Prospects for Effective and Scalable Community-Based Approaches to Improve Reproductive, Maternal, Newborn and Child Health (RMNCH)

A Summary of Experiences from the Maternal and Child Health Integrated Program (MCHIP) and the Child Survival and Health Grants Program (CSHGP) and a Review of the Evidence

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The Maternal and Child Health Integrated Program (MCHIP) is the USAID Bureau for Global Health's flagship maternal, neonatal and child health (MNCH) program. MCHIP supports programming in maternal, newborn and child health, immunization, family planning, malaria, nutrition, and HIV/AIDS, and strongly encourages opportunities for integration. Cross-cutting technical areas include water, sanitation, hygiene, urban health and health systems strengthening.

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Abbreviations

ANC	Antenatal care
BCC	Behavior change communication
BCG	Bacillus Calmette-Guérin (vaccine against tuberculosis)
BP/CR	Birth preparedness/complication readiness
BRAC	formerly Bangladesh Rural Advancement Committee
CA	Community agent
CAG	Community action group
CBIO	Census-based, impact-oriented
CCM	Community case management
CHA	Community Health Agent
CHC	Community Health Committee
CHERG	Child Health Epidemiology Reference Group
CHW	Community health worker
CSHGP	Child Survival and Health Grants Program (of USAID)
CV	Community volunteer
DHS	Demographic and Health Survey
DPT	Diphtheria, pertussis and tetanus (immunization)
EPI	Expanded Program on Immunization
FCHV	Female community health volunteer
HEP	Health Extension Program
HEW	Health Extension Worker
HFS	Healthy Fertility Study
HIV	Human immunodeficiency virus
iCCM	Integrated community case management (usually for childhood pneumonia, diarrhea, and malaria in malaria-endemic areas, but also sometimes including severe acute malnutrition)
INGO	International nongovernmental organization
IPC	Immunizations Protect Children (project)
IPTi	Intermittent preventive treatment (of malaria) during infancy
IPTp	Intermittent preventive treatment (of malaria) during pregnancy
ITN	Insecticide-treated bed net
JHU	Johns Hopkins University
LAM	Lactation amenorrhea method (for family planning)
M&E	Monitoring and evaluation
MCHIP	Maternal and Child Health Integrated Program
MCP	Malaria in Communities Program
MDG	Millennium Development Goal
MICS	Multiple indicator cluster survey
MNCH	Maternal, newborn and child health
MNH	Maternal and newborn health
MOH	Ministry of health
MSH	Management Sciences for Health
NGO	Nongovernmental organization
ORT	Oral rehydration therapy
PATH	Program for Appropriate Technology in Health
PLBC	Population Level Behavior Change
PMNCH	Partnership for Maternal Newborn and Child Health
PMTCT	Prevention of mother-to-child transmission (of HIV)
PNC	Postnatal care
PPFP	Postpartum family planning

PPH	Postpartum hemorrhage
PVO	Private voluntary organization
RMNCH	Reproductive, maternal, newborn and child health
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
VHT	Village Health Team
WHO	World Health Organization

Acknowledgements

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Jhpiego (prime)
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Save the Children
PATH
JHU/IIP
Broad Branch
PSI
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Introduction

Since 2008, the United States Agency for International Development (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 works on programming in maternal, newborn and child health, immunization, family planning, nutrition, malaria, and HIV/AIDS. MCHIP has supported the delivery of evidence-based interventions through strengthening government health systems, nongovernmental organizations, and other local partners and helped link communities, primary health facilities, and hospitals, coordinated within national and district plans.

A team convened by MCHIP reviewed the evidence related to how effective community-based delivery approaches (including community engagement and empowerment) have been in improving reproductive, maternal, newborn, and child health (RMNCH), MCHIP's experience in supporting such approaches, and how such approaches might be scaled up for long-term, sustainable impact.

Recent global attention to integrated community case management of childhood illness (iCCM) has brought more attention to the subject of community-based approaches, but community actions are still not adequately funded or systematically implemented as a part of national policies and plans.[a] Among the 74 Countdown countries where 97% of the world's deaths of mothers and children under-five occur, only 23 are on track to achieve Millennium Development Goal (MDG) 4 (reducing under-five mortality by two-thirds by 2015 based on 1990 levels)[1] and only nine are on track to achieve MDG 5 (reducing maternal mortality by three-fourths).[1] This fact, combined with the strong evidence regarding the effectiveness of community-based approaches in improving RMNCH, highlights the need to strengthen the capacity of health systems to engage communities and to build strong systems of service delivery outside of health facilities that have the ability to reach those not currently reached by key health services. A 2012 analysis of recent DHS data for 12 key RMNCH interventions across 54 countries noted that "Skilled birth attendant coverage was the least equitable intervention……followed by four or more antenatal care visits. The most equitable intervention was early initiation of breastfeeding. Community-based interventions were more equally distributed than those delivered in health facilities."[b] This analysis emphasizes the pro-equity nature of community programming. As the world is formulating plans of action for ending preventable and maternal child death in the post-MDG world, there is a need to put into action the current evidence for effective community-based programming.

Two dominant features have characterized the provision of health services in low-income settings over the past three decades. The first is an emphasis on facility-based service delivery

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[a] Peters, DH, El-Saharty, S, Siadat, B, et al. Improving Health Service Delivery in Developing Countries: From Evidence to Action. Washington, DC: The World Bank, 2009.

[b] Victora, CG, Barros, AJD, Axelson, H et al. (2012), Equity in maternal, newborn, and child health interventions in Countdown to 2015: a retrospective review of survey data from 54 countries, *Lancet* 2012; 380 (9848): 1149 – 1156.

and the second is the prominence of non-integrated programming for specific diseases or areas - HIV/AIDS, malaria, family planning, and immunizations. The development of community-based programs at national scale has not received as much attention, except for immunizations. Important progress has been made during this same time in building the evidence base for effective provision of selected interventions delivered by community-level workers outside of health facilities; however, coverage of many highly effective interventions that are amenable to community action, remains quite low in the 74 Countdown countries.

This document is an attempt to synthesize and summarize what is known about effective community health programming at scale and place the learning generated by MCHIP in this context. It first presents a framework for analysis that was developed for a 2009 review of evidence for community-based primary health care for child health.[8] Under MCHIP this review has been updated and broadened to include maternal and newborn health. This updated review took account of recent USAID Evidence Summits on the effectiveness of large scale community health worker (CHW) programs[c] and Population Level Behavior Change.[d] The results of this review are summarized in the annex (with a full report to follow later this year). This document then summarizes what has been demonstrated to work effectively at scale from several successful country cases and community health worker experiences that were developed for the CHW Evidence Summit. It then reviews the contributions to learning on community-based approaches from MCHIP, the Child Survival and Health Grants Program (CSHGP) and Malaria Communities Program (MCP) and places them within this larger framework. Finally, it makes recommendations for where a USAID-funded global health project might best place its emphasis to assist countries to fill knowledge gaps and mainstream and scale community-based programming to help reach the goal of eliminating preventable child and maternal deaths. This review is necessarily selective. Fuller descriptions of CSHGP[e] and MCP[f] can be found elsewhere.

Framework for Analysis of Community Health Actions

The "framework for maximum community health impact" (Figure 1) was developed by Perry, et. al. in consultation with the Community-Based Primary Health Care Expert Review Group in 2009. It shows that:

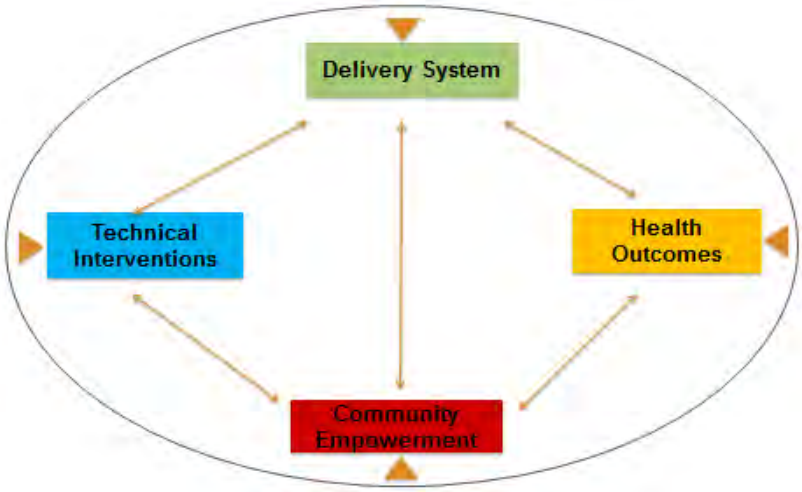
- There is a set of high impact technical interventions that can be delivered at the community level (shown in Figure 2)
- There are several effective community-based delivery systems mechanisms to get those technical interventions to clients in the community. There are four delivery mechanisms with the most evidence
    - Systematic home visits

[c] http://www.usaid.gov/what-we-do/global-health/chw-summit
[d] http://plbcevidencesummit.hsaccess.org/
[e] http://www.usaid.gov/what-we-do/global-health/child-survival-and-health-grants-program
[f] http://www.mchip.net/node/48

    - Community case management
    - Participatory women's groups
    - Outreach through mobile teams
- There are different strategies to enhance community empowerment to support and extend delivery systems

The interaction of these factors and their interaction with contextual factors results in improved health outcomes. A summary of the evidence for the conclusions about the effective technical interventions, delivery mechanisms, and delivery strategies is presented in the Annex. These categories of community action are used for the analysis of programming, as well as to support the conclusion that the technical interventions shown in Figure 2 and the four delivery mechanisms shown above are effective. When reviewing the MCHIP, CSHGP, and MCP portfolios, we will refer to this framework and place various interventions and approaches within its categories.

