

MCHIP Zambia End-of-Project Report

October 2011–June 2014



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Submitted by:
Jhpiego Zambia Country Office for MCHIP Zambia

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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Country Summary: Zambia



Selected Health and Demographic Data for Zambia	
GDP per capita (USD)	US\$1,457
Total population	13,046,508
Maternal mortality ratio (deaths/100,000 live births)	591
Any antenatal care from a skilled provider	93.7%
Antenatal care, 4+ visits	60.3%
Delivery with skilled birth attendant	46.5%
Any postnatal care	48.0%
Births less than 2.5 kg (low birth weight)	4.4%
Neonatal mortality rate (deaths/1,000 live births)	34
Total fertility rate	6.2
Modern contraceptive prevalence rate	32.7%
Unmet need for family planning	26.5%
Sources: Zambia International Monetary Fund, Zambia 2010 Census of Population and Housing Preliminary Results, 2007 Demographic and Health Survey.	

Major Activities by Program
<ul style="list-style-type: none"> • Emergency Obstetric and Neonatal Care (EmONC) <ul style="list-style-type: none"> • In-service training • On-site mentorship • Site strengthening • Newborn Resuscitation—Helping Babies Breathe (HBB) <ul style="list-style-type: none"> • Training of trainers • Integrated EmONC/HBB in-service trainings • Stand-alone in-service HBB trainings • On-site mentorship • Site strengthening • PPH Prevention, including misoprostol <ul style="list-style-type: none"> • Curriculum development • In-service training of clinical providers On-site mentorship • Family Planning: Long-Acting & Postpartum Methods <ul style="list-style-type: none"> • In-service training • On-site mentorship • Site strengthening

Program Dates	October 1, 2011–June 30, 2014					
Total Mission Funding to Date by Area	\$4,381,000					
Total Core Funding to Date by Area	Maternal and Child Health: \$155,000 HIV: \$70,000					
Geographic Coverage	No. (%) of provinces	3 (30%)	No. of districts	7	No. of facilities	244
MCHIP In-Country Contacts	Kwame Asiedu, Country Representative, kasiedu@mchip.net Michelle Wallon, Project Manager, mwallon@mchip.net					
Headquarters Managers and Technical Advisors	Brenda Rakama, East and Southern Africa Regional Director, brenda.rakama@jhpiego.org Samantha Holcombe, Senior Program Coordinator, samantha.holcombe@jhpiego.org Patricia Gomez, Senior MNH Advisor, patricia.gomez@jhpiego.org					

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Acronyms and Abbreviations

AMTSL	Active Management of the Third Stage of Labor
ANC	Antenatal Care
AVD	Assisted Vaginal Delivery
BEmONC	Basic Emergency Obstetric and Newborn Care
CDC	Centers for Disease Control and Prevention
CEmONC	Comprehensive Emergency Obstetric and Newborn Care
CSO	Central Statistical Office
DCMO	District Community Medical Office
DH	District Hospital
DOD	Department of Defense
DRC	Democratic Republic of the Congo
ECSACON	East, Central and Southern African College of Nursing
ECSA-HC	East Central and Southern Africa Health Community
EmONC	Emergency Obstetric and Neonatal Care
ENC	Essential Newborn Care
FP	Family Planning
GDP	Gross Domestic Product
GMHC	Global Maternal Health Conference
HBB	Helping Babies Breathe
HIV	Human Immunodeficiency Virus
HMIS	Health Management Information System
HMS BAB	Helping Mothers Survive, Bleeding After Birth
ICM	International Congress of Midwives
ICN	International Congress of Nurses
IUCD	Intrauterine Contraceptive Device
LARC	Long-Acting Reversible Contraception
M&E	Monitoring and Evaluation
MCDMCH	Ministry of Community Development, Mother and Child Health
MCHIP	Maternal and Child Health Integrated Program
MDG	Millennium Development Goal
MNCH	Maternal, Newborn (or Neonatal) and Child Health
MNH	Maternal and Newborn Health
MOH	Ministry of Health
PE	Pre-eclampsia

PMP	Performance Monitoring Plan
PNO	Provincial Nursing Officer
PPFP	Postpartum Family Planning
PPH	Postpartum Hemorrhage
PPIUCD	Postpartum Intrauterine Contraceptive Device
PQI	Performance and Quality Improvement
PSI	Population Services International
RHC	Rural Health Center
SM	Safe Motherhood
SMAG	Safe Motherhood Action Group
SMGL	Saving Mothers, Giving Life
TDRC	Tropical Diseases Research Center
TIMS®	Training Information Monitoring System
TWG	Technical Working Group
UHC	Urban Health Center
UNFPA	United Nations Population Fund
UNICEF	United Nations Children’s Fund
USAID	United States Agency for International Development
USD	United States Dollar
USG	United States Government
WHO	World Health Organization
ZISSP	Zambia Integrated Systems Strengthening Program

Acknowledgments

This report was made possible by the generous support of the American people through the United States Agency for International Development (USAID). The contents are the responsibility of the Maternal and Child Health Integrated Program (MCHIP) and do not necessarily reflect the views of USAID or the United States Government.

MCHIP would like to acknowledge the close collaboration and contributions of the Zambia Ministry of Health (MOH), Zambia Ministry of Community Development, Mother and Child Health (MCDMCH) and the district community health offices in Chipata, Choma, Kalomo, Lundazi, and Nyimba districts. In particular, we would like to acknowledge the leadership of the Luapula Provincial Health Office, Mansa District Community Medical Office and the Samfya District Community Medical Office. We would also like to thank the USAID Zambia Health, Population and Nutrition Team and recognize the staff of the following offices and organizations, including the *Saving Mothers, Giving Life* implementing partners, who helped to realize this project:

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- Elizabeth Glaser Pediatric AIDS Foundation
- Zambia Center for Applied Health Research and Development
- Zambia Integrated Systems Strengthening Program
- Zambia National Blood Bank Services
- Zambia Prevention, Counseling and Treatment II

MCHIP would also like to acknowledge the contribution of program staff in Zambia and Washington, D.C:

- Kwame Asiedu, Zambia Country Representative, three years
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- Constance Choka, MNH Technical Officer, three years
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- Fredah Simbala, MNH Technical Officer, one year
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- Stella Abwao, Newborn Health Technical Advisor, three years
- Chilobe Kambikambi, Director of Programs (Save the Children), three years
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Executive Summary

Although significant achievements in maternal, newborn and child health (MNCH) have been realized in Zambia, there is still much room for improvement. Currently Zambia ranks 156 out of 180 countries for maternal deaths globally with an estimated 2,600 maternal and 20,400 newborn deaths each year. Currently, 47% of deliveries are attended by a skilled birth attendant and only 48% take place in health facilities. While the maternal mortality ratio has decreased from 729 to an estimated 440 per 100,000 live births from 2001 to 2010, the lifetime risk of maternal death stands at 1 in 37. However, these deaths can be avoided. Of the complications that lead to death, 90% can be averted when women in need have access to quality prevention, diagnostic, and treatment services.

In an effort to achieve Zambia's Millennium Development Goal (MDG) targets of a 162/100,000 maternal mortality ratio and 35/1,000 infant mortality ratio by 2015, the Zambia Ministry of Health (MOH) and Ministry of Community Development, Mother and Child Health (MCDMCH) strategized to increase access to skilled delivery services at health facilities. Through the U.S. Government (USG)-led *Saving Mothers, Giving Life* (SMGL) endeavor, Zambia was selected as a pilot country to examine the effects that concentrated investments in demand creation and health facility improvement can have on maternal survival. Through its public-private partnership, SMGL set the aspirational goal of reducing maternal mortality by 50% in target districts in one year by increasing the availability and use of high-impact maternal health services, particularly in the labor/delivery and immediate postpartum periods.

The goal of USAID's Maternal and Child Health Integrated Program (MCHIP) is to assist in scaling up evidence-based, high-impact maternal, newborn and child health (MNCH) interventions to contribute to significant reductions in maternal and child mortality and progress toward Millennium Development Goals 4 and 5. Under SMGL, MCHIP is designated as the main clinical implementing partner for Mansa and Samfya districts, where MCHIP is working to improve the delivery of high-impact maternal and newborn health services in 62 target facilities. MCHIP is also designated as the *Helping Babies Breathe* (HBB) clinical implementing partner for Chipata, Choma, Kalomo, Lundazi, and Nyimba districts, where the project reaches a total of 179 target facilities.

