first full year following introduction.	Built on the strong national immunization program, promotion materials, training, strong MOH and development partner coordination.	Short time frames, limited government resources to expand service capacity (e.g., cold storage, waste management).

SCALE-UP OUTCOMES: INSTITUTIONALIZATION AND EXPANSION OF INTERVENTIONS

Figure 3 displays the mean institutionalization scores derived from the institutionalization matrices over time. HBB and PPFP started at low levels of institutionalization in 2008. iCCM and MiP were at an intermediate level of institutionalization in 2008—building from platforms that existed. In the case of iCCM, the intervention built on the previous experience with case management. In Mali there were already community health activities, even though they did not include case management. Uterotonic use (oxytocin for facility deliveries) and the immunization

program were already well established in all settings. The six high-impact interventions had varying success in institutionalization, but all demonstrated improvements. There is relatively low variability between mean scores for the six interventions in 2013, ranging from 2.8 to 3.8 on a scale from 0 to 4; however, there is larger variability across the 18 settings, ranging from 2.2 to 4.0. The duration of the scale-up effort explains part of this pattern. PPFP, HBB, and misoprostol (UUIFB for home deliveries) are interventions which are relatively new on the global health agenda, whereas oxytocin was well established. While iCCM was new in two of the three countries, the scale-up efforts built on existing community-based primary health care programs. IPTp was already part of the antenatal care and malaria control programs of the three countries. Although PCV was a new vaccine, it was being introduced into well-functioning national immunization programs in all three countries. In general, the analysis shows that significant progress on institutionalization appears to be possible over the relatively short time span of five years. However, this initial analysis is across all health system building blocks. To give a sense of the difference in the profiles of progress for a newer intervention (HBB) compared to a more mature intervention, Figure 4 compares the average progress made in this five-year period for NUVI, which builds on the immunization delivery platform, and for HBB, which rolled out in a more "vertical" fashion—in other words, it initially had separate trainings and was not immediately incorporated within supervisory and logistic systems. There was progress toward similar institutionalization scores for governance (policy, coordination, leadership). But the lag in institutionalization was more in terms of service delivery support (supervision, QI) and commodities. Between countries there was variation for the same interventions that is beyond the scope of this brief summary to explore. The text boxes in the results section try to give a flavor of the variations in roll out and their power to explain some good practices. The landscape and full case studies for PPFP India and iCCM Mali to be disseminated in July 2014 will have more detail.

Figure 3. Mean institutionalization score, by intervention, 2008 and 2013
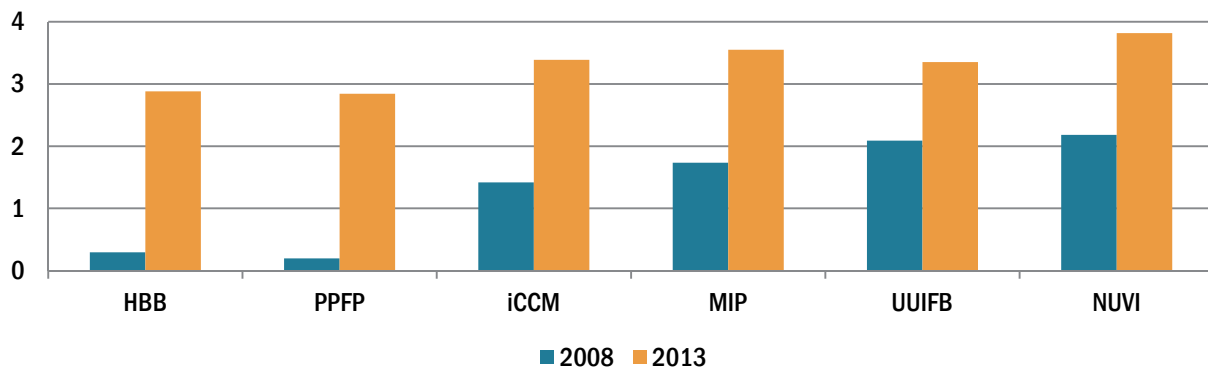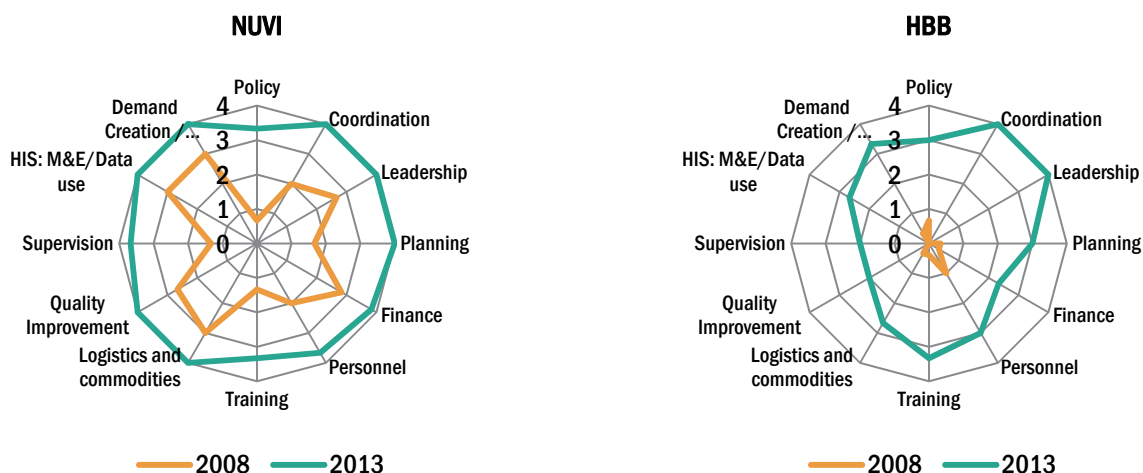
Figure 4. Profiles of progress in institutionalization for HBB and NUVI from 2008 to 2013

Aggregated institutionalization scores show that the governance components of policy development, coordination, leadership, and planning increased significantly between the beginning and end of the review period and rose to the highest levels. Although the differences are not great, there was less reported progress on financing, supervision, and M&E. A lower mean score for financing indicates that the intervention is still not receiving a line item in a number of settings, and there is continued reliance on development partners for financing the scale-up effort and ongoing program delivery. An outlier in this regard is India for PPFP, which not only has a line item for the program (giving it a maximum score of 4), but also has begun to take on financing from domestic sources for PPFP. The institutionalization scores for resourcing health personnel and supply chains were relatively high. Training also scored fairly high. Institutionalizing processes that reinforce quality service delivery (such as quality improvement, supportive supervision, and data use) have the lowest scores. Institutionalization of demand creation or community engagement was scored slightly higher.