Figure 1. Framework for maximum community health impact[15]



EVIDENCE FROM LARGE SCALE COUNTRY EXPERIENCES

If one considers the low- and middle-income countries (LMICs) that have achieved the greatest declines in under-five mortality since 1990, strong community-based programs that rely on community-level providers is a common feature. Unfortunately, no systematic analysis of this topic has been carried out. Here we cite four examples: Bangladesh, Nepal, Ethiopia and Brazil. All four countries have either already achieved the MDGs for maternal and child health or are on track to achieve them by 2015.[1]

The important progress made in Bangladesh in RMNCH through community-based approaches and partnerships has been highlighted in a recent *Lancet* publication.[19] Bangladesh has had a strong engagement with CHWs that dates to the 1970s, both through government as well as NGO health programs. Of particular note has been the family planning program, which relied

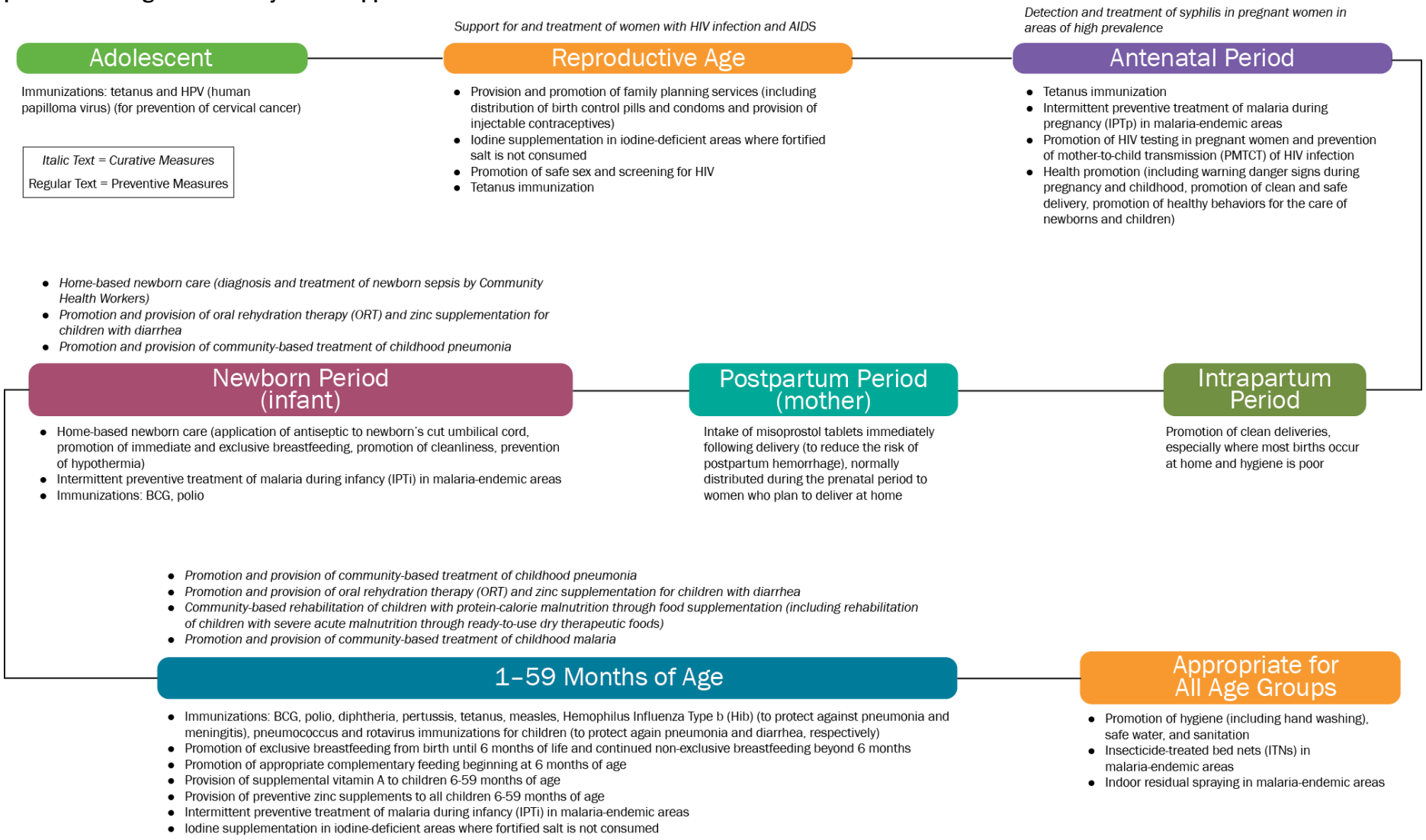
on doorstep delivery of contraceptive services and produced rapid increases in contraceptive prevalence and reduction in the national fertility rate. Bangladesh has been a global leader in innovative approaches to community-based delivery of health services, arising from supportive government policies, a strong and vibrant NGO community, and a tradition of strong community engagement in health services.[20]

Nepal's government established the Female Community Health Volunteer (FCHV) Program in the late 1980s in order to increase the outreach of basic health services in rural areas. Currently, there are 50,000 FCHVs throughout the country who provide basic health services at the community level. They have made major contributions to community-based health programs at the national level through their support for vitamin A supplementation, distribution of de-worming tablets, distribution of packets of oral rehydration salts (ORS), promotion of immunizations, treatment of pneumonia, provision of iron supplementation to pregnant women, promotion of family planning, and more recently home-based neonatal care.[21]

In 2004, the government of Ethiopia introduced the Health Extension Program (HEP) and has since provided training of more than one year in duration to 30,000 salaried Health Extension Workers (HEWs), the majority of whom are female. HEWs have been deployed to 15,000 (92%) of the villages in Ethiopia with a collective population of 75 million.[22, 23] HEWs collaborate with community volunteers (members of the Health Development Army network) who receive two weeks of training and take responsibility for five surrounding families. Ethiopia's health indicators after implementing HEP have shown remarkable improvements. The contraceptive prevalence rate increased from 23% in 2005 to 62% in 2011. Between 2004 and 2011 the coverage of antenatal care increased from 21% to 82%, the percentage of births receiving skilled delivery care increased from10% to 17%, and the percentage of mothers and newborns receiving postnatal care increased from 15% to 41%. Notable increases have also been achieved in immunization coverage as well as in hygiene and sanitation indicators.

Brazil has a history dating back to the 1960s of utilizing CHWs to provide health services in rural and underserved areas. Based on this experience, CHWs began to be more widely utilized in other parts of the country as well, such that when Brazil's national Family Health Strategy was adopted in 1994, Community Health Agents (CHAs) were a key member of the family health care teams that made regular contact with all households. At present, Brazil has 236,000 CHAs, each of whom regularly visits 75-200 households, depending on the dispersion of the households and their health needs.[21]

Figure 2. Evidence-based preventive and curative technical interventions for improving reproductive, maternal, newborn and child health that can be provided through community-based approaches



REVIEW OF THE EXPERIENCE OF NATIONAL COMMUNITY HEALTH WORKER PROGRAMS

CHWs are a diverse group of community-level workers. There are two levels of CHWs: 1) full-time, paid workers with formal pre-service training; and 2) volunteer, part-time workers. Many countries are now expanding their investments in CHW programs. In light of the existing and growing evidence of the positive contributions that CHWs can make to health outcomes together with the estimated worldwide shortage of 4.3 million health workers, a recent WHO report issued in collaboration with the Global Health Workforce Alliance (GHWA) has proposed that CHWs should be explicitly included within national plans for human resources for health.[24] The previously cited country examples of progress in reducing maternal and child mortality are all from countries with strong large-scale CHW programs. A recent review highlights the evidence regarding the effectiveness of CHW programs in achieving the Millennium Development Goals (MDGs) for reducing maternal and under-five mortality[25] and in improving the health of populations in low-, middle- and upper-income countries.[26] There is also a growing body of evidence regarding the effectiveness of using CHWs for programs that go beyond RMNCH and that focus on HIV, tuberculosis and malaria for the entire population.[26]

Growing evidence of the contribution that CHWs are making in middle- and high-income countries including the United States highlights the idea that CHWs and community-based approaches should not be thought of as second-class, temporary solutions, but rather represent the state of the art in improving the health of populations where disparities in access and outcomes exist – which is to say, in virtually all countries. South Africa and India are now planning their CHW programs with the idea that these workers and strong community-based programming will be needed even after the epidemiological transition takes place and maternal and child health are not as high priorities as they are today.

MCHIP has supported the development of a resource guide for program managers and policymakers that provides an in-depth view of various issues that large-scale CHW programs face which are independent of the technical nature of the interventions they implement. This document, entitled *Developing and Strengthening Community Health Worker Programs at Scale: A Reference Guide and Case Studies for Program Managers and Policy Makers,* presents principles and programmatic suggestions for decision-makers and program implementers to consider when initiating, expanding or strengthening CHW programs in their country. The guide consists of 16 chapters that explore the history of CHWs, national-level planning, governance, coordination and partnerships, financing, roles and tasks, recruitment, training, supervision, motivation, CHW relationships with the health system, community participation, maintaining CHW programs at scale, and measurement and data use. An Appendix includes case studies of large-scale CHW programs from 12 countries (Afghanistan, Bangladesh, Brazil, Ethiopia, India, Indonesia, Iran, Nepal, Pakistan, Rwanda, Zambia, and Zimbabwe), the findings from a series of key informant interviews about large-scale CHW programs, and a listing of important CHW resources.