In order to achieve the goal of 50% reduction in maternal mortality in Mansa and Samfya districts, reduce neonatal mortality in all seven districts and improve postpartum family planning, MCHIP is guided by three main objectives:

1. Increase the quality of labor/delivery and postpartum/postnatal care services in MOH/MCDMCH facilities in SMGL target districts
2. Build capacity of MOH/MCDMCH facilities in Mansa District to increase uterotonic coverage through use of active management of the third stage of labor (AMTSL) in facilities and through distribution of misoprostol for home birth
3. Expand the availability of quality postpartum family planning services in MOH/MCDMCH facilities in Mansa District

MCHIP's approach to reaching these goals and objectives was to work closely across national, district, and community levels to revise and standardize national training packages, implement activities to improve the quality of clinical care, and generate demand for maternal health services.

Key interventions included:

- Scaling up emergency obstetric and neonatal care (EmONC) services by training, equipping, and mentoring health care providers at all MOH and MCDMCH facilities that provide labor and delivery services
- Scaling up the *Helping Babies Breathe* (HBB) newborn resuscitation approach by integrating it with the national in-service EmONC curriculum, the National Newborn Framework and the Essential Newborn Care Guidelines, training HBB district trainers and providers, and providing target facilities with resuscitation equipment
- Assisting MCDMCH in the scale-up of misoprostol for postpartum hemorrhage (PPH) prevention by developing a standardized approach based on national policy and developing a three-day PPH prevention refresher training package for health care providers and a five-day safe motherhood action group (SMAG) training package focusing on community education
- Strengthening long-acting reversible contraception (LARC) and postpartum family planning (PPFP) services by training providers with a combined LARC/postpartum intrauterine contraceptive device (PPIUCD) training package and equipping facilities
- Developing a district clinical mentorship program that trained teams in mentorship, coaching, and clinical simulations. Teams were deployed on a monthly basis to all health facilities providing labor and delivery and LARC/PPFP services in Mansa and Samfya districts.



MCHIP has been recognized for its successful implementation of these key interventions and its accomplishments have had a wide reach across each objective.

ACCOMPLISHMENTS

Objective 1: Increase the quality of labor/delivery and postpartum/postnatal care services in MOH/MCDMCH facilities in SMGL target districts

MCHIP supported trainings for over 90% of labor/delivery providers (N=141) in Mansa District. As a result, 31 out of 32¹ facilities that provide delivery services in Mansa have at least one trained EmONC/HBB provider who is able to apply his/her skills and bring lifesaving services closer to the community and the home. During its first six months of implementation, 34% (N=122) of labor/delivery providers in Samfya District were trained. In Mansa, the overall case fatality rate dropped from 3.4% to 2.7%. The proportion of women receiving care according to national standards increased for PPH (87.5% to 94.7%), pre-eclampsia (PE) (50% to 100%), and eclampsia (75% to 100%).

MCHIP spearheaded the inclusion of HBB into the National Newborn Framework, bringing into focus gaps in neonatal resuscitation, especially misclassification of asphyxiated babies as stillbirths and incorrect resuscitation technique. Overall, MCHIP trained 346 providers in HBB

¹ One additional rural health center that provides labor and delivery services was established in Mansa District as MCHIP came to a close and thus did not benefit from MCHIP-supported interventions.

across the seven districts. With HBB included in the national EmONC curriculum, a greater number of providers will be reached, more cost-effectively.

Finally, MCHIP worked in close collaboration with the Mansa and Samfya district community medical offices (DCMOs) to develop district clinical mentorship programs. The program adapted



the evidence-based “low dose, high frequency” training method and obligated mentors and providers to approach quality improvement as a team, rather than as adversaries. Mentorship promoted retention of skills, especially in facilities with infrequent need to perform many basic emergency obstetric and newborn care (BEmONC) functions. Mentorship also promoted adherence to clinical guidelines. Over the life of the project, 85.4% of PE cases were treated according to clinical guidelines and 91% of PPH cases were treated according to clinical guidelines. And in Mansa District,

from baseline to Y6 Q2, use of the partograph increased from 6.1% to 44.3%, with 77.1% of partographs appropriately filled out and used for clinical decision-making. At the close of the MCHIP project, Mansa District was continuing to fund the mentorship program in order to continually improve adherence to clinical guidelines and the quality of services delivered.

Objective 2: Build capacity of MOH/MCDMCH facilities in Mansa District to increase uterotonic coverage through use of AMTSL in facilities and through distribution of misoprostol for home birth

MCHIP collaborated with Population Services International (PSI) to develop standard training curriculums in PPH to accompany the misoprostol national guidelines. The collaboration resulted in two draft national training packages: one to train health care providers responsible for distributing misoprostol to women at the first antenatal visit and one to train SMAGs to educate communities about misoprostol and the benefits of facility deliveries. These curriculums can ensure a standard training methodology regardless of the implementing partner and situate misoprostol within a comprehensive approach to PPH prevention, which includes facility delivery and AMTSL as the foremost interventions.

Using this package, MCHIP worked in partnership with the Mansa DCMO and trained 20 providers at high-volume health facilities in PPH prevention, including the distribution and tracking of misoprostol for home deliveries. Due to an unexpected national-level stock-out of misoprostol after this activity was undertaken, no further trainings incorporating misoprostol were conducted under MCHIP. Funds were instead utilized to support capacity development through additional EmONC training. Trainings and implementation of the improved curriculum should commence once misoprostol is back in stock.

Objective 3: Expand the availability of quality postpartum family planning services in MOH/MCDMCH facilities in Mansa District

MCHIP and the Mansa DCMO rolled out LARC and PPF, including the intrauterine contraceptive device (IUCD) and PPIUCD to seven high-volume facilities in the district. MCHIP trained district clinical mentors in LARC/PPFP for incorporation into monthly mentorship visits and an additional 26 providers from the target facilities in the district and provided them with necessary supplies. Despite slow initial uptake, in Y6 Q2, the number of women receiving an insertion of Jadelle® contraceptive implants increased from 0 at the baseline to 634 for all facilities and from 0 to 552 in MCHIP FP target facilities. Uptake in PPIUCD has been slower to increase; the proportion of women delivering at a facility receiving an PPIUCD insertion prior

to discharge increased from 0 at baseline to 0.8% in all facilities and from 0 to 1.2% in MCHIP FP target facilities during Y6 Q2, but providers and SMAGs are currently working to further sensitize communities. Providers and SMAGs are demonstrating that effective training and mentorship can overcome provider resistance to these methods and that when competent, confident providers are available, women will access LARC and PFP, including the IUCD. MCHIP promoted community awareness and acceptance of the PPIUCD by training SMAGs at target health facilities. SMAGS learned about messaging that focuses on the benefits and availability of family planning and addresses common misconceptions about LARC. Since SMAGs were trained and began activities in their communities, increases have been seen in the uptake of Jadelle implants and PPIUCD.

RECOMMENDATIONS

During its three years of SMGL implementation, MCHIP saw promising results leading toward achievement of its goals and objectives. However, as with any project, lessons were learned and recommendations were made for improvement moving forward.

- *Intensive investment in limited geographic/administrative areas can produce quick and potentially sustainable results*
Rather than spreading efforts widely across many districts or provinces, concentration in a specific location enables partners to focus resources and form strong partnerships with buy-in from local governments.
- *Collaboration among implementing partners is best achieved when partners share common, key priorities*
The common SMGL goal of achieving a 50% reduction in maternal mortality aligned partner interventions and encouraged active cooperation. The lesser focus on neonatal mortality reduction did, however, result in less collaboration and a more challenging rollout of HBB outside of Mansa and Samfya districts.
- *Mentorship is a low-cost, high-impact intervention that can effectively build upon and sustain the benefits of higher cost interventions in training and site strengthening*
At a cost of a few thousand dollars a month, MCHIP and the DCMOs were able to provide on-site clinical support to every health facility in the districts on a monthly basis. Practice with a mentor ensured consistent delivery of high-quality EmONC services and created a collaborative relationship between providers and mentors.
- *New health interventions are most likely to succeed when the community is actively engaged in their implementation*
By engaging SMAGs to educate communities about the use of LARC, MCHIP was able to debunk common myths and misconceptions and build trust between health care providers and patients to increase uptake of the interventions.