SERVICE EXPANSION

Table 5 summarizes the extent to which the intervention expanded through the national health system and reached intended beneficiaries. Overall, interventions with higher institutionalization scores had also reached a higher proportion of the population.

Table 5. Expansion by 2013 of the six interventions in 18 settings

Intervention	Expansion of the intervention to facilities, areas, and health workers	Coverage of intervention among intended beneficiaries
PPFP	▪ In India, PPIUCD introduced in at least two sites in 19 states and in all district-level facilities in six states. ▪ In the Philippines, 40 percent of districts have a PPFP program, and the 10 facilities with PPIUCD services reach 31 of the country's 81 provinces. ▪ In Tanzania, 500 health workers have been trained and 14 percent of districts are implementing PPFP.	▪ By 2013, PPIUCD acceptance rates in sites where the service was introduced in India averaged between five and 10 percent.* ▪ In Philippines, the percentage of women counseled ranged from six to 80 percent in the 10 facilities where PPIUCD service was introduced.

Intervention	Expansion of the intervention to facilities, areas, and health workers	Coverage of intervention among intended beneficiaries
HBB	Almost all skilled birth attendants in Bangladesh, one-third in Malawi, and those in priority sites in Colombia attended the two-day competency-based training.	- The intervention had expanded almost universally in all three countries. - Impact evaluations in Bangladesh and Malawi found that the introduction of the intervention had no effect on clinical practices.
UUIFB	- A uterotonic is routinely provided for PPH prevention in almost all government facilities in India and Mozambique. - Policy agreement in both India and Mozambique to scale up misoprostol.	- About half of all births in Mozambique and India are in government public health facilities; utilization of uterotonic drugs in these settings was already high at the beginning of the period and did not change. - Quality of service provision was a focus of effort in Mozambique, but no definitive data on improvement yet exist. - Service delivery not started for misoprostol in India and Mozambique.
iCCM	- CHWs were recruited, trained, and established in eligible communities in Rwanda and Mali. - The program has been expanded from 10 to 20 percent of districts in DRC and is now a part of services in 11 percent of all facilities.	- iCCM programs are available to 100 percent of people in Rwanda, 19 percent in Mali, and three percent in DRC. - CHWs are estimated to be treating 20–40 percent of cases of targeted illnesses in the communities where iCCM has been introduced in Mali.
MiP/IPTp	- Training in MiP reached 13,000 health workers in Ghana. - Training reached most health workers in malaria-affected areas in Kenya. - Training reached only one or two participants per facility in Burkina Faso.	Recent household survey data not available, but there is evidence of increased coverage of at least two doses of IPTp during pregnancy in all three countries from comparably collected Demographic and Health Surveys (DHSs), Multiple Indicator Cluster Surveys (MICS), or Malaria Indicator Surveys done in last four years, compared with data from before 2008.
NUVI/PCV	PCV introduced through the national programs to all parts of each country.	In the first full calendar year following introduction, HMIS data reported to UNICEF showed all three countries achieved over 95 percent of eligible children fully vaccinated with PCV through the routine immunization system.

* Definition: PPIUCD acceptance among women counseled of all women giving births at facilities with trained service providers.

The introduction of PCV in three countries and iCCM in two of three countries met the high targets set for reaching universal coverage and expanding sites, respectively. The coverage for iCCM is encouraging, but needs to be interpreted with caution, as there are no data on utilization of community health workers within target districts. Hodgins, Pullum, and Dougherty (2013) have done a re-analysis of data from 42 DHS and MICS surveys showing that even in settings with well-established iCCM programs (e.g., Nepal, Ethiopia, and Senegal), utilization can still be quite low. This analysis shows that the presence of trained and equipped health workers, while necessary, is not sufficient for significant population coverage. While IPTp rates have improved, they have not yet achieved the President's Malaria Initiative (PMI) target coverage rates (80%). PPFP and HBB had the lowest mean institutionalization scores (Figure 3). It appears that in terms of expansion and coverage, these interventions also had not had national impact by the end of 2013. In the case of PPFP, the timing of the intervention had a role: the programs had not yet been expanded to all facilities. For HBB, impact evaluations found that the introduction of the intervention has not yet had the intended effect on clinical practices among skilled birth attendants. The importance of the concept of "impact at scale" through effective coverage comes to the fore. That is, in both Bangladesh and Malawi, large

numbers of health workers have been deployed and facilities involved in HBB, but until a mechanism is found to significantly improve health worker performance, impact cannot be achieved for HBB. There was no change in service provision for UUIFB because advanced distribution of misoprostol is still at the planning stage in the two selected countries and both had already expanded uterotonic use for PPH prevention through government facilities.

SCALE-UP ELEMENTS: INTERVENTIONS, ENVIRONMENT, IMPLEMENTERS, AND RESOURCE TEAMS

This section of the document examines the scale up process and elements, as outlined in the ExpandNet framework, and describes scale up best practices and lessons learned for improving expansion and institutionalization of the interventions.