Helping large-scale CHW programs function as effectively as possible offers an important opportunity for improving the health of vulnerable populations in low- and middle-income countries; however, one of the main conclusions from the recent US Government Evidence

Summit on Community Health Worker Performance is that not enough is known about how best to support CHWs to ensure sustained, optimal performance at scale.[27] Consequently, the recommendations from the Summit include an expanded strategic research agenda to examine the effectiveness of specific community and health system inputs for improving CHW performance at scale and better documentation of current large-scale CHW program effectiveness and how it might be improved.[27]

Review of MCHIP and CSHGP Experiences with Community-Based Programming

MCHIP and CSHGP contributed to support for implementation and learning about key examples under each of the categories of action in the "Framework for maximal community impact": supporting community-based approaches for key underutilized high impact interventions; supporting the introduction and scale up of key community-based delivery systems; and supporting the development and implementation of community empowerment and mobilization activities. All but the two activities in Bangladesh were carried out in more than one country:

- Support for implementation and study of selected community-based **technical interventions**
  - Misoprostol pilot projects for postpartum hemorrhage (PPH) prevention
  - Linking postpartum family planning with home-based newborn care in Bangladesh (Healthy Fertility Study)
- Support for development and scale up of community-based **delivery systems**
  - Development and expansion of the Care Group model of volunteer organization
  - Support for further development of the model, as well as introduction and scale up of Integrated community case management (iCCM)
  - Community-based actions for malaria prevention and control—Malaria Communities Program (MCP)
- Support for community **empowerment and mobilization** approaches
  - Support for strengthening community support for routine immunization
  - Support for integrated community mobilization for maternal and newborn health (MNH) in Bangladesh

These seven project activities are by no means exhaustive of all potential activities, but they do high important themes across the spectrum of the RMNCH domain. They have been implemented at moderate scale (i.e., in multiple districts) except for immunization activities which were carried out at national scale. There were also important but less widespread efforts in community-based nutrition education, community kangaroo mother care and support of use of chlorhexidine. These activities were not included because they either were in only one country or did not yet have results ready. Below is a description of the activities, results, and

learning generated from these seven activities. A brief summary is also presented of the breadth of MCHIP-supported CSHGP programming.

SUPPORT FOR IMPLEMENTATION AND STUDY OF COMMUNITY-BASED, HIGH IMPACT INTERVENTIONS

Misoprostol for Postpartum Hemorrhage Prevention

Misoprostol, an oral medication taken immediately after birth, reduces the incidence of postpartum hemorrhage. It is an excellent option in settings in which women deliver at home because of poor access to health facilities, and helps ensure that all women are provided with an uterotonic.

MCHIP Support for Misoprostol Pilot Projects

MCHIP carried out operations research in five countries on PPH prevention using misoprostol for women who deliver at home - South Sudan, Madagascar, Liberia, Rwanda and Guinea. MCHIP supported the Ministry of Health in each country to carry out the intervention, document the results and disseminate the findings as part of an effort to scale up the program. The goal of all the programs was to increase the coverage of use of an uterotonic for PPH prevention for all births. All but the Madagascar[g] program supported a comprehensive approach to PPH prevention that included education on the importance of skilled attendance for birth and the dangers of PPH for all women, and improvements in facility based birth (including promoting active management of the third stage of labor) or home birth (distribution and administration of misoprostol). In all programs except Rwanda, misoprostol was distributed in advance, and women self-administered the medication at the time of birth. Each of these learning phase projects generated important local data on the most effective PPH prevention approaches and demonstrated that facility- and community-focused PPH prevention strategies are safe, feasible, and acceptable.

An important observation across all programs was that advanced distribution of misoprostol did not reduce the number of women delivering at a health facility. Misoprostol for prevention of PPH was highly acceptable to women in all of the learning phase programs. Higher uterotonic coverage was achieved when CHWs distributed the misoprostol through home visits. The overall coverage with use of a uterotonic for PPH prevention among those delivering at home rose substantially in all programs, but community-based distribution was much more effective. In South Sudan uterotonic coverage rose to 94% through use of the community health system even in the face of great health system weakness. On the other hand, in Liberia, where misoprostol was delivered by the formal health system, coverage rose to only 53%. The findings have been disseminated and discussed with Ministry of Health colleagues, and a comparative analysis will be published later this year. The major findings are summarized here:

- Programs which use home visits can achieve high rates of distribution and coverage.
- The location of and cadre used for misoprostol distribution affects coverage.
- CHWs achieved higher coverage than antenatal care (ANC) health workers. Programs that allowed distribution by CHWs during home visits achieved the greatest distribution and coverage (compared to ANC alone).
- Advanced distribution in late pregnancy (as opposed to distribution at the time of birth) results in higher coverage.

[g] MCHIP was not permitted to work in public sector facilities due to the Brooke Amendment, which restricted the US Government from providing direct technical assistance to the government of Madagascar.

- Advanced distribution of misoprostol does not appear to negatively impact facility delivery rates.
- CHWs are as effective as facility-based providers in delivering counseling and education to women.
- Mistimed self-administration of misoprostol was extremely low (well below 1%).
- Despite frequently minor side effects, women reported satisfaction with misoprostol.
- The majority of women would use misoprostol during a subsequent pregnancy and would recommend it to a friend or relative.

Ministries of Health were provided with compelling evidence that PPH-prevention strategies (and particularly advance distribution of misoprostol for home births) are effective at achieving high uterotonic coverage for prevention of PPH. Due to highly promising results of some of these programs, MOHs in South Sudan, Liberia, and Madagascar have opted to expand the program. Furthermore, with the growing global consensus, MOHs in India, Pakistan, the Philippines and Malawi are all starting or expanding programs.

CSHGP Support for the CARE/Nepal Misoprostol Pilot Project

CARE/Nepal conducted a special study on community-level misoprostol distribution to prevent PPH. The study found that community-based delivery of misoprostol was effective in achieving a high level of coverage with community-based distribution of misoprostol by Female Community Health Volunteers. In addition, a significant proportion of illiterate and disadvantaged groups benefitted from the intervention. This approach was piloted by Nepal Family Health Program (NFHP), which led the successful advocacy effort with the MoH to move towards commitment to a national program. CARE was one of several partner organizations that played a helpful role at the stage when the ministry was allowing some limited scale-up but hadn't yet committed to national scale-up.

Linking Postpartum Family Planning with Home-Based Newborn Care in Bangladesh (Healthy Fertility Study)

The Healthy Fertility Study (HFS) was a quasi-experimental study giving solid evidence of the effectiveness of community-based, post-partum family planning, integrated with MNH care. It was conducted in eight unions of Sylhet district in Bangladesh. The intervention arm received community-based distribution of contraceptives, family planning counseling, and community mobilization in addition to MNH activities. The HFS strategy aimed to promote recommended MNH and family planning practices by building an enabling environment and social support for MNH and family planning, with an emphasis on the lactational amenorrhea method (LAM). HFS demonstrated the feasibility of integrating post-partum family planning (PPFP) within a community-based MNH program. Key findings from the project included the following that collectively showed the effectiveness of integrated PPFP services:

- A significantly higher contraceptive prevalence rate was observed in the intervention area than in the comparison area (42% vs. 27% at 12 months post-delivery and 47% vs. 34% at 18 months).
- HFS activities were associated with a 26% increase in contraceptive uptake in the intervention arm, from 18% at baseline to 44% at 30 months postpartum.

- Significantly more women in the intervention arm than in the control arm exclusively breastfed their infant (often in association with adoption of LAM): 23% at 3 months postpartum and 12% at 6 months postpartum.
- The probability of a subsequent birth after the delivery of the index child within 30 months was significantly lower in the intervention arm (25% compared to 30% in the control arm).

SUPPORT FOR DEVELOPMENT AND SCALE UP OF COMMUNITY-BASED DELIVERY SYSTEMS

Care Group Community Volunteer System

One of the important innovations to emerge from the CSHGP is the Care Group methodology, the effectiveness of which has led to widespread dissemination throughout the NGO child survival community. The Care Group model is an approach to systematically organize, train, and supervise small groups of volunteers who in turn regularly reach their closest 10-12 neighbors. Collectively, Care Group members "saturate" the area and reach every target household with interpersonal behavior change communication related to maternal and child health intervention on a frequent basis (usually monthly). There have been 27 international nongovernmental organizations (INGOs) working in 23 countries that have implemented Care Groups, reaching millions of people.

Projects using Care Groups have shown large simultaneous increases in population coverage for multiple high-impact child health interventions. Several projects also instituted community vital events registration systems. According to the findings from the vital events registration system of a project in Gaza Province, Mozambique implemented about 10 years ago, there was a 66% reduction in infant mortality and a 62% reduction in under-five mortality in the four year implementation period. To check the validity of the findings, an independent mortality assessment was carried out using a pregnancy history questionnaire, demonstrating reductions of 49% and 42% in infant and under-five mortality, respectively.[2]

The nutrition impact of a Care Group project implemented in a population of 1.1 million people in rural Mozambique was reported in 2013.[3] This report documented that more than 90% of beneficiary mothers reported that they had been contacted by Care Group volunteers during the previous two weeks, and that the annual rate of decline in childhood undernutrition was four times greater than in the country as a whole. It is rare to see nutritional impact with this many beneficiaries using behavior communication interventions alone.

There has been one successful pilot of the Care Group model integrated with a Ministry of Health (MOH) system – in Burundi. This was led by CSHGP-supported Concern Worldwide. A USAID-sponsored Technical Advisory Group has recently met to review the current experience with Care Groups and soon will be making recommendations for further development of the model and its dissemination.

Integrated Community Case Management for Childhood Pneumonia, Diarrhea and Malaria

The effectiveness of community-based management by CHWs of childhood pneumonia, diarrhea, and malaria is well-established, and iCCM is now being promoted by WHO and UNICEF to expand the coverage of treatment for these leading causes of mortality in infants and young children. In 2009, only 10 countries worldwide had adopted the assessment and treatment of diarrhea, malaria and pneumonia by trained community health workers (CHWs). According to UNICEF, by early 2014, 29 countries were implementing some or all elements of the iCCM approach. Nine of these countries (Democratic Republic of Congo (DRC), Ethiopia, Guinea, Kenya, Mali, Namibia, Rwanda, Zambia, and Zimbabwe) received direct support from MCHIP. Each was at a different stage of implementation and utilizing different models. Some were paying their CHWs while others continued with a volunteer model, not all stakeholders accepted that minimally trained CHWs could safely treat pneumonia, and very few had the systems in place to adequately support their programs.