Introduction

BACKGROUND

Zambia has made some progress in reducing its maternal mortality ratio (from 729 to an estimated 440 per 100,000 live births) between 2001 and 2010²; however, much remains to be done to achieve Zambia's Millennium Development Goal (MDG) target of 162/100,000 by 2015. Infant mortality has also decreased from 107/1,000 in 1992 to 70/1,000 in 2007, but remains far from the MDG target of 35/1,000. A key strategy of the Zambia Ministry of Health (MOH) and Ministry of Community Development, Mother and Child Health (MCDMCH) to decrease maternal and neonatal mortality is to increase access to skilled delivery services at health facilities. As of 2007, 48% of all pregnant women and 33% of pregnant women living in rural areas delivered in a health facility. Numbers were similar for those accessing skilled providers,³ at 47% of all pregnant women and 31% of pregnant women living in rural areas.⁴ Delivery at a health facility does not, however, guarantee access to a skilled provider. Like many countries in the region, Zambia suffers a severe human resource shortage in the health sector. A 2011 study of human resource shortage and distribution in Zambia found staff vacancy rates of 15% to 63% in rural health centers and 30% to 70% for level two referral hospitals.⁵



In order to increase access to skilled labor/delivery providers, MOH and MCDMCH, with the support of donors and implementing partners, is taking a multipronged approach that aims to increase the number of midwives available through a pre-service training, improve the labor/delivery skills of existing health care providers, encourage task shifting of basic medical skills to lower-level cadres, and promote facility delivery through community mobilization.

Maternal and Child Health Integrated Program (MCHIP) programming in Zambia began in October 2011 under Y4 of the MCHIP Global Award with the introduction of the U.S. Government (USG)-led *Saving Mothers, Giving Life* (SMGL) endeavor. Zambia was selected as the first SMGL pilot country to test whether an intense implementation of interventions to increase facility deliveries and access to quality emergency obstetric and neonatal care (EmONC) services could significantly reduce maternal and neonatal mortality. Through the collaboration of USAID, Centers for Disease Control and Prevention (CDC), Department of Defense (DOD), and Peace Corps, as well as multiple implementing partners, SMGL set the aspirational goal of reducing maternal mortality by 50% in target districts in one year by increasing the availability and use of high-impact maternal health services, particularly in the labor/delivery and immediate postpartum periods. In the first two years of the now five-year initiative, SMGL targeted four districts—Mansa, Lundazi, Nyimba, and Kalomo—and beginning in October 2013, is targeting an additional four – Chipata, Choma, Samfya and

² World Health Organization (WHO), UNICEF, UNFPA, and the World Bank. 2012. *Trends in Maternal Mortality: 1990 to 2010*. Geneva, Switzerland: WHO.

³ Includes doctor, clinical officer, and nurse/midwife

⁴ Central Statistical Office (CSO), Ministry of Health (MOH), Tropical Diseases Research Center (TDRC), University of Zambia, and Macro International Inc. 2009. *Zambia Demographic and Health Survey 2007*. Calverton, Maryland, USA: CSO and Macro International Inc.

⁵ Ferrinho P, Siziya S, Goma F, and Dussault G. 2011. The human resource for health situation in Zambia: Deficit and maldistribution. *Human Resources for Health*. 2011; 9(1): 30. Published online December 19.

Kabwe. Kabwe will have limited interventions in health facilities that refer patients from contiguous districts.

Under SMGL, MCHIP is designated as the primary EmONC clinical implementing partner for Mansa and Samfya districts and the *Helping Babies Breathe* (HBB) implementing partner for all seven SMGL target districts. MCHIP's scope of work in Mansa District also includes family planning (focusing on long-acting and postpartum methods) and postpartum hemorrhage (PPH) prevention through increasing uterotonic coverage in facilities (with active management of the third stage of labor [AMTSL]) and in the community (with misoprostol).

GOALS AND OBJECTIVES

In order to achieve the goal of a 50% reduction in maternal mortality in Mansa and Samfya districts and reduce neonatal mortality in all seven districts, MCHIP is guided by three main objectives:

1. Increase the quality of labor/delivery and postpartum/postnatal care services in MOH/MCDMCH facilities in SMGL target districts
2. Build capacity of MOH/MCDMCH facilities in Mansa District to increase uterotonic coverage through use of AMTSL and through distribution of misoprostol for home birth
3. Expand the availability of quality postpartum family planning services in MOH/MCDMCH facilities in Mansa District

KEY INTERVENTIONS

In order to achieve the above goals and objectives, MCHIP worked at the national, district, and community levels to revise and standardize national training packages, implement activities to improve the quality of clinical care, and generate demand for maternal health services. Key interventions are summarized below:

Scale-up of EmONC Services. MCHIP has focused the bulk of its efforts in Mansa and Samfya districts in Luapula Province, training, equipping, and mentoring health care providers at 61 of 62 MCDMCH and MOH facilities that provide labor and delivery services. In Mansa District this includes 31 facilities—30 level-one health centers and one level-two referral hospital.⁶ In Samfya District this includes 30 facilities—27 level-one health centers and three level-one referral hospitals, including two mission hospitals.⁷ In both districts, after conducting an initial health facility assessment, MCHIP undertook EmONC in-service training of health care providers using the national EmONC curriculum and the HBB neonatal resuscitation curriculum. Facilities were also provided with EmONC equipment, including non-consumable items, such as instrument packs and delivery beds.



Scale-up of Newborn Resuscitation with HBB Curriculum. Although some newborn resuscitation training using the HBB approach had previously occurred in Zambia, MCHIP sought to institutionalize the HBB approach to resuscitation as the standard for newborn resuscitation training and practice in Zambia. At the national level, MCHIP worked with the

⁶ Four level-one health centers have recently been classified under Chembe District, but still remain under the administration of Mansa District.

⁷ Four level-one health centers have recently been classified under Lunga District, but still remain under the administration of Samfya District.

MCDMCH and the EmONC Technical Working Group (TWG) to integrate HBB into the national in-service EmONC curriculum, the National Newborn Framework and the Essential Newborn Care (ENC) Guidelines; the National Newborn Framework and ENC Guidelines set the HBB approach to newborn resuscitation as the national standard. In the five SMGL districts of Chipata, Choma, Kalomo, Lundazi, and Nyimba, MCHIP trained a total of 40 HBB district trainers and 158 healthcare providers and provided target facilities in all seven districts with NeoNatalie mannequins for resuscitation simulation, suction bulb devices, and Ambu bags. MCHIP worked with these district trainers to conduct on-site mentorship at 63.4% of target facilities.

Rollout of Misoprostol for PPH Prevention. MCHIP worked in close collaboration with MCDMCH and other implementing partners to develop a standardized approach to the rollout of misoprostol for PPH prevention based on national policy. MCHIP spearheaded the development of a three-day PPH prevention refresher training package for health care providers and a five-day safe motherhood action group training package focusing on community education. Unfortunately, a national-level stock-out of misoprostol has delayed finalization of the training packages and rollout of training.

Strengthening of LARC and PFP Services. MCHIP and the Mansa District Community Medical Office (DCMO) targeted seven high-volume facilities in the district for the introduction of long-acting reversible contraception (LARC) and postpartum family planning (PFP) services, including the postpartum intrauterine contraceptive device (PPIUCD). MCHIP trained 26 family planning and labor/delivery service providers using a combined LARC/PPIUCD training package and provided their facilities with equipment, including insertion and removal instrument packs and headlamps. Training was followed by on-site mentorship.

Development of District Clinical Mentorship Program. In order to maximize and sustain knowledge gained and skills acquired during in-service training, MCHIP worked with the Mansa and Samfya DCMOs to build teams of district mentors. The teams, composed primarily of DCMO staff, but also MCHIP and other implementing partner staff, were trained in a five-day course that addressed mentorship theory, coaching on live patient cases, and clinical simulations. Led by the district SMGL coordinator, these teams were deployed on a monthly basis to all health facilities providing labor and delivery and LARC/PFP services. During mentorship visits, mentors reviewed service delivery registers and client case files and mentored health care providers on the conduct of deliveries. Anatomic models, including the MamaNatalie birth simulator and NeoNatalie newborn resuscitation simulator, were used for simulations in order to keep providers' skills sharp, particularly those skills used for the more rarely performed basic emergency obstetric and newborn care (BEmONC) functions. In the other five SMGL districts, the national EmONC trainers trained in HBB served as HBB mentors.