Characteristics of Interventions

ExpandNet (Simmons and Shiffman 2007; see Text Box 1) describe the characteristics of interventions that are more easily scaled up. All these interventions were based on sound evidence and most were observable and testable (e.g., treatment interventions or preventive measures against prevalent conditions). There were other aspects that made them variably difficult to scale up. Interventions that are "simple" and "easy to install and understand "(Yamey 2011) like oral rehydration solution (Chowdhury and Cash 1996), should be more easily scaled than ones that are more complex and have multiple facets, like iCCM.

> **Text Box 1: Characteristics of Interventions More Easily Scaled up**
>
> - based on sound evidence or espoused by respected persons or institutions in order to be **credible**
> - **observable** to ensure that potential users can see the results
> - **relevant** for addressing persistent or sharply felt problems
> - have a **relative advantage** over existing practices
> - **easy to install** and understand
> - **compatible** with the potential users' established values, norms, and facilities
> - **testable** without committing the potential user to complete adoption

Table 6 summarizes some of the characteristics of the six interventions. None was particularly easy to install (i.e., they were complex). The interventions required frontline workers to adopt new tasks—in the case of iCCM, several new tasks. All interventions but iCCM used existing service delivery platforms. iCCM is delivered through CHWs; however, new cadres of CHWs had to be formed because the existing ones had different profiles, being involved in health promotion (i.e., an intervention that was preventive, occurring on a routine schedule, and requiring less judgment). In most cases, the health workers who needed to adopt the new tasks were working in the frontline and had modest levels of pre-service training and low or no salary.

An argument could be made that HBB is the "simplest" of these interventions because it involves modifying a task already done by existing, qualified health providers working in their familiar setting. Guidelines and teaching modules had been refined to a few steps to follow: identifying babies who are not breathing and undertaking stimulation and resuscitation if required (Helping Babies Breathe 2011). The impact evaluations in Bangladesh and Malawi have indicated that, to date, practice has not improved. Although the evaluations focused on systems elements that need strengthening, there are aspects of the intervention that may be making it more difficult to scale up. It is not used on a routine basis, making skills maintenance an issue. Although speculative, a less tangible issue that may be in play is the idea of its "compatibility with values" and whether it is "relevant for addressing . . . sharply felt problems."

Jeremy Shiffman (2011) has written about the rapid rise in prominence of the issue of newborn survival that has not spread everywhere and may not have convinced the health workers: "While the rise of global attention has been rapid, it is still circumscribed. No more than a

handful of major organizations involved in global health make the issue a central priority, if indicated by the provision of financial and technical resources. Moreover, there is little evidence that pressure from grassroots organizations or the governments of countries with high neonatal mortality had a major role in the emergence of global attention. Perhaps as a result, the extent to which these governments have responded with funding, policies, and programs remains unclear, as does how much difference these global promotional efforts have made in shifting widespread grassroots fatalism surrounding newborn deaths."

Another seemingly simple intervention like PCV required detailed planning at every level of the health system to ensure that all eligible children received the vaccine throughout the country soon after the launch date. Scaling up interventions raises issues of workload, knowledge and skills acquisition, necessary supplies and equipment, encouragement or motivation, and accountability. How scale-up strategies addressed these issues was a major determinant of scale-up success—and may be more important than the inherent nature of the intervention itself.

Table 6: Characteristics of six maternal, newborn, and child health interventions

Intervention	Health care setting and providers	Nature of the new service or task	Uses new or existing service platform?	Frequency of Use? (routine or occasional)
PPFP	Community health workers, antenatal care providers, vaccinators and skilled birth attendants	Adding component to an existing system, new task	Uses existing service delivery platforms	Routine
HBB	Skilled birth attendants	Modifying one task, existing system	Uses existing service delivery platforms	Occasional
UUIFB (Oxytocin and misoprostol)	Community health workers and antenatal care providers	Adding a component to an existing system, new task (misoprostol)	Misoprostol will use existing service delivery platforms	Routine
iCCM	Community health workers and health care providers	Sometimes completely new service requiring new workers; in other cases new tasks for existing workers	Creates a new service delivery platform	Occasional (but depends on caseload)
MiP/IPTp	Antenatal care providers	Adding component to an existing system, new task	Uses existing service delivery platforms	Routine
NUVI/PCV	Vaccinators and supporting personnel	Adding component to an existing system, similar to what is already being done	Uses existing service delivery platforms	Routine

iCCM is a complex intervention, requiring new cadres of workers with relatively short durations of training to take up new tasks using an entirely new platform of community-based delivery. Yet iCCM was institutionalized and expanded in the three settings. The fact that iCCM had some of the characteristics listed by Simmons and Shiffman (2007) may well explain this positive experience (i.e., iCCM is espoused by respected persons or institutions (e.g., WHO and UNICEF], is relevant for addressing persistent or sharply felt problems, and is compatible with the users' established values in that it demonstrates government commitment to supply services to underserved populations).

Resource Teams and Implementers

Many actors were involved in scaling up the six interventions, especially at the global and national levels. Globally, respected international organizations such as WHO and UNICEF were important players. Advocates often formed consortiums comprising technical experts, private and bilateral donors, and, in some cases, private industry. Within countries, technical working groups were formed for some interventions. This was a successful strategy when the groups met regularly, which was not the case for MiP in Burkina Faso and Kenya. Many but not all of these teams had the characteristics of successful resource teams outlined by ExpandNet (Simmons and Shiffman 2007) (see Text Box 2).