MCHIP Learning and Support of iCCM

MCHIP is the secretariat of the Global CCM Task Force (CCM TF). Tools compiled and generated by the TF have been made available at www.ccmcentral.com. The need for common indicators to guide and assess implementation emerged in the early stages of iCCM discussions. Using the Benchmarks Framework, the CCM TF's monitoring and evaluation (M&E) subgroup defined, organized and vetted a comprehensive list of iCCM indicators and launched the *iCCM Indicator Guide* at the iCCM Evidence Review Symposium in Ghana in March 2014. MCHIP programs in Kenya, Mali, Guinea and Namibia have adapted elements of the framework for iCCM monitoring and many NGOs within the CSHGP program have adopted the indicators in monitoring their own programs. MCHIP led a review of the state of iCCM M&E in six countries (DRC, Madagascar, Niger, Senegal, South Sudan, and Zambia), while the USAID/TRAction Project reviewed M&E systems in four other countries (Ethiopia, Mali, Malawi, and Mozambique). MCHIP and TRAction developed a synthesis of the learning from these ten countries which will: 1) guide further refinement of the iCCM indicators; 2) be used to recommend the possible standardization of DHIS II community indicators and data collection; 3) support the use of data for decision making; and 4) inform future research on the strengthening of routine monitoring of iCCM services and community health programs.

MCHIP supported the development of the iCCM research agenda through a Child Health and Nutrition Research Initiative (CHNRI) process on iCCM that will be published in 2014. These publications allowed for a broad dissemination of learning and defined a research agenda to inform iCCM programing. Both grey and peer-reviewed literature lacked documentation of consolidated iCCM findings and best practices. Through the OR subgroup of the CCM TF, MCHIP supported the development and publication of 15 papers on iCCM for the Journal Supplement of the *American Journal of Tropical Medicine and Hygiene* (AJTMH). Working with the iCCM TF, MCHIP and partners developed a set of benchmarks for monitoring the scale up of iCCM, then used this framework to guide the documentation of scale-up experiences in two countries—Senegal and DRC. The DRC case is summarized here as an illustrative example of the learning generated through this process.

iCCM Case Study: Democratic Republic of Congo

iCCM has been in operation in the Democratic Republic of Congo (DRC) since 2005. In 2010, the Ministry of Health (MOH) and its partners undertook a documentation exercise to identify lessons and best practices regarding the process of adopting, introducing, implementing and scaling up iCCM. The iCCM approach in the DRC involves the management of life-threatening childhood diseases at the village level through trained paid or volunteer community health workers (CHWs) known as *relays*. They treat malaria with ACT, pneumonia with cotrimoxazole, and diarrhea with zinc and ORS. Five years following the initiation of iCCM, there were 716 sites where iCCM was provided, covering 10 of the 11 provinces in DRC. DRC has two categories of *relays*. One is a *site relay*, who has received structured training and supervision and can provide curative care to sick children. The second category is the *promotional relay,* who is involved in social mobilization and communication activities.

The success of the iCCM strategy in DRC depended on a high level of political commitment. The leadership of the authorities led to an integrated package of services being delivered at the community level. Major efforts have been made to integrate data from the iCCM sites into the monthly reports of their affiliated health facilities. This is a feature that will enhance the sustainability of the approach. Another element that favors sustainability is the intense focus on capacity building at all levels of the health system and community through the training of trainers (TOT) approach. However, iCCM in DRC, as in many places around the world, is based on volunteerism. Thus, its continuation depends upon the inclusion of incentives for community-based volunteers. In DRC, the rapid scale up of the strategy to 10 of the 11 provinces can be attributed to availability of well-codified technical and operational documents, leadership and commitment at all levels, continuous supervision, ongoing performance quality assurance, and the decision to proceed immediately to expansion using lessons learnt from Senegal without going through the country's own pilot phase. But a major challenge to be addressed is the presence of a very complex and fragmented supply chain system which results in frequent stock outs of important drugs.

The iCCM intervention in DRC involved a great deal of capacity building at levels of the health system and included training of health workers and *site relays* in the management of illnesses. Between 2005 and 2010, large numbers of CHWs, health zone staff, and provincial and central-level staff were trained in iCCM. For example, as of 2010, the TOT approach in one province had made it possible to train 1,000 people in BCC who then passed messages on to over 14,000 people. Communication and social mobilization were an important part of the iCCM strategy in the DRC. It involved training volunteers from churches in BCC activities. Trained religious leaders in turn trained their followers, resulting in a cascade model to promote community mobilization. Following their training, *site relays* were continuously monitored through group meetings and periodic on-site visits by nurses from their corresponding health center. The health systems level the outputs comprise the following:

- A review of CHW (*site relay*) performance revealed that the treatment prescribed was correct in 94% cases of malaria, 92% cases of pneumonia, 81% cases of malnutrition, and 62% cases of diarrhea.

- The *relays* were almost perfect in their knowledge of the appropriate dosage of medication, based on the age of the child, except in treatment for diarrhea, where 86% had the appropriate knowledge.
- 95% of *relays* knew at least two danger signs in a sick child, while the percentage knowing all the danger signs was 81%.
- 62% of *relays* were able to correctly count respirations.

CSHGP Support for iCCM

MCHIP and CORE Group supported the development of the CCM Essentials Guide as a way to systematize best practices for CCM. WHO and UNICEF were involved at every step in the process as well. Among the private voluntary organization (PVO) and NGO projects supported by CSHGP that implemented iCCM, the implementation context varied, and projects ranged widely in the number of children younger than five years of age served. Projects were typically implemented in one or more districts. The 10 completed projects documented increases in the percentage of the population obtaining treatment for malaria and diarrhea and increases in the percentage of clients with symptoms of pneumonia seeking treatment. Demand strategies for iCCM typically involved multiple channels, and several projects reported increases in community engagement through various strategies such as establishing village health committees, ensuring community-level monitoring, and increasing health knowledge. Completed projects documented substantive contributions to policy, with nearly half contributing to national-level policy formulation. CSHGP projects have been effective in implementing iCCM and in building national iCCM capacity by sharing experiences, documenting achievements, and championing iCCM at the national policy level.

Of the 10 completed PVO/NGO projects supported by CSHGP that implemented iCCM, three reported decreases in under-five mortality. In general, the projects (1) targeted underserved communities, (2) selected, trained, and then deployed CHWs to increase and sustain access to iCCM, and (3) strengthened referral pathways to facilities. Evaluations of all of these projects revealed that increasing access to curative services that CHWs provide near the home mitigated some of the inequity inherent in geographical areas where access to facilities has been difficult. The majority of completed projects documented a high quality of case management. Evaluations of these 10 projects also revealed several areas for further exploration:

- Financing and logistics are not receiving sufficient attention. Cost-recovery schemes for iCCM could inform the equity versus sustainability debate surrounding user fees.
- Alternative financing mechanisms such as insurance and health savings groups need to be explored in different settings.
- Annual benchmark mapping would allow tracing common paths for countries as they introduce and scale up iCCM and allow for the identification of areas for strengthening the health system to maximize performance.

Malaria Control and Prevention: The Malaria Communities Program

The Malaria Communities Program (MCP) was launched in 2006. Through MCP, the President's Malaria Initiative (PMI) gave out 20 awards to 18 INGO and local NGO partners in 12 countries. Over the last four years of the project, MCHIP gave technical assistance to MCP

grantees. MCP supported efforts of communities and nongovernmental organizations to combat malaria at the local level. MCP worked to increase local capacity to undertake community-based malaria prevention and treatment activities; build local ownership of malaria control in partnership with communities and National Malaria Control Programs (NMCPs); and extend coverage of PMI and NMCP interventions to reach larger beneficiary populations.

The program aimed to improve intermittent preventive treatment of malaria in pregnant women (IPTp) and insecticide-treated bed net (ITN) coverage among pregnant women and children under five years, as well as case management of children. A key aspect of MCP was community mobilization through behavior change strategies. Various strategies were used, but systematic household visitation was one of them. Some of the MCP partners were successful in involving influential community members to become champions for MIP messages and in encouraging male participation to reduce barriers to the involvement of women. Messages focused on proper net hang-up, ANC, and IPTp.

MCP trained, empowered and equipped volunteers with skills and tools to promote key messages about malaria prevention and treatment. MCP attempted to achieve more effective programming by (1) promoting ownership through community participation in volunteer selection, and (2) training and empowering community volunteers in malaria prevention and control. MCP coordinated and linked ANC to the national commodity supply chain and established linkages between communities and health facilities to prioritize procurement of key products such as ITNs. In one of the project areas, ERD Angola persuaded the National Malaria Control Program to incorporate community-level data into its monitoring and evaluation system. In MTI Uganda, midwives and facility staff were impressed by the assistance that trained female Village Health Teams can lend to health facility staff. Consequently, the MOH has incorporated Village Health into its program.

Projects carried out baseline and final population level coverage surveys. Key results (ITN use and IPTp) are shown in Tables 1 and 2. ITN use increased in all project areas except one, and IPTp coverage increased by an average of 50 percentage points. In those two projects that had serial DHS data for comparison (Malawi, Tanzania), the increases in coverage in the project area were larger that the trend of coverage increase measured by the serial DHS data.