RESULTS FRAMEWORK

Objective 1: Increase the quality of labor/delivery and postpartum/postnatal care services in MOH/MCDMCH facilities in SMGL target districts

- **Result 1:** Improved performance in EmONC by health care providers in Mansa and Samfya districts
- **Result 2:** Improved performance in neonatal resuscitation by health care providers in all SMGL target districts

- **Result 3:** Increased adherence to national service delivery guidelines for labor, delivery, and immediate postpartum/postnatal care in Mansa and Samfya districts

Objective 2: Build capacity of MOH/MCDMCH facilities in Mansa District to increase uterotonic coverage through use of AMTSL in facilities and through distribution of misoprostol for home birth

- **Result 1:** Increased application of AMTSL for facility births
- **Result 2:** Increased number of women correctly using misoprostol at home births

Objective 3: Expand the availability of quality postpartum family planning services in MOH/MCDMCH facilities in Mansa District

- **Result 1:** Increased number of facilities offering the PPIUCD
- **Result 2:** Increased number of women with facility deliveries initiating postpartum family planning methods

Major Accomplishments

OBJECTIVE 1: INCREASE THE QUALITY OF LABOR/DELIVERY AND POSTPARTUM/POSTNATAL CARE SERVICES IN MOH/MCDMCH FACILITIES IN SMGL TARGET DISTRICTS

Trained over 90% of skilled labor/delivery service providers in Mansa District and 34% in Samfya District through the national EmONC curriculum with an integrated module in newborn resuscitation using the HBB approach

Capacity-building in EmONC has formed the core of capacity-building interventions under SMGL. Although EmONC in-service training has been conducted in Zambia since 2007, MCHIP developed key best practices within the current national training model with the rationale that in-service training is most effective when opportunities for hands-on learning are maximized. Using the national three-week curriculum, MCHIP incorporated clinical simulations into the didactic modules and increased trainees' exposure to live obstetric cases by utilizing not only hospitals, but also high-volume, urban health centers as practicum sites. MCHIP further integrated the HBB curriculum into the trainings, first informally while the program advocated for support from the EmONC TWG and then formally, once that support was gained. In Mansa District, MCHIP supported trainings for over 90% of labor/delivery providers. In Samfya District, for which funds were more limited, 34% of labor/delivery providers were trained in the three-week curriculum during the first six months of implementation in the district. As a result 31/32 facilities that provide delivery services in Mansa and 21 of the 30 facilities that provide delivery services in Samfya now have at least one trained EmONC provider who is able to apply his/her skills, bringing lifesaving services closer to the community and the home. The outcomes of this work have been particularly evident in Mansa District, where there has been a reduction in the case fatality rate for deliveries from 3.4% to 2.7%. In Phase II of SMGL, it is hoped that continued support to Samfya District can yield similar results.



Implemented *Helping Babies Breathe* in Seven Districts

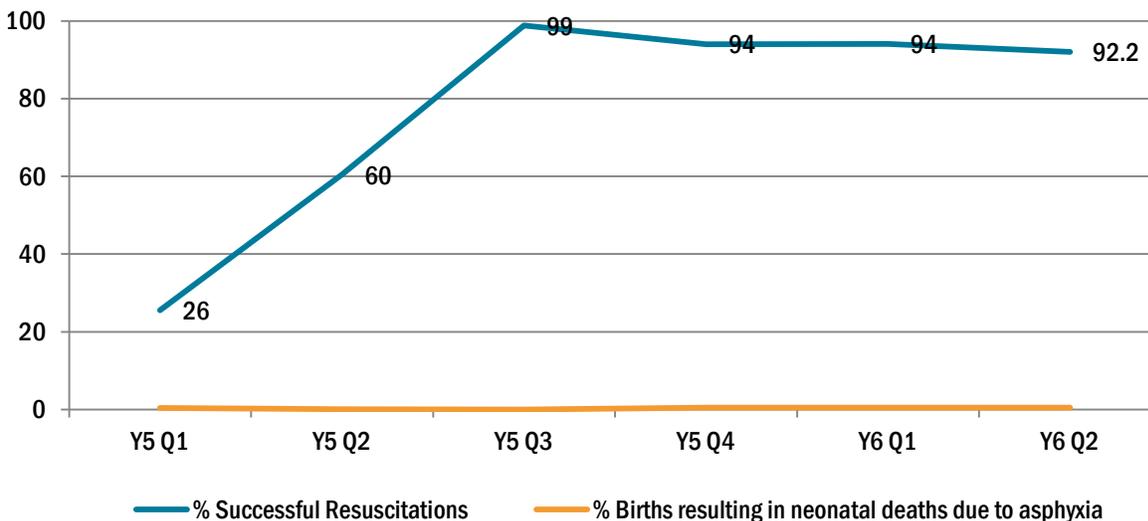
Under SMGL, MCHIP became a key leader in the effort to scale up HBB newborn resuscitation in Zambia. Although a few partners, such as the Latter Day Saints and East, Central and Southern African College of Nursing (ECSACON) had conducted small-scale activities in Zambia, when MCHIP began, MCDMCH and other partners had yet to accept HBB as an improved, evidence-based approach to training in newborn resuscitation. When initial efforts to incorporate HBB into the national EmONC curriculum were met with resistance at the central level, MCHIP incorporated HBB into EmONC trainings in Mansa and Samfya districts as an added component to the existing newborn resuscitation module. In the other SMGL districts, MCHIP trained district HBB trainers who became advocates as they experienced the simplicity and effectiveness of the HBB action plan and clinical approach. In these districts, MCHIP conducted stand-alone HBB trainings for providers who had been trained in EmONC by other partners, such as the USAID-funded Zambia Integrated Systems Strengthening Program (ZISSP), but who had not benefited from HBB. Soon after these trainings commenced, MCHIP

"I am now the talk of the village. The women shared that I saved the lives of their babies with the community. I am given a lot of respect because of this hard work."

Nurse Phoeby Chiluba Kaela, HBB trainee, Paul Mambilima RHC

received additional training requests from DCMOS in other SMGL and non-SMGL target districts. Although MCHIP could not provide direct support to the non-SMGL districts, district leadership was referred to MCHIP-trained HBB national and district trainers, who could facilitate the requested trainings. By the end of project, MCHIP trained 346 providers across the seven districts, reaching 54% of facilities providing labor/delivery services. In Y6 Q2, in Mansa District, 92.2% of babies who were not breathing at birth were successfully resuscitated. (See Figure 1.)

Figure 1. Newborn Resuscitation, Mansa District



Integrated HBB into National Newborn Framework, ENC Guidelines and EmONC In-Service Training Curriculum

After demonstrating the effectiveness of the HBB approach in the SMGL districts, support was obtained from the Child Health and EmONC TWGs to include HBB in the revised National Newborn Framework, ENC Guidelines and in the EmONC in-service training curriculum. MCHIP learned that in situations where implementing partners are resistant to the introduction of new training material and methodologies, interventions can best be introduced gradually as an addendum to current programs. Once effectiveness was proven on a small scale, advocacy at the national level was more effective. Inclusion of HBB in the National Newborn Framework and ENC Guidelines is important in that it made HBB the “gold standard” for neonatal resuscitation training in Zambia and allowed for its incorporation into national guidelines and curriculums. While other neonatal resuscitation training models were being utilized in Zambia, HBB brought renewed focus to ongoing gaps in neonatal resuscitation, particularly misclassification of asphyxiated babies as stillbirths and use of incorrect resuscitation techniques. Although there are no data on the number of asphyxiated babies who may have been incorrectly identified as stillbirths, anecdotal reports from HBB trainees confirm that previously this was not an uncommon occurrence in many health facilities. Now, with HBB included in the national EmONC curriculum, an integrated training approach will reach a greater number of providers, more cost-effectively than parallel HBB trainings alone could have achieved. Through the EmONC program, HBB will be scaled up with the continuing support of partners such as UNFPA, UNICEF, WHO, and ZISSP.