Text Box 2: Characteristics of Successful Resource Teams

- effective and motivated **leaders** who command authority and have credibility with the user organization
- a unifying **vision**
- an **appreciation of the user organization's** capacities and limitations
- an **understanding** of the political, social, and cultural environments
- the ability to generate financial and technical **resources**
- relevant technical skills, management skills, and training capacity

The main drivers of the scale-up efforts were usually national MOH officers from the relevant units. But the ambitious targets to expand programs rapidly made it necessary to engage additional human resources to manage the scale-up. Technical advisors, particularly through MCHIP, played a major role in encouraging the scale-up of PPFP, HBB, and some of the MiP/IPTp and iCCM programs. Subnational levels of the MOH always had some role to play in scale-up, but in many instances were passive recipients of inputs such as training programs and new health workers rather than the drivers of the initiatives. The extent to which government prioritizes the intervention determines the degree of government involvement in taking an active role in coordinating and implementing scale-up. But in terms of resource teams, there have been different avenues and approaches, and none clearly stands out as the most successful configuration for a resource team.

Scale-Up Strategies

DISSEMINATION AND ADVOCACY: POLICY ENVIRONMENT AND GOVERNMENT OWNERSHIP

Government ownership is important to scale up. On the other hand, the mere existence of policies and guidelines does not necessarily mean the government is prioritizing the scale up of innovations; all but two cases had some relevant polices or guidelines established prior to 2008, the start of the review period. It can take time for a policy, whether it has been formally adopted or remains in the draft phase, to be prioritized. Invariably the trigger for increased prioritization is a mixture of sound national and international public health evidence, and the opening of policy windows which make prioritization advantageous. Publication of international guidelines (WHO) were an important factor in gaining support within a country. The necessity of a pilot within a country is less important than previously documented with ExpandNet (see Text Box 3). Most interventions examined were either based on international experience, with or without some local testing.

Text Box 3: Are pilots necessary?

The necessity of a pilot within a country is less important than previously documented with ExpandNet. HBB had national leaders as champions in all three countries based on evidence they had heard globally. On the other hand, some interventions for which there was less technical consensus (e.g., misoprostol) benefitted from piloting in some settings.

Mobilizing Resources

In all the scale up studies there was external funding from development partners, a result of the selection of case studies in which MCHIP was involved. The additional funds were usually directed towards the development of guidelines and training curriculum, the training of master trainers, launch and dissemination of results. In some cases, externally funded technical advisors performed important coordination and facilitation roles to support the MOH in introducing the innovation in districts and facilities. External funds were also often used to pay for impact and process evaluations. About half of the innovations anticipated little or no extra resources to maintain the innovation once it had been scaled up. However, in most of the cases where additional costs were anticipated, there were no clear plans for meeting those costs.

MONITORING AND EVALUATION
Monitoring and data review

There was relatively little use of monitoring and evaluation in these scale-up studies. Characteristics of the scale ups which may have contributed to the lack of routinely collected information about implementation process and population coverage being shared and used by the resource team include the rapid pace of the scale up; the emphasis on policy and training over service delivery in some cases; and the lack of explicit performance targets to use as benchmarks for scale up implementation. Every scale up case was able to measure the basic outputs of the scale up. In almost all of the interventions, health workers recorded their activities. They are motivated to do so if the recording helps her to do her job or if the information will be reviewed by her manager and she will be held accountable. For most interventions conducted outside of facilities, recording of activities was common. Where activities reports were available, they were not necessarily used by the resource team to track implementation. The inclusion of an intervention-specific indicator in the national HMIS was achieved only in some of the scale

> **Test Box 4: Monitoring for Quality: PPIUCD in India**
>
> Quality is important for all health care, but the sensitivities surrounding family planning in India made it even more essential that postpartum intrauterine contraceptive devices (PPIUCDs) were scaled up in a manner that ensured voluntary, informed choice. Since PPIUCD insertion was a relatively new procedure, providers, policy makers, and the general public also needed to be assured that it was safe and effective. Monitoring was the main strategy used to address quality concerns during scale-up. Every month, facilities reported on the number of deliveries, the number and type of PPIUCD insertions, and where women were counseled. The reports also included the number of women with a PPIUCD who had to be followed up afterward and any relevant outcomes such as expulsion, infection, or removal. These reports went up through the districts to the state health departments. Copies also went to the technical advisors, who used them as talking points with state and national officials. Supportive visits were scheduled to facilities with unusually high or low acceptance rates to determine the cause. The data on follow-up helped to assure stakeholders that the method was safe. However, in absence of clear policies on how follow-up visits were to be achieved, the monitoring data on follow-up were not used proactively as an indicator of quality.

up cases. This achievement was neither necessary nor practical at the early and middle stages of scale up, as inclusion in the HMIS almost always occurs after an intervention becomes a standard practice across a country. During scale up, there is a need to look at many aspects of implementation, especially those sensitive to service quality. However, measures that explicitly capture quality were rare. PPFP was an exception (see Text Box 4).

Measuring coverage and impact

Measuring the outcomes of scale up is a crucial part of global learning about how to reduce mortality and improve health in low and middle income countries. A focus on outcomes also provides clarity and direction during the course of scale up. This analysis reviewed the data requirements and availability of coverage measures, where coverage is defined as the persons who receive the new service as a proportion of all people who need the service. However, only half of the program areas have recent coverage data in the case study settings. Impact

evaluations of scale ups were only done for one innovation (HBB). These were structured observational studies to measure changes in clinical practice as a result of the HBB program in Bangladesh and Malawi.

ORGANIZATIONAL PROCESSES

Logistics and supply chain

The reliable provision of equipment and supplies to the frontline health worker is essential for scale up. Long term or frequent intermittent stock-outs of essential medicines and equipment, training materials, and job aids, registration books, and forms can compromise the delivery of services. Where challenges occurred, it was at all parts of the supply chain. The most common were failure to procure centrally in a timely matter due to financial constraints or administrative error, and lack of capacity to get supplies from the district or facility to the service sites. The quality of the scale up was compromised when these problems were not addressed either by slowing the pace of expansion or proactively finding other solutions to obtain the necessary inputs.