Table 1. The percentage of children younger than five years in the Malaria in Communities Program areas who slept under an insecticide-treated bed net the previous night compared to national levels

MCP Partner*	Baseline percentages in project areas (collected in 2007-2009)	National percentages from DHS surveys (2005-2009)	Final percentages in project areas (collected in 2010-2012)	National percentages from DHS surveys (2010-2012)
ADPP Angola	39.0	17.7	75.0	
ERD Angola	42.0	17.7	88.0	
ERD Ghana	69.0	38.7	93.0	
Merlin Kenya	38.6	46.7	95.0	
CU Malawi	24.7	14.8	81.3	39.4
CSSC Tanzania	5.0	16.0	67.0	63.6
HealthPartners Uganda	6.5	9.7	42.0	
MTI Uganda	57.3	9.7	75.0	
Wellshare Uganda	43.0	9.7	68.8	
CMMB Zambia	85.3	28.5	86.9	

*These are the PVOs/NGOs that implemented the activity in the country

Table 2. The percentage of pregnant women in the Malaria in Communities Program areas who took at least two doses of anti-malarial medication

MCP Partner*	Baseline (2007-2009)	Final (2010-2012)
ADPP Angola	23.0	80.0
ERD Angola	4.0	96.0
EQUIP Liberia	23.0	88.0
CU Malawi	51.7	62.8
CSSC Tanzania	34.0	64.0
MTI Uganda	24.7	79.0
Wellshare Uganda	32.7	72.5

*These are the PVOs/NGOs that implemented the activity in the country

SUPPORT FOR COMMUNITY EMPOWERMENT AND MOBILIZATION APPROACHES

MCHIP Support for Strengthening Community-Oriented Routine Immunization

MCHIP has been engaged in strengthening routine immunization services across nine countries.[h] MCHIP linked this work to improved planning at the national level, in addition to its strategic participation in working groups and committees, amplifying the project's learning

[h] India, Kenya, Madagascar, Nigeria, Senegal, South Sudan, Uganda, Tanzania, Timor-Leste, and Zimbabwe

and expertise while infusing the policies, strategies and operational plans of key partners with pragmatic, operational considerations. Among countries where MCHIP worked, the immunization team partnered with district health services to strengthen capacity and build partnerships with communities for more effective planning, providing, monitoring, and improving the delivery and uptake of routine immunization services. This work was primarily achieved through implementation of the Reaching Every District (RED) approach, one of whose components is community engagement. In India, Kenya, and Timor-Leste, innovative techniques to improve newborn tracking were implemented. Notably the "My Village is My Home" tool showed an improvement in vaccination timeliness everywhere it was used and contributed to higher overall coverage in the pilot districts in Jharkhand state, India. In South Sudan, MCHIP collaborated with partners to develop and obtain the government's endorsement for a new national immunization policy in addition to drafting RED guidelines and Expanded Program on Immunization (EPI) training modules for the national immunization program.

The *Imunizasaun Proteje Labarik* (IPL) Project in Timor-Leste

MCHIP, in partnership with the Ministry of Health (MOH), implemented Imunizasaun Proteje Labarik (IPL which stands for Immunization Protects Children (IPC)) in seven districts of Timor-Leste from April 2011 to October 2013 to increase child immunization coverage. Much of Timor-Leste's health infrastructure and system capacity had to be rebuilt after the country's long struggle for independence. National immunization rates among infants have improved since independence in 2002, but remain the lowest in the South East Asia region. In 2008, the Timor-Leste MOH introduced SISCa (which stands for Integrated Community Health Services), a community outreach service to offer integrated health services (including immunizations) one day per month in larger communities. However, many rural communities in the mountains still lack access to SISCa. The MOH is under-funded and under-staffed in rural areas. Weak system components include management of vaccine stocks, health information, and disease surveillance.

The intervention built both supply- and demand-side capacity to boost immunization rates in the country. IPL supported the MOH and national partners in annual micro-planning at the district and sub-district levels. It helped the government to review and formulate policy papers and strategic guidelines for both the Expanded Program on Immunization (EPI) and the wider health system. The project developed standard tools for supportive supervision, and it mentored local staff on reporting and registering.

At the community level, the project trained community leaders on immunization and other health topics so they could mobilize fellow community members and respond to their questions and concerns. It engaged communities in micro-planning and monitoring by introducing a new tool that enabled community volunteers to list all infants, record the dates of each of their vaccinations, and make home visits to motivate parents when a child fell behind in his/her immunization schedule. Support was provided to community-based services and outreach in the form of motorcycles, fuel, practical assistance, and mentoring of health staff and volunteers. The project also gave immunization orientations in middle schools.

Baseline and follow-up studies were conducted to assess project outputs and outcomes. Training of community leaders resulted in a positive change in their knowledge about immunization, as

shown in Table 3. Project activities also resulted in improved capacity to provide immunization services at the community and health system levels. Assessment of the community-based monitoring tool shows positive impact on timeliness of vaccination since more children were being vaccinated at younger ages and within the recommended age ranges.

Table 3. The Timor-Leste Immunization Protects Children (IPC) Project: Community leaders' knowledge about immunization

Knowledge level	Percentage of leaders	
	Before training	After training
Lacking	9	0
Limited	87	45
Good	4	55
Total	100	100

The four IPL project activities that were considered most effective by the MOH and national partners were: (1) support for micro-planning of immunizations, (2) the community-based tool for tracking immunization coverage, (3) supportive supervision, and (4) support to SISCa and outreach. The project's focus districts showed increases in immunization coverage while in the non-focus districts there was no change (Table 4). The main limiting factor preventing larger increases in coverage was stock-outs of measles and BCG vaccines at several points during the project implementation. The extent to which these changes in immunization coverage are attributable to support from IPL cannot be determined conclusively, although it seems likely that the project made a significant contribution. The limited period of implementation means that the sustainability of the results cannot be assessed. The short period of two years resulted in insufficient time for some of the tools and approaches to be scaled up nationally and institutionalized. There are follow-up plans and commitments of continued support for some but not all of the package of IPL project interventions.

Table 4. The Timor-Leste Immunization Protects Children (IPC) Project: Immunization coverage in project focus and non-focus districts

Year	Percentage of children who were fully vaccinated	
	In project focus districts	In project non-focus districts
2011	65	68
2012	79	76
2014	76	68

CSHGP activities for immunization

There were 11 CSHGP-funded projects implemented by PVOs/NGOs that devoted a significant effort to immunization, and all demonstrated improvements in terms of percentage of children fully immunized, percentage of children who received measles vaccine, and the percentage of women who received at least two tetanus toxoid immunizations prior to the birth of the youngest child. The common strategies used to achieve these results were:

Ensuring health system supports and an enabling environment

- Ensuring that the necessary supplies and equipment to support the immunization program were available (including providing refrigerators when needed)
- Strengthening collaboration with the national immunization program
- Strengthening community information systems by involving community members and establishing community registers of children and tracking immunized children and defaulters
- Training CHWs to provide education, counseling and support related to immunizations
- Utilizing outreach strategies such as mobile clinics, rally posts, and home visits to increase coverage

Community mobilization

- Training community-level volunteers and using appropriate information, education and communication (IEC) materials and BCC messaging to mobilize the community for behavior change and to counter negative opinions about immunization
- Providing community education about immunizations and immunization campaigns
- Using the VISA (**V**isit, **I**dentify, **S**ensitize and **A**ccompany) volunteer mobilization approach, community radio, and quality improvement methods

Integrated Community Mobilization for MNH: The Bangladesh MaMoni Project

The MaMoni Project covered a total of 15 sub-districts of Sylhet and Habiganj districts within the Sylhet Division, with a total population of 3.5 million people. The Sylhet Division has the worst maternal and child health indicators in Bangladesh. The division lacks access to many MNCH services, and the Habiganj District is a particular challenge since for seven to eight months of the year the population can access referral health services only by boat. MaMoni provided an integrated package of maternal and child health services, including pregnancy identification, antenatal care (ANC), promotion of clean delivery by skilled attendants, postnatal care (PNC), exclusive breastfeeding, family planning, and infant and young child feeding.

MaMoni created an interface between the community and the health system by introducing Community Micro-Planning (CMP). The project used high-impact technical interventions, trained, motivated and supported CHWs, and ensured that essential commodities were available. Routine systematic home visits to identify pregnant women and targeted visits to pregnant women and to newborns were an essential project strategy. The project recruited female CHWs to provide household-based counseling on maternal and newborn health messages and also trained service providers on elements of the integrated package. Community engagement was achieved through Community Action Groups (CAGs) and community volunteers (CVs). CVs raised awareness, promoted care seeking, and also identified health problems and addressed them with local resources. About 120,000 men and women were

organized into 3,800 Community Action Groups. The project had 286 CHWs, and 12,000 CVs were selected and trained. The project also developed a community-led, customized referral system to the appropriate referral center in hard-to-reach areas to ensure prompt transfer of mothers and newborns who had complications.

Service utilization and coverage improved significantly:

- Monthly community to facility referrals rose from 20 per month at over 180
- Reproductive, maternal and newborn outcomes improved: CPR rose from 39% to 46%; ANC1 from 32% to 76%; and institutional delivery from 13% to 22%.
- There is evidence that maternal mortality fell significantly

Health systems components improved, such as data quality in the health information system, and significant resources were mobilized to build clinics and access roads and facilitate referral care. Engaging with communities unleashes their potential to mobilize local resources to solve their own problems, and improve health system bottlenecks.

OVERVIEW OF ACCOMPLISHMENTS OF CSHGP PROGRAMMING

During the period of MCHIP support (2008-2014), 94 projects received funding from USAID through the Child Survival and Health Grants Program (CSHGP) to work with local partners (local and national Ministry of Health, local civil society, and research institutions) to improve and sustain equitable health outcomes by building local capacity and generating credible, practical evidence from robust implementation science platforms (routine M&E; evaluations including population-based baseline and endline surveys; operations research with qualitative and quantitative methods) to advance integrated, community oriented programming. INGOs facilitated improvements at the district, facility, and community levels and strengthened linkages between health system actors and communities at multiple levels of the system. CSHGP's awards to INGOs were complemented with technical assistance from MCHIP (www.mchipngonet.org) and collaboration for action and learning through the CORE Group coalition of more than 70 INGOs and affiliates in 120 countries or more than 100 members (organizations and individuals) worldwide (www.coregroup.org). MCHIP's technical assistance to NGOs during this time focused on improving the quality of program design and measurement and disseminating learning.

CSHGP grantees consistently demonstrated improved coverage of integrated, high impact interventions in vulnerable populations. A published MCHIP review of 12 representative CSHGP-supported projects that ended in 2006-7 showed population level increases in coverage for a wide array of key household behaviors. When these coverage changes were modeled in LiST, the estimated average rates of annual decline in under-five mortality were more than twice that for secular changes in the same region of the country (5.8% versus 2.5%).[4] An analysis of the interventions responsible for this decline revealed that just two – exclusive breastfeeding and hand washing – were responsible for almost half of the decline – two interventions that do not generally receive intensive attention from MOHs.