Developed District Clinical Mentorship Program for EmONC and Family Planning



Despite the heavy investment of time and funds dedicated to in-service training, the experience of other partners in Zambia has shown that training alone does not guarantee improvements in service delivery. In order to sustain and expand upon knowledge and skills gained during in-service trainings, MCHIP worked in close collaboration with the Mansa and Samfya DCMOs to develop district clinical mentorship programs. The program designs are based on a learning approach of “low dose, high frequency” training⁸, which evidence shows to be more effective and efficient than longer, single occurrence trainings. The program

differs from the routine quarterly supervision previously provided by the DCMOs—not just in the frequency of visits to the health centers, but also in the non-punitive approach that mentors take to address gaps in service delivery; mentors and providers approach quality improvement as a team, rather than as adversaries. Particularly at low-volume health facilities where the need to perform many of the BEmONC functions occurs infrequently, mentorship has promoted retention of skills so that providers are ready when complications do arise. Mentorship has also promoted adherence to clinical guidelines. In Mansa in Y6 Q2, 100% of both pre-eclampsia and eclampsia cases were treated according to clinical guidelines (see Figures 2 and 3) and 94.7% of PPH cases were treated according to clinical guidelines (see Figure 4). Also in Mansa District, from baseline to Y6 Q2, use of the partograph increased from 6.1% to 44.3%, with 77.1% of partographs appropriately filled out and used for clinical decision-making. With strong leadership from the DCMOs, MCHIP has found that mentorship has the potential to be the most cost-effective intervention to scale up and sustain quality clinical EmONC and family planning (FP) services. A one-day mentorship visit to each of 31 facilities costs less than three-thousand U.S. dollars a month – significantly less than a typical three-week, off-site EmONC training for 20 healthcare providers, which costs approximately seventy-thousand U.S. dollars. During the project’s final year, MCHIP gradually reduced mentorship funding in Mansa District from monthly to bimonthly, but found that the DCMO was able and willing to ensure that the visits continued by leveraging funding with other partners and integrating EmONC and FP mentorship with existing field activities. Nevertheless, even as Mansa District is ready to take full ownership of the program, inconsistent funding from central-level MCDMCH hinders the DCMO’s ability to fund activities.

⁸ The “low-dose, high frequency” training approach uses repeated, short (e.g., one day) trainings – often on-the-job – to improve healthcare provider skills.

Figure 2. Care Meeting National Standards—Pre-Eclampsia, Mansa District

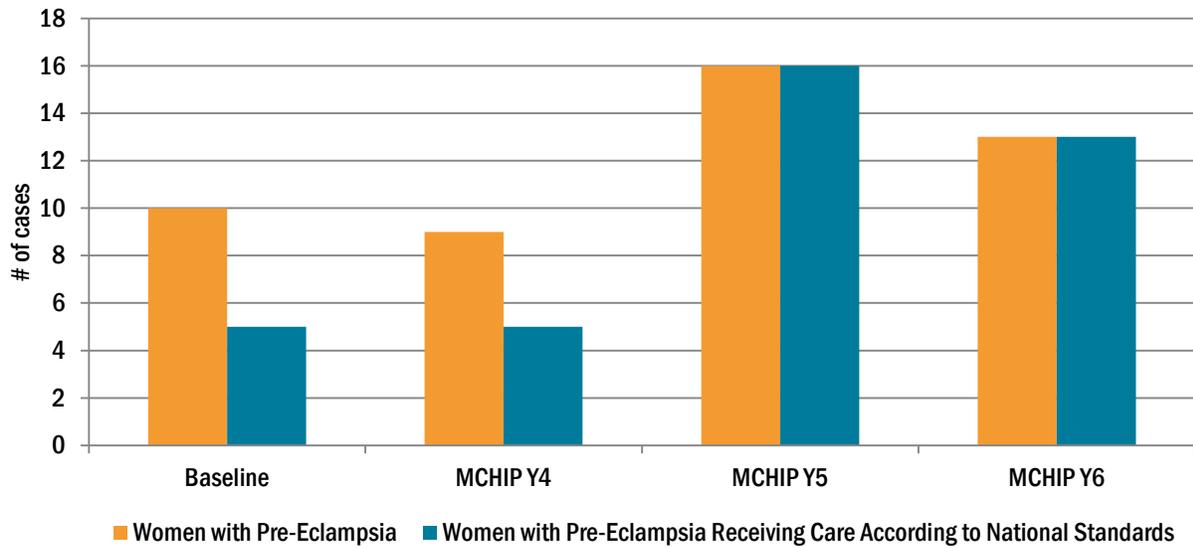


Figure 3. Care Meeting National Standards—Eclampsia, Mansa District

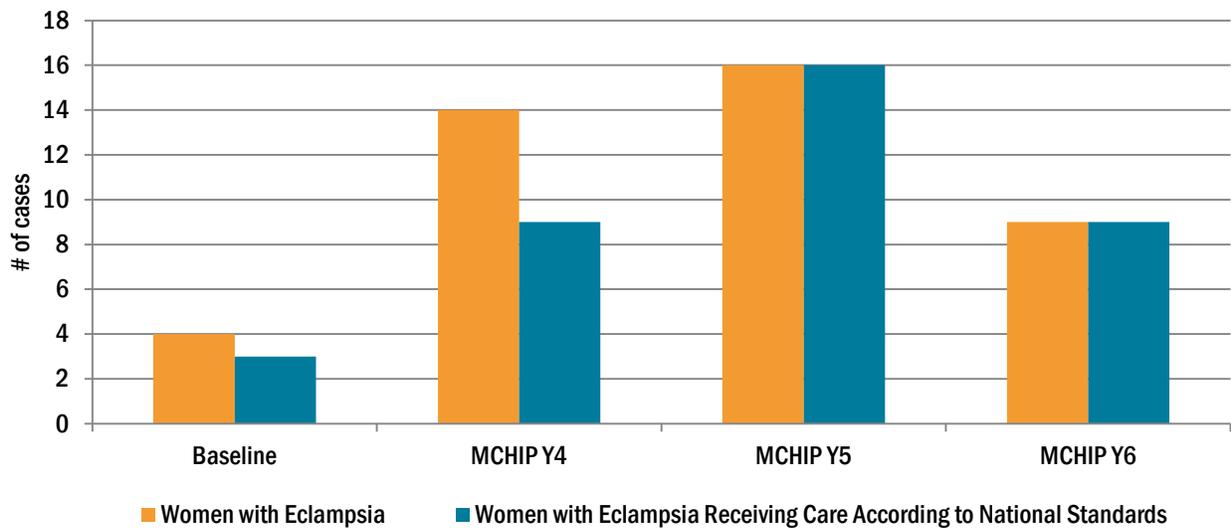
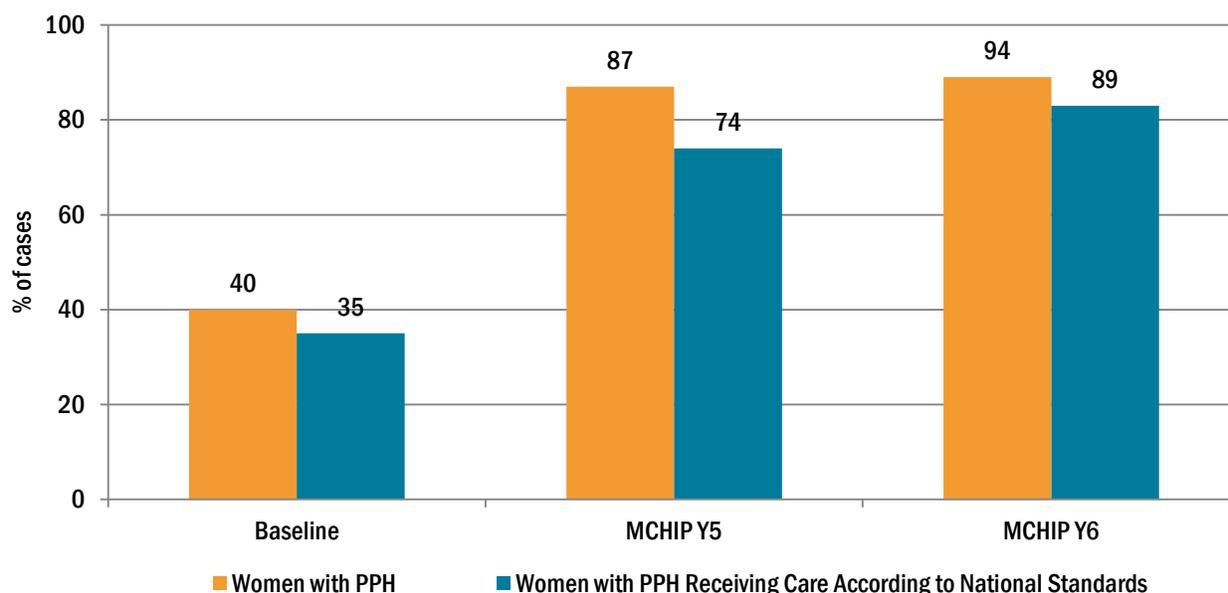