TRAINING

Training was a nearly universal strategy among scale up cases and scored high on institutionalization at the end of the review period. However, the reality is that good training is insufficient to change practice of established workers, and even new workers benefit from reinforcement of new skills at their workplace. Many scale up cases faced pressure for rapid national scale up, translating into many health workers being trained in a very short time without opportunities to test effectiveness. The need to train large numbers of people meant that training sessions were rarely held at the work place, and in some cases involved little or no practical application in a work setting like the participants' own. Training enough workers or the right workers also was a challenge. In some of the scale up cases, a small number of clinicians were brought out of their districts for training, then they were expected to find the time and support to pass on their knowledge to others. Training only one or two providers from a facility did not result in the provide becoming confident and skilled in service provision. Provision of job aids or guides to the clinicians would have been helpful to make sure they had the information they needed to perform the new service.

Quality improvement, supportive supervision, and post-training support

Reasons for poor service delivery include lack of confidence or skill of the provider, resistance from co-workers, and lack of support by management. Strategies to ensure that the intervention was delivered safely and appropriately included work site orientations, supportive supervision visits in addition to the standard supervision cycle, post-training or refresher training, and close review of performance data. These strategies are time intensive and potentially costly. However, such approaches are integral to the scale up process and are not intended to be on-going.

> **Text Box 5: Naming a Strategy—When does it become a barrier to integration?**
>
> Naming a new strategy calls attention to decision-makers, makes it more tangible, and easier to communicate. On the other hand, at some point a new practice needs to become integrated with the rest of routine care and having a specific name can cause the strategy to seem foreign and "project based." At what point should a name be shed?

Integration within the existing health system and organizational change

A complementary strategy to ensuring that an intervention is fully implemented is ensuring that managers and health care workers view the intervention as an essential component of their regular work and not as an add-on (see Text Box 5). Some scale up cases did not have explicit strategies to embed the innovation within the workplace and health system, which seriously compromised the potential for widespread adoption of the innovation. Organizational change is

a challenge when new tasks are being added. The alignment of the current program with the new program appears to be critical. Where innovations require a change in organizational culture and not just new tasks, good practice was to involve all staff at a worksite in an orientation about the new practice either before or after training. This orientation helped to build a common understanding about the innovation, created a climate that was more encouraging for providers to adopt the method, and helped dispel rumors and misunderstanding.

DEMAND CREATION AND COMMUNITY INVOLVEMENT

Most of the scale up cases incorporated some elements of creating demand for the innovation through information and educational materials such as posters, public launches, media coverage, television, and radio advertisements. However, the scale up cases rarely involved the community, as they tended to be focused on improving the supply of health services. Opportunities appeared to have been missed to have potential clients give input in the design of the scale up into how they would like to receive services; however, where scale up cases did harness community involvement, it had a major impact on service delivery. For instance, Kenya employed a standard communication campaign about the new vaccine, and the public responded so positively that the health system was nearly overwhelmed. In the India PPFP case demand creation focused on counseling at the facility. As the program was implemented it was recognized that more needed to be done in the community and at ANC visits in other sites; however, this increased involvement at the community level is proceeding in an ad hoc way. The number of acceptors at this point is largely dependent on the work in the facilities of counselors and labor ward nurses and doctors.

Lessons Learned

THE INTERVENTION

- Public health interventions are not simple, and this fact should be recognized in planning to scale-up. A concise, measurable definition of what is being implemented or scaled up is crucial, as is the ability to measure it.

- Clarity about what constitutes the intervention is best articulated in policies and guidelines that describe what is expected of frontline workers, their managers, and other parts of the system. Failure to gain buy-in at this stage will result in slow or uncoordinated adoption that will give the impression to frontline workers that the process is part of a project rather than something to be institutionalized into the national health system.

SCALE UP STRATEGIES
Advocacy

- Without government ownership and leadership, the scale up of an innovation cannot achieve lasting health benefits. Although pilots and advocacy can help to create an environment for government ownership, without high level commitment, effectively communicated to every level of the health system, other scale up strategies should not be attempted.

- The congruence of current global opportunities and long standing national priorities and approaches is a window to advocate for and launch a scale up of key interventions? Invariably, the triggers for increased prioritization are a mixture of sound national and international public health evidence and the opening of policy windows which make prioritization advantageous. In country presence of technical advisors in Resource Teams is

important to take full advantage of the opportunities for rapid progress when these windows open, which are often due to factors outside the control of those managing the scale up process (e.g., appointment of a new Minister who is a champion, ascendance to power of a political party trying to show responsiveness to the population, etc.)

- Concerns about the appropriateness of the intervention for the country can constrain rapid translation from evidence to policy to implementation. This seems to have been a problem in some of the countries with iCCM at an earlier stage (Medical Research Council of South Africa 2014)

Capacity building

- Training was a nearly universal strategy among scale-up cases and scored high on institutionalization at the end of the review period. However, the reality is that training is insufficient to change practice of established workers, and even new workers benefit from reinforcement of new skills at their workplace.

- Training enough workers or the right workers was also a challenge. In some scale-up examples, a small number of clinicians were brought out of their districts for training and then were expected to find the time and support to pass on their knowledge to others. Training only one or two providers from a facility did not result in the providers becoming confident and skilled in service provision. Provision of job aids or guides to the clinicians would have been helpful to make sure they had the information they needed to perform the new service.

- Where challenges occurred at all parts of the supply chain, the most common were (1) failure to procure centrally in a timely matter due to financial constraints or administrative error and (2) lack of capacity to get supplies from the district or facility to the service sites. The quality of the scale-up was compromised when these problems were not addressed by either slowing the pace of expansion or proactively finding other solutions to obtain the necessary inputs.

Quality improvement, supportive supervision, and post-training support

- Reasons for poor service delivery include lack of confidence or skill of the provider, resistance from co-workers, and lack of support by management.

- Strategies to ensure that the intervention was delivered safely and appropriately included orientations at the work sites, supportive supervision visits in addition to the standard supervision cycle, post-training support or refresher training, and close review of performance data. These strategies are time intensive and potentially costly. However, such approaches are integral to the scale-up process and are not intended to be ongoing.