CSHGP has recently focused on innovations to address delivery challenges through community and health systems solutions. This has catalyzed new operations research partnerships among

NGOs, academia, and MOHs through 30 operations research projects in 23 countries, implemented by 19 NGOs.[i] These partnerships are generating evidence about how to solve critical community health challenges in the implementation and scale-up of high impact maternal, newborn, and child health interventions. By working in partnership with MOHs, studies are designed to meet the ministries' expressed needs for evidence about community health approaches that have the capacity to strengthen local and national systems. Examples of innovative community-based interventions that these projects implemented during the past five years include the following:

- iCCM programs that reached 1.8 million children (22 projects)
- Essential nutrition actions (an integrated approach to strengthen the coverage and quality of nutrition interventions for mothers and children through community participatory approaches) (19 projects)
- Routine immunizations were strengthened through mobilizing the community, expanding the role of community volunteers and CHWs, and improving logistical support (11 projects)
- Home visits were provided during the postnatal period to check on the health of the mother and newborn and to provide education and support (6 projects)
- Provision of family planning services was strengthened during the postnatal period through community mobilization, interpersonal counseling, and logistical support (2 projects)
- Tuberculosis detection, linkage of potential cases to diagnosis and treatment, and support during treatment (6 projects)
- Misoprostol distribution to pregnant women to take following delivery to prevent postpartum hemorrhage among women without access to facilities (1 project)

Delivery mechanisms at the community level included outreach by facility-based mobile teams, community case management by CHWs, routine systematic home visits, and participatory women's groups. Existing community groups and leadership structures were commonly engaged in project activities. Interpersonal communication and community mobilization strategies were developed to improve health-related practices. Mothers were contacted frequently by credible sources of health information (health personnel, community health volunteers, trained faith-based leaders, trained community leaders, and community support groups), normally at least once a month.

Lessons Learned

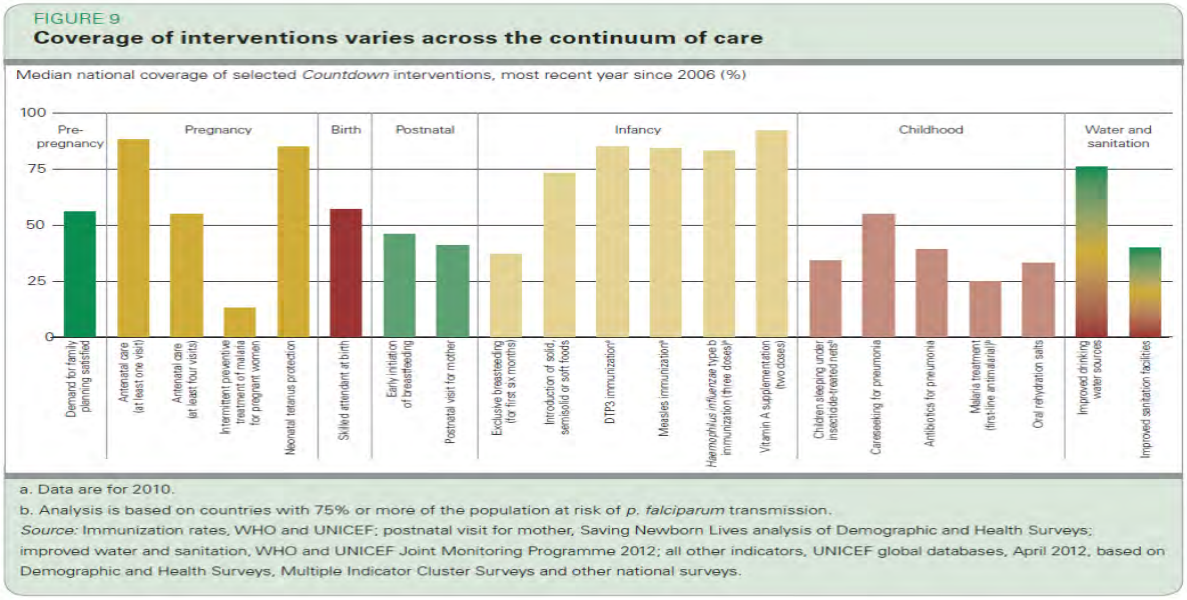
MCHIP has engaged in a wide variety of implementation support and learning at the global and national levels, facilitating the use of single technical interventions such as community-based misoprostol distribution for PPH prevention, promoting integrated interventions delivered through effective community-based mechanisms such as iCCM, and strengthening integrated service delivery platforms such as Care Groups. There are many lessons that have been generated, and many of them context-specific; however, we lay out the most important and generalizable of the lessons here.

[i] http://www.mchipngo.net/lib/components/documents/PVOCenter/OR-Innovation-Brief.pdf)

LESSONS FOR TECHNICAL INTERVENTIONS

Many of the technical interventions reviewed by Countdown to 2015 and others are either currently or could potentially be delivered effectively in the community. Figure 3 from the latest Countdown report shows the gaps in key high impact RMNCH interventions. The average gap in coverage across the 74 Countdown countries is smallest for vaccinations, which are often delivered in the community through outreach mechanisms. On the other hand, the gap for skilled birth attendance, a facility based intervention, is much greater. The gaps for treatment interventions for the most common childhood killers (malaria, pneumonia, and diarrhea) range from 25% to 70%. These have all traditionally been delivered in facilities but are moving toward community-based delivery in this era of interest in expanding programs for integrated community case management. One intervention to call attention to is exclusive breastfeeding. This is a highly effective intervention fully within the reach of even the poorest households, requiring no commodity, and yet is only reaching coverage levels of 40% across Countdown countries. That gap is an indicator of a clear need for community-based action.

Figure 3. Gaps in coverage of key high impact RMNCH interventions[j]



Recent movement toward community-based treatment through iCCM programs is encouraging, but one should not forget that there are still wide gaps to be closed for simple and highly effective preventive interventions as well. CSHGP programming shows that at the level of one or several districts, community-based behavior change approaches can increase coverage for several key household behaviors such as breastfeeding. The challenge is how to achieve population level behavior change (PLBC) in entire countries. The USAID Summit on PLBC highlighted the fact that the evidence base is still fairly thin in terms of how to do that.

[j] http://www.countdown2015mnch.org/documents/2013Report/Countdown_2013-Update_withprofiles.pdf

LESSONS FOR SERVICE DELIVERY

The same four effective service delivery mechanisms outlined in the 2009 literature review were again validated in the updated and expanded review – that is, community case management, participatory women's groups, outreach, and routine systematic home visits. There has been much activity and excitement generated globally by case management for childhood illness recently, and MCHIP has been a global leader in this and needs to make sure that momentum is maintained. As implementation of iCCM reaches a more mature stage in some countries, an important issue is whether or not iCCM program are merely shifting treatment to the community among those already covered by facility-based interventions or if it is truly recruiting new and previously unreached clients. Helping counties measure and monitor this parameter and use this data for feedback to improve targeting for equity is a key area for action, as well as continuing to study and help countries solve implementation bottlenecks.

Participatory women's groups have also received a lot of attention recently particularly after the 2013 *Lancet* meta-analysis by Prost and colleagues showing their effectiveness in multiple settings in South Asia.[k] As has been pointed out, it is still not clear what the mechanism is for the effectiveness of participatory learning and action (PLA) Groups[l]. A related method of organizing participatory women's groups has been implemented extensively and studied to some extent as well. That is, the Care Group model. This model also shows promise as a delivery mechanism for a wide variety of technical interventions. The experience of the Burundi MOH seems to show promise that the approach can be integrated within national systems. It should be a priority to learn more about the principles that make these models of organizing participatory women's group work and trying to help countries systematically scale them up.

LESSONS FOR COMMUNITY EMPOWERMENT

The area of community empowerment approaches is one that has been used and integrated into the programming of NGOs for years, and yet it is the least systematically studied of the three categories of community action for health. A review of the landscape and evidence for community participation at scale in 2008 noted the need for further study[m] and that is still true today. There is now encouraging movement in the right direction. Some of mobilization and empowerment techniques have become more structured and generalized. BRAC has taken its highly successful approaches and applied them in other countries. The Community Action Cycle that the MaMoni project employed as described in this brief also is an approach that has been used with success in a number of settings. So although mobilization and empowerment strategies need to be contextualized, there are clearly certain generalizable principles that can be transferred across settings. These need to be studied more systematically, but in any case will remain part of activities that help deliver the results of community-based programming,

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[k] Prost A et al. 2013. Women's groups practicing participatory learning and action to improve maternal and newborn health in low-resource settings: a systematic review and meta-analysis, *Lancet*, 381(9879):1736–46

[l] Victora CG & Barros FC (2013). Participatory women's groups: ready for prime time? *Lancet*, 381 (9879):1693 – 1694.

[m] Rosato M, Laverack G, Howard Grabman L, et. al. (2008). Community participation: lessons for maternal, newborn, and child health. *Lancet*, 372 (9642): 962 – 971

along with the employment of evidence-based technical interventions and effective delivery mechanisms.