Figure 4: Care Meeting National Standards—Postpartum Hemorrhage, Mansa District



OBJECTIVE 2: BUILD CAPACITY OF MOH/MCDMCH FACILITIES IN MANSA DISTRICT TO INCREASE UTEROTONIC COVERAGE THROUGH USE OF AMTSL IN FACILITIES AND THROUGH DISTRIBUTION OF MISOPROSTOL FOR HOME BIRTH

Developed National In-Service Clinical and Community Education Training Packages for PPH Prevention, Including Misoprostol for Home Births

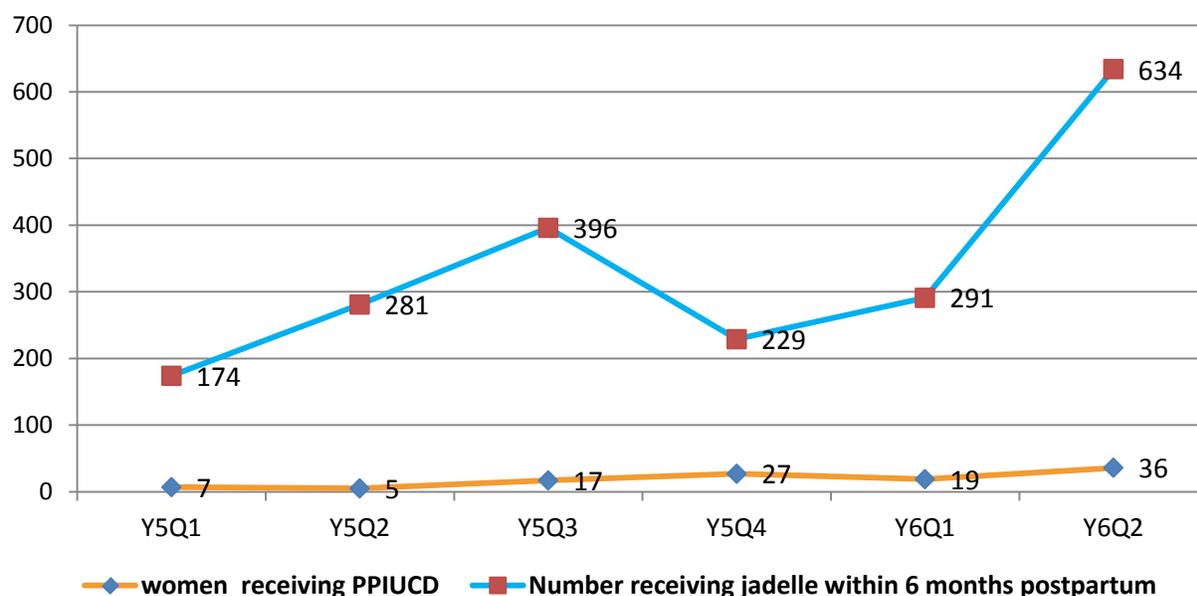
In 2009–2010, two pilot projects were conducted by Population Services International (PSI) and Venture Strategies Innovations to determine the feasibility and acceptability of using misoprostol to prevent PPH at home births. Although both projects yielded positive results, scale-up beyond the original 16 pilot districts did not occur until MCHIP and PSI received funding for this purpose in 2013. Although national guidelines had been developed, there was no standard training curriculum to accompany the scale-up. MCHIP thus collaborated with PSI in the development of two national training packages: one to train health care providers who would be responsible for distributing misoprostol to women at the first antenatal visit, and one to train community safe motherhood action groups (SMAGs) to educate communities about misoprostol and the benefits of facility deliveries. The three-day training course for health care providers was designed as a holistic “refresher course” in PPH prevention, situating misoprostol within broader prevention strategies, such as AMTSL, as well as infection prevention. This was done so that misoprostol would be seen as a “backup plan” rather than a primary method for PPH prevention. MCHIP and the DCMO piloted the healthcare provider training package in Mansa District, training providers from seven high-volume health facilities. The package was reviewed by the EmONC TWG and is now with MCDMCH awaiting final approval. Pilot of the SMAG curriculum and further training of healthcare providers has been delayed due to a national-level stock-out of the misoprostol commodity from July/August 2013 through the end of the project. Nevertheless, in Mansa District in Y6 Q2, 94.6% of delivery clients received AMTSL and 94.7% of PPH cases received care according to national standards.

OBJECTIVE 3: EXPAND THE AVAILABILITY OF QUALITY POSTPARTUM FAMILY PLANNING SERVICES IN MOH/MCDMCH FACILITIES IN MANSA DISTRICT

Expanded Access to Long-Acting and Postpartum Methods of Family Planning in Mansa District

Training in LARC, specifically the IUCD and Jadelle® contraceptive implants, was first scaled up in Zambia beginning in 2007. However, while most programs have seen rapid uptake of Jadelle, uptake of the IUCD has been minimal, leading to opinions within the MOH and MCDMCH that it is not a desirable or worthwhile method. With the understanding that most providers so far trained in the IUCD had received insufficient clinical practice to become competent, confident providers, MCHIP and the Mansa DCMO rolled out LARC and PFP, including the IUCD and PPIUCD, to seven high-volume facilities in the district. MCHIP, with leadership from the Luapula Provincial Nursing Officer (PNO), first trained 17 district clinical mentors as LARC/PFP trainers so that they could incorporate these skills into the monthly mentorship visits. MCHIP and the PNO then trained an additional 26 providers from the target facilities in the district and provided them with insertion and removal instruments and headlamps. To alleviate challenges of low IUCD and PPIUCD client loads during the training practicum, MCHIP liaised with PSI to access their PPIUCD sites in Lusaka. Post-training, the Mansa District mentors then made routine follow-up visits to the trained providers, coaching them through insertions on live clients and, in the absence of clients, mentoring them on clinical simulations on anatomic models. Uptake in PPIUCD has been slow to increase; the proportion of women delivering at a facility receiving PPIUCD insertion prior to discharge increased from 0 at baseline to 36 during Y6 Q2, but providers and SMAGs are now working to sensitize communities. The uptake of Jadelle has been more rapid. In Y6 Q2 the number of women receiving an insertion of Jadelle contraceptive implants was at 634. These results demonstrate that effective training, and especially mentorship, can overcome provider resistance to these methods and that when competent, confident providers are available, women will access LARC and PFP, including the IUCD. (See Figure 5.)

Figure 5. Uptake of Long-Acting and Postpartum Family Planning Methods, Mansa District



Promoted Community Awareness and Acceptance of PPIUCD

In order to address common misconceptions about the IUCD and educate women and families about the benefits of this long-acting and postpartum method, MCHIP and the Mansa DCMO trained existing SMAGs at target health facilities to provide information on the IUCD, PPIUCD, Jadelle, and short-term family planning methods. Messages focused on the benefits and availability of family planning and the sharing and dispelling of myths and fears associated with family planning. After the SMAGs were trained and began activities in their communities, increases were seen in the uptake of Jadelle implants and PPIUCD as demonstrated above.

Recommendations and Way Forward

Under SMGL, MCHIP and partners were tasked with an ambitious goal of reducing maternal mortality by 50% in target districts. Although we are still awaiting the results of the CDC-led maternal mortality audit, which will tell us whether we have reached that goal, our indicators show that much progress has been made in improving access to quality maternal and neonatal health services and in reducing maternal and neonatal deaths occurring at the facility. The following are lessons learned during the first three years of SMGL implementation and recommendations for future programming.

- **Intensive investment in limited geographic/administrative areas can produce quick and potentially sustainable results**

In an effort to bring programs to scale, many large, donor-funded programs spread interventions over many districts or provinces, demonstrating little overall impact in each. By contrast, SMGL concentrates significant human and financial resources into a small number of districts and toward a single goal. In doing so, partners are better able to meet the holistic set of needs that support improved access to maternal and newborn health (MNH) services—not only training, but also hiring additional midwives; not only purchasing equipment, but also providing lighting and radio communication; not only supplying bicycle ambulances, but also vehicle ambulances. With each of these components supporting the others, greater impact is achieved from their sum. Furthermore, when DCMOs receive such comprehensive support, they are more apt to form a true partnership with donors and partners, assume a leadership role, and invest their own resources to ensure program success.