Integration within the existing health system and organizational change

- A complementary strategy to ensuring that the intervention is fully implemented is ensuring that managers and health care workers view the intervention as an essential component of their regular work and not as an add-on. Some scale-up cases did not have explicit strategies to embed the intervention within the workplace and health system, which seriously compromised the potential for widespread adoption of the intervention.

- Organizational change is a challenge when new tasks are being added. Aligning the new program to the existing program appears to be critical to success.

- Where interventions require a change in organizational culture and not just new tasks, good practice was to involve all staff at a work site in an orientation about the new practice,

either before or after training. This orientation helped to build a common understanding about the intervention, created a more encouraging climate for providers to adopt the method, and helped dispel rumors and misunderstanding.

MONITORING AND EVALUATION

- Resource teams need to identify the quality and coverage indicators and targets they expect to achieve, collect data to monitor performance, and have mechanisms to respond to findings.

- Frequently review feasibly collected outcome data. In order to track progress and make course adjustments, one needed component is reliable information on service expansion that is "good enough" for making management decisions in real time. Resource teams need to be inventive in devising feasible ways of tracking outcomes. (See Text Box 6.)

> **Text Box 6: Feasible Tracking of Service Expansion**
>
> National immunization programs keep a close eye on coverage by tracking the number of infants receiving a third dose of a three-dose vaccine, divided by the annual number of births. UNICEF has recently made a similar estimate of iCCM coverage with a ratio of numbers of cases of treated pneumonia, diarrhea or malaria to under-five year olds by CHWs to the expected number of cases in the populations covered based on annual incidence rates for each disease derived from other sources (Diaz, 2014). The estimates of oxytocin coverage trialed by MCHIP using key informants is another example of an outcome indicator that can be tracked and used to modify scale up strategies as the innovation is being expanded.

DEMAND CREATION AND COMMUNITY INVOLVEMENT

- Most of the cases incorporated some elements of creating demand for the intervention through information and educational materials such as posters, public launches, media coverage, television, and radio advertisements.

- However, the scale-up cases rarely involved the community, as they tended to be focused on improving the supply of health services. Opportunities appear to have been missed in the design phase of the scale-up to have potential clients give input into how they would like to receive services. Where those involved in the scale-up cases did harness community involvement, it had a significant positive impact on service delivery.

Conclusions

The study of these cases is a unique opportunity to examine a broad swath of RMNCH interventions and draw some generalizable lessons, in a way that is not possible when looking at a single intervention, even in multiple settings. The analysis is still preliminary, as it does not include all the lessons from the even more in-depth studies of iCCM in Mali and PPFP in India that are in a separate report to be disseminated in July 2014; however, some broader lessons are already apparent. The examination of these 18 cases highlighted the interactions between different aspects and elements of the scale up process and the relative importance of those elements in different contexts. Summing up many of the individual lessons from the previous section, we draw four overarching conclusions.

System thinking is critical. Public health interventions have multiple components and need supports across the health system.

Almost all of the scale up cases took a comprehensive systems approach, seeking to address how the new practices would be supported through new governance, resourcing, and service delivery processes. Some of the most highly successful cases were those that were most driven by system thinking, like the NUVI scale up examples. All the interventions drew on robust international evidence of effectiveness but were implemented in ways which were congruent with national health systems and structures.

We actually are NOT scaling up technical interventions like HBB or iCCM. What we are actually doing is solving the **system support bottlenecks** for those interventions in varying contexts (this is how the Immunization Team conceives the scale up of NUVI).

The ability to reach "impact at scale" is only as good as the weakest part of the process—so, for instance, even if training and supervision are good, but commodities are absent, impact will not be achieved. Similarly, if the commodity is present but training follow-up and supervision systems are weak, the commodity may not be used well, again lessening impact at scale.

Think with a "quality end in mind"

Getting high coverage with poor quality and then trying to "fix" quality issues later is risky. Donor and MOH priorities may well shift later, robbing the ability to fix the problems. And high INEFFECTIVE coverage will not achieve impact at scale and may well make people disappointed or cynical.

The pace of the scale up is likely to be a long-term process (i.e., 10, even 20 years) and does not happen at a constant rate.

- One of the limitations of this review is that it focused on activities in a relatively narrow window of five years. A wide-ranging retrospective review of large-scale public health successes over the last 40 years came to the conclusion that for an intervention to reach and sustain national-level impact, steady funding (including from external sources) was required for a 10- to 20-year period (Levine 2007). Shorter-term projects run the risk of making the scale up process seem like a "project" (e.g., separate vertical trainings, parallel registers and reporting) when in fact it must be a long-term country-owned process. Shorter-term projects need to make choices about how to support scale up without distorting the MOH's overall process of reaching impact at scale.

- There is pressure on all sides to make things happen fast (governments want to be responsive to their people; technical agencies and donors also want results as quickly as possible to demonstrate their competence and investments well spent).

- Another best practice in terms of pace is phased scale-up, as was done in India. This is the classic method of scaling up, but is not always used now with the pressure to go to national scale immediately (see Text Box 7).

- There will be key moments outside the control of a project to help the MOH make great progress (e.g., iCCM Mali and PPFP India—which NOW fit into national plans and priorities and can progress quickly), but there

> **Text Box 7: Phased Scale Up of PPFP in India**
>
> The scale up was phased from a handful of sites to demonstrate that PPIUCD was acceptable and feasible to larger and larger targets. There were a number of process innovations (counselors, training nurses, supportive visits, on-site training) developed at an early stage and then built into the expansion phase. If India had tried to scale up through the whole country all at once or in every facility in the high-focus states, the learning about these innovative implementation strategies may not have been so easily incorporated.

will be other times where progress will be slow and difficult (e.g., iCCM in Kenya in the past before the MOH made a commitment in its national plans).