Recommendations for Supporting the Scale Up of Effective RMNCH Community-based Approaches

With an eye to ending preventable maternal and child deaths by the year 2035, the following are recommended actions for the implementation and study of the most promising community approaches to be taken to scale. Four types of actions are proposed:

- Policy advocacy for needed supports for community-based programming
- Support for further learning about community health – especially implementation research on solving system bottlenecks for effective community-based service delivery
- Support for CHW programs at scale, especially to implement iCCM
- Support for scaling up community platforms such as Care Groups and participatory women's groups that can effectively deliver behavior change through frequent interpersonal contact

ADVOCACY FOR COSTED NATIONAL PLANS AND NEEDED SYSTEMS SUPPORTS FOR COMMUNITY-BASED PROGRAMMING

Countries need to develop stronger policies and financing for community-based primary health care programming, for strong CHW programs, and for permissive policies that authorize the community-based delivery of specific high-impact interventions (e.g., family planning, misoprostol, chlorhexidine for prevention of newborn sepsis, etc.). National plans ought to be costed with consideration to possible NGO and private for-profit sector partnerships. Furthermore, there is a need to support the process of authorization for task shifting/task sharing to community-level workers. There can be resistance among other cadres to this sort of task shifting. To support community programming at scale, a full analysis of the system is necessary with consideration of the needs for investment across all the WHO "building blocks" of a strong health system: leadership and governance, financing, supply chain, health management information system, and workforce orientation and training (in addition to task shifting).

Civil society and NGOs can play a role in supporting and strengthening community-level structures and programming. This requires a policy-friendly environment for NGOs. There is a clear policy window now in many countries with the development, refinement, or tracking of national plans based on A Call to Action, Eliminating Preventable Child and Maternal Deaths, and other frameworks for ambitious action. India's plan, as an example (India Ministry of Health and Social Welfare (2013), A Strategic Approach to RMNCH+A in India, http://www.unicef.org/india/1. RMNCHAStrategy.pdf (accessed June 2014), has chapters on the importance of behavior change and community participation. One of the prioritized

interventions is home-based postnatal care visits by Accredited Social Health Activists (ASHAs). This sort of community action could be deepened and broadened.

SUPPORT FOR FURTHER LEARNING AND DISSEMINATION CONCERNING COMMUNITY ACTION FOR HEALTH

There is an ongoing need to expand the evidence base to test the effectiveness of newer technical interventions delivered in the community under realistic settings. But the bulk of efforts for learning should be directed towards implementation research to elucidate how high impact technical interventions can be delivered in context-specific situations, in sustainable ways, and packaged in combination with each other. Suggested areas for emphasis for implementation research are:

- Investigation of community approaches at scale over longer periods of time. Most of the evidence reviewed was for programming taking place for two to three years within a fairly tightly controlled project environment. Sustainable programming that can last beyond such a relatively short period might require additional supports and needs to better documented.
- Investigating how best to address the bottlenecks to effective CHW and iCCM programs. iCCM programs delivered by CHWs are often targeted for difficult-to-reach areas where the health system is weak. Logistical and supervisory support continues to be difficult in many programs. Novel ways to ensure proper support for these programs is, therefore, particularly needed. mHealth supports might play a role in non-traditional approaches to supervision. The private sector may be able to play a role for logistics support for needed commodities.
- In many countries rolling out iCCM, CHWs are combining this new or strengthened treatment role with previous responsibilities for health promotion (e.g., the *Soins Essential Communautaire* (Essential Community Care) system in Mali, the *Agent Polivalente Elementare* (Elementary Polivalent Community Health Agent) system in Mozambique, and the FCHV system in Nepal are all examples of this). What are the best models for such service integration, by either one or several cadres of community health volunteers?

Some of the needed evidence does not need to come from new research projects, but could be obtained by analysis of the current and emerging peer-reviewed literature and program reports and evaluations from the grey literature. The Child Survival and Health Grants Program (CSHGP) has the world's most extensive archive of community-based program evaluations and could be exploited further.

SUPPORT FOR EFFECTIVE COMMUNITY-BASED SERVICE DELIVERY PLATFORMS, INCLUDING LARGE-SCALE CHW PROGRAMS

Support for large-scale CHW program strengthening should involve combining implementation support with investigations into the critical bottlenecks and how to address them in practical ways. Other community-based delivery strategies should be supported as well. A critical area is building a health system's capacity to empower and mobilize communities, to communicate health messages more effectively to the community; to design programs, identify target groups, or carry out surveillance more effectively; or to strengthen the health system in ways that would be of benefit for community-based programs (e.g., supervision of CHWs and provision of drugs

and supplies to them). Supporting a health system to register vital events, for instance, or working effectively with village health committees could have benefits for improving RMNCH. The review of the evidence identified four basic intervention delivery strategies: home visitation, community case management, participatory women's groups, and delivery of services at outreach sites by mobile teams. Strengthening all of these approaches should be a priority, and not just iCCM.

SUPPORT FOR SCALING UP COMMUNITY PLATFORMS LIKE CARE GROUPS AND OTHER PARTICIPATORY WOMEN'S GROUP MODELS THAT CAN EFFECTIVELY DELIVER BEHAVIOR CHANGE THROUGH FREQUENT INTERPERSONAL CONTACT

Some of the high impact interventions with the largest potential effect are not only those that can be delivered effectively in the community, but are specifically behavior change interventions (Bhutta Z and Black R (2013), Global Maternal, Neonatal, and Child Health: So Near Yet So Far, *N Engl. J Med.* 369(23): 2226-2235). Bhutta and Black describe different high impact packages of interventions for MNCH care. One of these is a package of nutrition interventions that includes breastfeeding. One of the most effective mechanisms for breastfeeding promotion is interpersonal behavior change. Care Groups have the power to do this effectively by combining the power of participatory women's groups with systematic home visitation. They have shown the potential to dramatically raise coverage of such behavioral interventions as breastfeeding, as well as others such as hand washing, and still others that have a strong behavioral component, such as use of insecticide treated nets and care-seeking for serious illness. There have been some early experiences with scaling up Care Groups and integrating them into national systems, most notably in Burundi. Systematically implementing and studying such approaches could go a long way toward helping countries reach their goal of eliminating preventable child and maternal deaths.

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Annex: Review of Evidence from Published and Grey Literature on Effectiveness of Community-based Approaches for Improving RMNCH

The findings of the literature review are presented following the framework presented in Figure 1 in the body of the text for how community health strategies achieve lasting reproductive, maternal, newborn and child health impact. That is, the evidence is summarized for the current evidence regarding

- high impact technical interventions that can be delivered at the community level;
- delivery mechanisms for those technical interventions; and
- strategies to enhance community empowerment.

The literature is the strongest on the evidence for community-based technical interventions. This aspect of community programming is the most amenable to randomized and quasi-experimental trials that produce the most rigorous evidence. This evidence will be presented first. Then the much thinner evidence will be presented on planning for context and for entry points.

EVIDENCE FOR HIGH-IMPACT COMMUNITY-BASED TECHNICAL INTERVENTIONS

The literature review updated and expanded a 2009 literature review done on effective community-based child health technical interventions.[8] The number of interventions that have proven efficacy in improving the health of women of reproductive age, pregnant women, newborns, and children younger than five years has continued to grow. Table 5 defines those that are currently well-established, although there are newer ones for which evidence gathering is still underway. Most of the interventions shown here are well-known and have been well-recognized to be effective when delivered at the community level. This list is similar to lists of effective RMNCH technical interventions produced by the Child Health Epidemiology Reference Group (CHERG) and the Partnership for Maternal Newborn and Child Health (PMNCH). However, the effective interventions established by the CHERG and PMNCH contain interventions that can be provided only within facilities along with community-based interventions. The list presented in Figure 2 contains only interventions with proven effectiveness that can be implemented at the community level by community-level workers working outside of health facilities. The fact that this list is so similar to general lists of effective RMNCH technical interventions underscores the fact that so many well-known high-impact interventions have been proven effective when delivered at the community level.

The list of interventions of proven effectiveness is weighted toward health promotion activities. Experience with community-based treatment interventions traditionally been less common, although this is changing in the current landscape in which iCCM of childhood illness is being scaled up in a number of countries. It should also be pointed out that some of the interventions in Table 5, such as immunizations, are already routinely delivered at the community level at large scale. Others, such as family planning, are sometimes currently delivered at scale in the community. Many other interventions of proven effectiveness in community settings, such as intermittent preventive treatment for malaria in pregnancy (IPTp), are not currently implemented at scale in many settings, and others, which are, still have very low levels of coverage. Since the 2009 review, studies have been published that support the effectiveness of

community-based interventions for improving RMNCH. Some of the notable ones are shown in Table 5.

Table 5. Community-based interventions for improving RMNCH

Intervention	Target group					
	Women of reproductive age	Pregnant mothers	Mothers during labor and delivery	Post-partum mothers	Newborns	Children under five
Community-based provision of injectable contraception in many African countries (this approach has been well-documented in a number of Asian settings but only recently are studies of this emerging from Africa)	X			X		
Home-based distribution of misoprostol tablets to be taken following delivery (and usually distributed during a prenatal home visit) for prevention of postpartum hemorrhage		X		X		
Community-based approaches to HIV/AIDs prevention, detection, treatment (particularly for the prevention of mother-to-child transmission)	X	X		X	X	X
Home-based administration of chlorhexidine umbilical cord care for reducing newborn sepsis and reducing newborn mortality		X		X		
Home-based newborn care and linkage with postpartum family planning to prolong birth intervals and promote exclusive breastfeeding		X	X	X	X	
Community-based provision of oral zinc tablets to be taken along with oral rehydration solution/recommended home fluids to reduce the duration and severity of diarrheal episodes as well as the likelihood of subsequent infections in the subsequent 2-3 months					X	X
Integrated community case management of childhood illness by which CHWs are trained and equipped to diagnose and treat childhood pneumonia, diarrhea, malaria (where malaria is endemic) and, in some cases, severe acute undernutrition					X	X

A recently completed WHO consultation assessed the evidence and experience in the utilization of community-level workers in the provision of MNH services.[9] They concluded that the use of community-level workers to promote the behaviors and services listed below is likely to be effective, acceptable and feasible and may reduce inequalities by extending care to underserved populations:

- Appropriate care-seeking behavior and antenatal care during pregnancy
- Companionship during labor
- Sleeping under insecticide-treated bed nets during pregnancy
- Birth preparedness
- Skilled care for childbirth
- Adequate nutrition and iron and folate supplements during pregnancy
- Reproductive health and family planning
- HIV testing during pregnancy
- Exclusive breastfeeding
- Postpartum care
- Immunization according to national guidelines
- Kangaroo mother care for low-birth-weight infants
- Basic newborn care and care of low-birth-weight infants

When comparing this list to the maternal and newborn interventions shown in Table 5, there are some notable differences. The WHO consultation did not specifically mention several important treatments for mothers and newborns that we have listed in Table 5. These are the following:

- Detection and treatment of maternal syphilis in areas of high prevalence
- Intermittent preventive treatment of malaria during pregnancy (IPTp) in malaria-endemic areas
- Provision of misoprostol for post-partum women to take immediately following a home birth
- Diagnosis and treatment of newborn sepsis
- Diagnosis and treatment of pneumonia and diarrhea in newborns

The WHO consultation group was cautious in its recommendations and will require more evidence prior to expanding their list, which most certainly will be updated from time to time.