- **Collaboration among implementing partners is best achieved when partners share common, key priorities**

Although there were some differences in implementation strategies between SMGL districts, in general, the common priority of improving access to EmONC in order to reduce maternal mortality facilitated cooperation and leveraging of expertise among the various SMGL partners. However, because neonatal mortality reduction was not a primary goal of SMGL nor was HBB included in the scope of work of the other main clinical implementing partners, MCHIP faced financial and logistical challenges in the scale-up of HBB in the districts of Chipata, Choma, Kalomo, Lundazi, and Nyimba, which hindered the impact and sustainability of this intervention. For EmONC, use of standard, integrated EmONC/HBB training package by all partners will also ensure consistent, quality training interventions.

- **Mentorship is a low-cost, high-impact intervention that can effectively build upon and sustain the benefits of higher cost interventions in training and site strengthening**

The clinical mentorship program in Mansa and Samfya districts was key to the success of MCHIP Zambia. With strong leadership from the DCMOs, mentorship has the potential to be the most cost-effective intervention to scale up and sustain quality clinical EmONC and FP services. At a cost of less than three thousand dollars a month, MCHIP and the DCMOs were able to provide on-site clinical support to every health facility in the districts on a monthly basis. This is a significantly lower cost than the seventy thousand dollars needed to train 20 healthcare providers in a three-week, off-site EmONC training. Through mentorship, the program not only ensured that high-quality EmONC services were delivered consistently, but also altered the relationship between health care providers and supervisors/mentors. Within a few months of the program's start, providers began to welcome mentors into their health facilities and were able to voice and request assistance in

filling gaps rather than feel that they had to hide their shortcomings. The positive shift in morale from the DCMO down to health facilities was an important result of the program and will be essential to continued service delivery improvements over time.

- **New health interventions are most likely to succeed when the community is actively engaged in their implementation**

With the introduction of new health interventions comes the inevitable spread of fear and misinformation. Trust is built between health care providers and patients when patients are provided with the information to make informed choices and take an active role in their own health care. It was only after these community discussions took place that MCHIP saw significant, increased uptake of the PPIUCD.

- **In situations where implementing partners are resistant to the introduction of new training material and methodologies, interventions can best be introduced gradually as an addendum to current programs**

Introduction of HBB materials was initially met with resistance by implementing partners, but once effectiveness of the HBB approach was proven through small-scale interventions in the SMGL districts, support was obtained from the Child Health and EmONC TWGs to include HBB in the revised National Newborn Framework and in the EmONC in-service training curriculum.

Annex 1: Indicator Matrix

Updated Performance Monitoring Plan (PMP)

MCHIP Zambia Y6 Q2

The following indicators compare baseline and endline data in Mansa and Samfya districts – the two districts in which MCHIP supported the full package of EmONC interventions, including neonatal resuscitation using the HBB approach. For Mansa District, the first two quarters of MCHIP Y4⁹ are compared to the first two quarters of MCHIP Y6. For Samfya District, the first quarter of MCHIP Y6 is compared to the second quarter of Y6, as interventions in Samfya only began in MCHIP Y6.

#	INDICATOR	DEFINITION	DATA SOURCE	FREQUENCY OF DATA COLLECTION	MANSA DISTRICT	SAMFYA DISTRICT	COMMENTS
					ACHIEVEMENTS Baseline (Oct11-Mar12) to Y6 Q1&2 (Oct13-Mar14)	ACHIEVEMENTS Baseline (Oct13-Dec13) to Y6 Q2 (Jan14-Mar14)	
Output Indicators							
1	Number of designated basic and comprehensive EmONC facilities performing all of their respective EmONC signal functions*	Number of designated basic EmONC facilities that are performing all 7 of the basic EmONC signal functions; number of designated comprehensive EmONC facilities that are performing all 9 of the comprehensive EmONC signal functions	Facility assessment	Quarterly	Baseline: 3.3% (1/30) Y6 Q2: 3.2% (1/31) performed all 9 functions; 3.2% (1/31) facilities performed at least 6/7 BEmONC functions	Baseline: 3.2% (1/31) performed all 9 functions; 6.5% (2/31) facilities performed at least 7 BEmONC functions Y6 Q2: 3.2% (1/31) performed all 9 functions. 9.7% (3/31) facilities performed at least 7 BEmONC functions	Indicator reflects EmONC functions performed in a particular quarter rather than functions that providers are capable of performing. Low volume facilities do not often need to perform all BEmONC functions in a single quarter.

⁹ MCHIP Y4 was the fourth year of the MCHIP Global Award and the first year of implementation in Zambia. MCHIP Y6 was the third and final year of implementation in Zambia.

#	INDICATOR	DEFINITION	DATA SOURCE	FREQUENCY OF DATA COLLECTION	MANSA DISTRICT	SAMFYA DISTRICT	COMMENTS
					ACHIEVEMENTS Baseline (Oct11-Mar12) to Y6 Q1&2 (Oct13-Mar14)	ACHIEVEMENTS Baseline (Oct13-Dec13) to Y6 Q2 (Jan14-Mar14)	
2	Proportion of all births that occur in facilities*	Numerator = number of births that occur in health facilities in a specified period, Denominator = expected number of births in the same period	Delivery register	Quarterly	Baseline: 56.9% (3282/5764) Y6 Q2: 74.1% (4465/6022) (17.2% increase)	Baseline: 55.5% (1523/2744) Y6 Q2: 64.7% (1775/2744) (9.2% increase)	
3	Proportion of all births that occur in designated BEmONC and CEmONC facilities*	Numerator = number of births in designated BEmONC and CEmONC facilities that occur in a specified period, Denominator = expected number of births in the same period	Delivery register	Quarterly	Baseline: 56.9% (3282/5764) Y6 Q2: 74.1% (4465/6022)	Baseline: 55.5% (1523/2744) Y6 Q2: 64.7% (1775/2744)	
4	Proportion of facility births attended by a skilled health care worker ¹⁰ *	Numerator = births attended by a skilled health care worker, Denominator = all births in facilities offering delivery services	Delivery register	Quarterly	Baseline(Jan-Jun13): 83.6% (3725/4457) Y6 Q2: 82.1% (3664/4465)	Baseline: 63.2% (963/1523) Y6 Q2: 73.2% (1299/1775)	In Mansa, at baseline, healthcare workers often signed for deliveries they did not conduct. This has been rectified through ongoing mentorship and improvement in staff attitude, hence the drop in %.
5	Proportion of facilities with functional communication systems for emergency referral*	Numerator = facilities with functional communication systems (high-frequency radio and/or facility-owned telephone) for emergency referral, Denominator = all facilities offering antenatal, delivery, and postnatal services	Facility assessment	Quarterly	Baseline: 10% (3/30) Y6 Q2: 54.8% (17/31) (44.8% increase)	Baseline: 64.5% (20/31) Y6 Q2: 64.5% (20/31)	

¹⁰ A skilled health care worker is defined as “an accredited health professional—such as a midwife, doctor, clinical officer or nurse—who has been educated and trained to proficiency in the skills needed to manage normal (uncomplicated) pregnancies, childbirth and the immediate postpartum period, and in the identification, management, and referral of complications in women and newborns” (WHO, 2008). Traditional birth attendants are excluded from this category.

#	INDICATOR	DEFINITION	DATA SOURCE	FREQUENCY OF DATA COLLECTION	MANSA DISTRICT	SAMFYA DISTRICT	COMMENTS
					ACHIEVEMENTS Baseline (Oct11-Mar12) to Y6 Q1&2 (Oct13-Mar14)	ACHIEVEMENTS Baseline (Oct13-Dec13) to Y6 Q2 (Jan14-Mar14)	
6	Proportion of facilities with functional transportation systems for emergency referral*	Numerator = facilities with functional transportation systems for emergency referral, Denominator = all facilities offering antenatal, delivery, and postnatal services	Facility assessment	Quarterly	Baseline: 46% Y6 Q2: 90.3% (28/31)	Baseline: 54.8% (17/31) Y6 Q2: 54.8% (17/31)	
7	Proportion of facilities with active SMAGs*	Numerator = number of facilities where SMAGS meet at least quarterly, Denominator = all facilities offering antenatal, delivery, and/or postnatal services	Facility assessment, Monthly SMAG meeting minutes	Quarterly	Baseline: 96.7% (29/30) Y6 Q2: 100% (30/30)	Baseline: 37.9% (11/29) Y6 Q2: 37.9% (11/29)	
8	Number of provincial and district MOH staff trained in PQI and mentorship	Number of MOH provincial staff trained in use of the MCHIP/SMGL PQI and mentorship tools and thereby qualified to participate in PQI/mentorship teams	MCHIP Training Reports, TIMS	Quarterly	Baseline: 3 Y6 Q2: 24 (F=13, M=11)	Baseline: 0 Y6 Q2: 21 (F=8, M=13)	
9	Proportion of target facilities receiving monthly supervision and mentorship visits	Numerator = Facilities that receive monthly visits by MCHIP-supported mentorship teams, Denominator = MCHIP target facilities	Mentorship Visit Reports	Quarterly	Baseline: 0 Y6 Q2: 90.3% (28/31)	Baseline: 0 Y6 Q2: 67.7% (21/31 facilities were visited for mentorship)	
10	Number of healthcare providers who complete EmONC in-service training	# of healthcare providers from MCHIP-supported facilities who receive 3-week in-service training in key EmONC functions	MCHIP Training Reports, TIMS	Quarterly	Baseline: 16 Y6 Q2: 126 (F=76, M=50)	Baseline: 0 Y6 Q2: 20 (F=11, M=9)	
11	Number of provincial and district MOH staff trained as trainers in "Helping Babies Breathe" (HBB)	# of provincial staff who complete and attain competency in HBB training of trainers	MCHIP Training Reports, TIMS	Quarterly	Baseline: 0 Y6 Q2: 13 (F=9, M=4)	Baseline: 0 Y6 Q2: 0	