There are times when important development principles will be in conflict with each other.

To review one example: In the scale up of HBB there was a conflict between "data use for action" and "country ownership." Bangladesh made the decision that in order for HBB to be country owned, the Resource Team recommended waiting to put HBB indicators into the registers until the MOH printed new registers. They did not want to give the impression that HBB was project-driven, but it also meant that the team managing the scale-up process was "driving blind." They did not have information on where things were working well or not.

Recommendations for Future Action

This retrospective study generated useful findings that can inform future scale up efforts. In addition, it is essential to prospectively study scale up of RMNCH interventions, to assess this dynamic and changing process, not unlike developmental evaluation (Gamble 2006). The sorts of conclusions such a study would draw would not be to discover some sort of "silver bullet" for scaling up, but rather would help managers and decision-makers in country in real time—to guide the many smaller decisions that project managers make whose cumulative impact helps reveal good practice for scale up (Hodgins 2013). Trying to apply some of the lessons from immunization to other interventions (see Text Box 8) should also be a focus of future prospective implementation research on the scale-up process.

> **Text Box 8: Some Best Practices from Immunization**
>
> New vaccines had the greatest change in coverage (0% to >90% in all three examples). They started from relatively high levels of institutionalization in 2008 but then moved even higher. Immunization has some inherent advantages, four of which we delineate. Which of these was definitive and which might be replicable for other interventions is a topic for further research.
>
> - Established implementer with structure from national to local level (i.e., national Expanded Programme on Immunization [EPI] program)
> - Established Resource Team with recognized authority
> - Clear intervention, which goes beyond just a description of the technical intervention only
> - Feasible "good enough" data used for action within routine information systems

References

Chowdhury, A. and R. Cash (1996). *Simple Solution*. Dhaka, Bangladesh: Bangladesh University Press.

Cooley, L. and R. Kohl (2006). *Scaling Up—From Vision to Large-Scale Change: A Management Framework for Practitioners*. Washington, DC: Management Systems International.

Diaz T. (2014). Multi-Country Analysis of iCCM Program Data. Presented at CCM Symposium, March 2014, Accra, Ghana. Accessed June 2014, CCM Central website http://ccmcentral.com/iccm-symposium/presentations/#tab13.

ExpandNet (2009). *Practical Guidance for Scaling Up Health Service Innovations*. Geneva: World Health Organization.

ExpandNet (2010). *Nine Steps for Developing a Scaling-Up Strategy*. Geneva: World Health Organization.

Gamble J. (2006). A Developmental Evaluation Primer. JW McConnell Family Foundation, http://www.mcconnellfoundation.ca/assets/Media%20Library/Publications/A%20Developmental%20Evaluation%20Primer%20-%20EN.pdf (accessed June 2014).

Helping Babies Breathe (2011). *Guide for Implementation of Helping Babies Breathe: Strengthening Neonatal Resuscitation in Sustainable Programs of Essential Newborn Care*. Elk Grove Village, Illinois: American Academy of Pediatrics.

Hodgins S. (2013). Focusing on implementation: the power of executing many small advances well. *Glob Health Sci Pract* 1(2):145. http://dx.doi.org/10.9745/GHSP-D-13-00100.

Hodgins S, Pullum T, Dougherty L. (2013). Understanding where parents take their sick children and why it matters: a multi-country analysis. *Glob Health Sci Pract* 1(3):328-356.

Larson, A., J. Ricca, J. Posner, and L. Raney (2014). Lessons Learned from the Scale Up Experience of Six Key High Impact Interventions *in Reproductive, Maternal, Newborn, and Child Health (RMNCH)*. Washington, DC: MCHIP.

Levine, R. (2007). *Millions Saved: Proven Successes in Public Health,* Second edition. Washington, DC: Center for Global Development.

Medical Research Council of South Africa. (2014). Summative report on the external evaluation of the Catalytic Initiative (CI)/ Integrated Health Systems Strengthening (IHSS) programme in Mali. New York, NY: UNICEF.

Shiffman J. March 2011. Blog post on Healthy Newborn Network, http://www.healthynewbornnetwork.org/users/gmvcucoxpk (accessed June 2014).

Simmons, R. and J. Shiffman (2007). Scaling up health service innovations: a framework for action. Chapter 1. Pp 1–30 in *Scaling up health service delivery: from pilot innovations to policies and programmes*. Eds. R. Simmons, P. Fajans, and L. Ghiron. Geneva: WHO and ExpandNet.

World Health Organization (2007). *Everybody's Business: Strengthening Health Systems to Improve Health Outcomes; WHO's Framework for Action*. Geneva: World Health Organization.

Yamey, G. (2011). Scaling up global health interventions: a proposed framework for success. *PLoS Med* 8(6): e1001049.