EVIDENCE FOR COMMUNITY-BASED SERVICE PROVISION

From the analysis of the peer-reviewed and grey literature for assessments of programs, projects and studies that measured improvements in MNCH through community-based approaches, four main types of intervention implementation strategies were identified:

- Systematic home visits
- Cmmunity case management

- Participatory women's groups
- Provision of services in the community by outreach through mobile health teams

A detailed listing of what types of interventions can be implemented by which type of intervention implementation strategy has been described elsewhere.[15] Various types of home visits have been described, from regular visitation of all households to home visits to pregnant women or newborns or home visits to care for sick children or home visits for follow up after treatment or referral. Two principal kinds of participatory women's groups were used to deliver specific interventions: Participatory Learning and Action Groups and Care Groups. There have now been seven randomized controlled trials of Participatory Learning and Action Groups, as well as a recent meta-analysis that demonstrates an overall reduction of 37% on maternal mortality and 23% on neonatal mortality, with even greater reductions when the analysis is limited to those trials in which at least 30% of eligible pregnant women were reached.[16]

Community case management is so far limited to childhood illnesses: pneumonia, diarrhea, malaria and acute malnutrition. Although provision of services at outreach sites by mobile teams was not a commonly mentioned strategy in the studies reviewed, it is a common delivery strategy in practice and is the means by which high levels of immunization coverage have been achieved in Countdown Countries. Other less frequently mentioned implementation strategies include the development of birthing homes, birth huts, and maternity waiting homes as well as use of drug vendors for provision of medications at the community level. Table 6 describes the frequency with which these delivery strategies were identified in a literature review of 119 maternal health programs and 476 newborn and child health programs that implemented community-based interventions and documented improvements in maternal, neonatal or child health.

Table 6. Strategies employed in community-based programs, projects and studies for improving maternal, newborn and child health

Type of delivery strategy	Percentage of assessments of maternal health programs (n=119)	Percentage of assessment of newborn and child health programs (n=476)
Home visits	19.3	17.4
Community case management of acute illness by community-level workers	0.8	33.0
Participatory women's groups	16.0	10.5
Provision of services by mobile health teams based at peripheral health facilities	3.4	7.6

There were four general approaches to conveying educational messages in the community identified in the review of effective maternal and child health programs that used community-based approaches. The first approach involves educating groups of community-level people who would then educate others in the community. Examples of this approach include cascade training/training of trainers, whereby a small group of centrally located people would receive training and then pass the training on to other more peripheral groups of trainers until the message reaches every household. Another example of this approach involves education of small groups, such as mothers, grandmothers, men, or village leaders.

A second approach, sometimes connected to cascade training (as in the Care Group model), involves peer-to-peer education. This most commonly involved training mothers to teach other mothers who are neighbors.

A third approach to community-level education involved the use of special aids for communicating educational messages, such as audiovisual aids (most commonly in the form of flip charts, especially those than can be carried from house to house or used with small groups), and the creation and use of skits, stories and games that focus on specific educational messages, often created by local groups in individual communities. There are also examples of including social marketing, radio broadcasts, posters, and other more impersonal forms of communication.

A fourth approach, often referred to as mobile health or mHealth, involves sending out educational text messages to clients and special target groups in the community. mHealth also is a means for other functions as well, including supervision of health workers, obtaining help from a referral facility, and arranging transport for sick patients.

EVIDENCE FOR COMMUNITY EMPOWERMENT APPROACHES

A review of the RMNCH literature suggests that community empowerment (or participation) is an essential prerequisite for better health outcomes and that the failure to incorporate community participation into large-scale primary health care programs is a major reason for why many countries are failing to achieve the health-related MDGs.[17] Community participation has several dimensions and levels of intensity. The review demonstrated several commonly used strategies for mobilizing/empowering the community. These included such activities as meetings with the leaders of the community or with the entire community, formation of village health committees, holding village health days, sharing locally obtained data with the community, giving health talks at mosque gatherings, and formation of micro-credit groups. The process of establishing partnerships and collaborations with communities is a process well-known to NGOs working in health but often poorly developed in governmental health programs. By involving communities at the outset in the design of program operations, the stage is set for developing a partnership that can build capacity of communities and improve demand for key services. BRAC's Manoshi Project in Bangladesh engaged communities in a variety of different ways at the outset, not only by involving them in social mapping and census-taking, but also establishing community-level committees, responding to feedback provided by the community, and communicating with the community about the project's activities.[14] This program has gone to scale over a 6-year period (2007-2012), reaching 6.9 million slum dwellers. There has been a remarkable impact on increasing the percentage of births taking place in facilities (from 16% to 87%), on maternal mortality (from 294 to 130 deaths per 100,000 live births), and on neonatal mortality (form 43 to 17 deaths per 1,000 live births).[14]

Building ownership at the community level for health programming and health outcomes is a poorly understood process. Establishing local structures for program support and local decision-making are, as mentioned above, commonly encountered among programs that documented improvements in maternal and child health through community-based approaches. Local governance structures are being developed and called on to participate in the selection of candidates for CHW training, reimbursement of CHWs, and monitoring and supervision of their activities.[18]

A WORD ABOUT THE IMPORTANCE ELEMENTS OF PROJECT DESIGN

Project design is clearly a critical component of "real world" programming. Design of effective programming requires an understanding of the local epidemiological context. This includes understanding the most prevalent and serious preventable or treatable conditions in the population and their distribution in the population. Consideration must also be taken of the social and political context in which community activities are carried out. In the literature reviewed, various types of strategies were used for program design, identification of target groups, and surveillance. There are key tools refined with MCHIP support: the knowledge, practice and coverage (KPC) household survey; appreciative inquiry, formative research, and participatory learning and action (PLA); community mapping and census-taking, vital events registration and completion of verbal autopsies, pregnancy surveillance and birth registration; and distribution of client-held cards with client-specific health information.

The achievement of high coverage of interventions will not necessarily produce a decline in mortality unless the interventions are addressing the major causes of mortality in the program area. As programs are scaled up, the tendency is to take a "one size fits all approach." The failure to tailor to local epidemiology explains the failure to achieve a mortality impact of two strong programs that have been reported in the literature. Even well-resourced and executed projects can lose sight of this. One study from Bangladesh[10] achieved high coverage of antenatal and postnatal visits as well as improved care practices and knowledge of maternal and newborn danger signs by CHWs carrying out home visits. However, there was no reduction of newborn mortality in the intervention area compared to the control area. The lack of effect was attributed to the fact that the leading causes of newborn mortality in the study area were birth asphyxia and prematurity, conditions that were not targeted by the interventions.

In another study,[11] a retrospective assessment of the UNICEF Accelerated Child Survival and Development program in priority districts of 11 West African countries, demonstrated improvements in the population coverage of a number of key child survival interventions. However, the under-five mortality decline in the program area was no greater than the decline in comparison areas. One of the explanations given for this lack of mortality impact was the fact that the program did not give priority to interventions aimed at the leading causes of under-five mortality, namely pneumonia, diarrhea and malaria, newborn causes, and undernutrition. Instead, the program was successful in delivering interventions that could be readily carried out through an outreach campaign approach, such as immunizations, vitamin A distribution, and bed net distribution; provision of antenatal care with distribution of micronutrients, intermittent preventive treatment of malaria for pregnant women; and tetanus toxoid immunization.

A consideration of how best to interact with the community is also important. Community entry points can take three general forms: government managed health programming, civil society organizations (including NGOs), and private markets (including health care providers in the private sector, drug shops, and so forth). The need for a careful consideration of entry points was underscored by a recent secondary analysis of demographic and health survey (DHS) and multiple indicator cluster survey (MICS) data by Hodgins et al. that assessed care-seeking patterns for caretakers of children with pneumonia or diarrhea.[12] They showed that "Patterns varied considerably, with care seeking in most of sub-Saharan Africa predominantly from public-sector providers, in South Asia predominantly from the private sector, and in Southeast Asia from a mix of public and private sources." They concluded that at least in some settings "Community health workers were not an important source of care. The analysis also suggests that it may be inappropriate to focus program efforts on community health workers to the exclusion of more widely used sources of care." Clearly, even a highly effective and well-managed community health worker will have little impact if utilization of those CHWs is low.

It is rare that the entire range of issues is carefully considered in a systematic way when planning a program. One of the few methodologies taking a comprehensive approach to program design is the census-based, impact-oriented (CBIO) approach,[13] which calls for working in partnership with local communities to define programmatic priorities that are derived from an understanding of what the communities' priorities are and what the local epidemiological priorities are, as assessed from contact with all households or a sample of households in the proposed program area. This is carried out through a series of steps, first as exploratory program design and implementation followed by pilot program design and implementation prior to proceeding to a definitive program design and implementation.

A recent example of a successful RMNCH program that carried out a comprehensive assessment of the design context is the Manoshi Project in urban Bangladesh for community-based maternal, newborn and child health services, developed by BRAC.[14] This project now reaches 6.9 million slum dwellers in 10 cities in Bangladesh. It began as an exploratory project, then a pilot project, and subsequently a definitive project for going to scale. Three basic principles were employed form designing the project appropriate for the context: social mapping, census-taking, and community engagement.