Annex: Institutionalization Matrix Tool

Health system component	Question	No Competency (0) No health system competency for the intervention	Preparation Phase (1) Key national strategic choices and actions are being made by MOH to establish the needed competencies for the intervention	Introduction (Pilot) Phase (2) Piloting/testing for the competency related to the intervention. External agencies assume the majority of the responsibility for competency.	Early Expansion Phase (3) MOH is beginning to manage the competency for the intervention before full integration into national and subnational systems.	Mature Expansion Phase (4) The MOH has fully integrated the competency for the intervention into national and subnational systems.
		0	1	2	3	4
Policy	Has the MOH implemented the necessary policy elements and practice guidelines to support the intervention?	No steps have been taken to make necessary changes in policy for the intervention.	Policies and guidelines that include the intervention are under discussion.	Policies and guidelines have been developed, and are being tested or being implemented mainly with support of outside agencies.	Policy changes have been adopted; guidelines are being finalized; training is rolling out on new guidelines.	A majority or all of the relevant managers and providers are trained on national policy and guidelines that include the intervention.
Planning	Has the MOH included the intervention in national and sub-national plans?	No steps have been taken to make necessary changes to the planning process for the intervention.	Discussions have occurred about piloting the intervention.	Pilot activity is included in subnational health plan.	Intervention is included in subnational health plan where being implemented OR it is in national health plan, but only for part of the country.	Intervention is included in national health planning processes.
Coordination	Is the intervention included as a regular topic of discussion with appropriate national and subnational coordination bodies?	No steps have been taken to make necessary changes to the coordination process for the intervention.	Intervention has been discussed at least once in coordination meeting(s) between MOH and donors/technical agencies	Pilot activity is occurring in collaboration with national stakeholders and discussed in coordination meetings.	Intervention is included on agenda of key coordination bodies.	Intervention is fully integrated in national and subnational coordination bodies.
Leadership	Are there ongoing leadership efforts for the intervention (at first by champions, and later by an institutionalized group in the MOH)?	Only partner(s) are advocating for the intervention.	There is at least one champion/focal person for the intervention in the MOH. Discussions are preliminary	Advocacy for skills building, quality improvement, and continued program expansion; advocating for integration into existing health programs; Interventions in partners' agenda.	Advocacy for additional funds to support national intervention.	The MOH has assigned personnel to support the management/governance within the appropriate section of the MOH which takes responsibility for its implementation.
Finance	Is the government including the intervention in its budgeting process?	Only discussions are occurring for funding the intervention externally.	External partner(s) fund costs associated with pilot activities covering a small geographical area	Donors fund expansion of intervention; government is considering costs and preparing cost analysis/projections to include intervention in existing budget.	MOH funds much of the costs of the intervention, but has ongoing outside support.	Government includes intervention as a line item in budget
Training	Do appropriate MOH in-service and pre-service curricula include the intervention?	Only discussions have occurred, but no training for the intervention	Only in-service training being done; by outside agencies; and in pilot areas and/or on an ad hoc basis	In-service training conducted only with external TA	In-service training conducted by MOH (may be with external TA). Intervention still not included in pre-service curricula.	MOH leads in-service trainings and has integrated intervention pre-service training

Health system component	Question	No Competency (0) No health system competency for the intervention 0	Preparation Phase (1) Key national strategic choices and actions are being made by MOH to establish the needed competencies for the intervention 1	Introduction (Pilot) Phase (2) Piloting/testing for the competency related to the intervention. External agencies assume the majority of the responsibility for competency. 2	Early Expansion Phase (3) MOH is beginning to manage the competency for the intervention before full integration into national and subnational systems. 3	Mature Expansion Phase (4) The MOH has fully integrated the competency for the intervention into national and subnational systems. 4
Personnel	Are appropriate health worker cadres authorized and are there sufficeint numbers of them to implement the intervention?	No appropriate and recognized cadres of HCW are authorized to implement the intervention.	Discussions are underway about what cadres of health care workers can implement the intervention	Authorized cadres of HCW are implementing the pilot with supervision of MCHIP or other agencies.	Job descriptions have been expanded to include duties (if necessary). MOH staff able to cover some but not all the human resource needs to implement the intervention.	HCW cadres are authorized to implement intervention and are actively implementing the intervention as part of routine scope of practice. There are sufficient HCW to cover the need.
Quality Improvement	Does the MOH QI system include the intervention and is it being implemented?	Intervention not included in QI system and/or activities.	QI system is being modified to include the intervention into in existing relevant materials	External TA providers train health managers in pilot areas in quality improvement (QI)/quality management (QM) approaches, including use of documentation, measurement, monitoring, reporting and assessment.	Standardization of QI approaches into facility and subnational bodies (e.g.. DHMT). External TA providers collaborate with government to mentor facility teams to carry out routine participatory assessment of quality of care; ensure staff buy-in and team building; QI standard operating procedures (SOPs) developed.	QI/QM system institutionalized at local, subnational and national levels and lead by subnational teams.
Supervision	Is the intervention included in regular MOH supervision activities?	Supervisors do not include intervention in their activities	Revisions to supervisory system (e.g., checklists) elements for the interventions are underway to incorporate intervention into existing relevant materials	External TA providers train managers in learning sites on supervision techniques; develop or revise supervision guidelines	External TA providers conduct joint supervision visits with government counterparts; follow up findings of joint supervision visits; training managers on decision-making strategies and evaluating effectiveness of programs.	Supervision guidelines and processes institutionalized within government systems; supervision visits funded and implemented independently by government in all intervention sites
Demand Creation / Community Engagement	Is the MOH engaged in generating demand for the intervention among potential clients?	No demand creation for intervention	Strategy and materials for demand creation for beneficiaries and providers under development	External stakeholders doing all support for uptake of the intervention among potential beneficiaries	Some demand creation being taken up by MOH	Demand creation done by government, integrated with other programs. Community advocacy to increase demand for service.
Commodities and Logistics	Is the MOH procuring and distributing sufficient quantities of the needed commodities within its normal logistics system?	Commodities needed for intervention not included in logistics system nor available through external assistance.	Discussions with MOH and partners about needed supplies/Commodities for intervention	External TA providers train health teams in commodity management. External funded commodities for pilot sites only.	Appropriate commodities available in multiple geographic areas, but procurement and/or logistics managed by external partners	Procurement and logistics for appropriate commodities included in the MoH systems (forecasting, supply, distribution and oversight)
Health Information	Does the MOH collect, report, and use appropriate indicators/information for the intervention?	Appropriate indicators to track intervention not included in HIS	Discussions about need for new indicators and/or data collection and reporting forms.	A pilot experience and/or readiness assessment conducted to test appropriate indicators and/or reporting forms.	New indicators used in some but not all geographic areas and/or indicators collected but not sent through regular reporting chain.	Appropriate indicators for intervention are in National Health Information System (HIS) and are reported on a regular basis.