#	INDICATOR	DEFINITION	DATA SOURCE	FREQUENCY OF DATA COLLECTION	MANSA DISTRICT	SAMFYA DISTRICT	COMMENTS
					ACHIEVEMENTS Baseline (Oct11-Mar12) to Y6 Q1&2 (Oct13-Mar14)	ACHIEVEMENTS Baseline (Oct13-Dec13) to Y6 Q2 (Jan14-Mar14)	
12	Number of healthcare providers trained in HBB	# of healthcare providers who complete and attain competency in HBB	MCHIP Training Reports, TIMS	Quarterly	Baseline : 0 Y6 Q2: 192 (F=113, M=79)	Baseline: 0 Y6 Q2: 31 (F=14, M=17)	
13	Number of healthcare providers trained in PPH prevention with misoprostol	# of healthcare providers who complete training in PPH prevention with misoprostol	MCHIP Training Reports, TIMS	Quarterly	Baseline : 0 Y6 Q2: 25 (F=16, M=9)	n/a	One training conducted prior to misoprostol stock-out
14	Number of community educators trained in community education for PPH prevention with misoprostol	# of community educators who complete training in education on PPH prevention with misoprostol	MCHIP Training Reports, TIMS	Quarterly	Baseline : 0 Y6 Q2 : 0	n/a	Trainings not conducted due to country-wide misoprostol stock-out
15	Number of healthcare workers trained in PPF, including PPIUCD and the contraceptive implant	# of healthcare providers who complete and attain competency in administration of PPF methods, including the PPIUCD and the contraceptive implant	MCHIP Training Reports, TIMS	Quarterly	Baseline : 0 Y6 Q2 : 26 (F=12, M=14)	n/a	
16	Number of community educators trained in community education for family planning, including long term and postpartum methods	# of community educators trained in community education for family planning, including long term and postpartum methods	MCHIP Training Reports, TIMS	Quarterly	Baseline: No data available Y6 Q2 : 123 (F=70, M=53)	n/a	
Outcome Indicators							
17	Met need for EmONC services*	Numerator = women with obstetric complications treated in EmONC facilities, Denominator = expected number of obstetric complications ¹¹ (estimated as 15% of expected births)	Delivery register	Quarterly	Baseline: 20.2% (175/864) Y6 Q2: 26.1% (234/898)	Baseline: 19.9% (82/412) Y6 Q2: 16.5% (68/412)	Only includes sites performing all 7 or 9 EmONC functions: MGH, Chembe RHC and Senama UHC; Lubwe RHC, Kasaba

¹¹ Direct obstetric complications occur during pregnancy or within 42 days of the end of pregnancy and include the following:

- Hemorrhage
- Prolonged/obstructed labor

#	INDICATOR	DEFINITION	DATA SOURCE	FREQUENCY OF DATA COLLECTION	MANSA DISTRICT	SAMFYA DISTRICT	COMMENTS
					ACHIEVEMENTS Baseline (Oct11-Mar12) to Y6 Q1&2 (Oct13-Mar14)	ACHIEVEMENTS Baseline (Oct13-Dec13) to Y6 Q2 (Jan14-Mar14)	
							RHC and Samfya DH
17 a	Met need for EmONC services* at facilities performing all key EmONC functions excepting assisted vaginal delivery (AVD)	Numerator = women with obstetric complications treated in facilities performing all EmONC functions minus AVD, Denominator = expected number of obstetric complications ² (estimated as 15% of expected births)	Delivery register	Quarterly	Baseline: 32.3% (279/864) Y6 Q2: 33.3% (299/898) All facilities	Baseline: 23.3% (96/412) All facilities Y6 Q2: 20.4% (84/412) All facilities	
18	Cesarean sections as a percentage of all births*	Numerator = births by cesarean section in EmONC facilities, Denominator= expected number of births	Delivery register, operating theatre register	Quarterly (at Mansa GH)	Baseline: 2.7% (153/5764) Y6 Q2: 4.1% (246/6022)	Baseline: 1.6% (45/2744) Y6 Q2: 1.6% (44/2744)	
19	Proportion of women giving birth in target facilities receiving AMTSL in target facilities	Numerator = vaginal deliveries in which AMTSL ¹² is performed, Denominator = all vaginal deliveries in target facilities	Delivery register	Quarterly	Baseline: 87.9% (2750/3129) Y6 Q2: 94.6% (3978/4204)	Baseline: 66.3% (966/1457) Y6 Q2: 72.6% (1237/1703)	
20	Proportion of women giving birth in target facilities receiving a uterotonic immediately following birth	Numerator = number of women giving birth in target facilities receiving a uterotonic immediately following birth, Denominator = all vaginal deliveries in target facilities	Delivery register	Quarterly	Baseline: 87.9% (2750/3129) Y6 Q2: 94.6% (3978/4204)	Baseline: 66.3% (966/1457) Y6 Q2: 72.6% (1237/1703)	
21	Proportion of deliveries with partographs	Numerator = client files with partographs, Denominator = total number of deliveries	Client files	Quarterly	Baseline: 6.1% (200/3282) Y6 Q2: 44.3% (1979/4465) (38.2% increase)	Baseline: 25%(381/1523) Y6 Q2: 29.1% (516/1775) (4.1% increase)	

- Postpartum sepsis
- Complications of abortion
- Severe pre-eclampsia/eclampsia
- Ectopic pregnancy
- Ruptured uterus

¹² AMTSL is defined as the following three elements: 1) use of uterotonic drug within one minute of birth (oxytocin preferred); 2) controlled cord traction and; 3) uterine massage after the delivery of the placenta

#	INDICATOR	DEFINITION	DATA SOURCE	FREQUENCY OF DATA COLLECTION	MANSA DISTRICT	SAMFYA DISTRICT	COMMENTS
					ACHIEVEMENTS Baseline (Oct11-Mar12) to Y6 Q1&2 (Oct13-Mar14)	ACHIEVEMENTS Baseline (Oct13-Dec13) to Y6 Q2 (Jan14-Mar14)	
22	Proportion of partographs correctly filled out and used for appropriate clinical decision making	Numerator = partographs correctly filled out, Denominator = all partographs filled out	Client files	Quarterly	Baseline : 72.5% (145/200) Y6 Q2: 77.1% (1527/1979)	Baseline: 72.7% (277/381) Y6 Q2: 93.6% (483/516)	
23	Proportion of women with pre-eclampsia receiving care according to national standards	Numerator = clients with indications of pre-eclampsia receiving documented care or appropriate referral according to national standards, Denominator = all clients with indications of pre-eclampsia	Client files	Quarterly	Baseline: 50% (5/10) Y6 Q2: 100% (9/9)	Baseline: 100% (3/3) Y6 Q2: 100% (4/4)	
24	Proportion of women with eclampsia receiving care according to national standards	Numerator = clients with indications of eclampsia receiving documented care or appropriate referral according to national standards, Denominator = all clients with indications of eclampsia	Client files	Quarterly	Baseline: 75% (3/4) Y6 Q2: 100% (5/5)	Baseline: 100% (1/1) Y6 Q2: 100% (1/1)	
25	Proportion of women with post partum haemorrhage (PPH) receiving care according to national standards	Numerator = clients with indications of PPH receiving documented care and/or appropriate referral according to national standards, Denominator = all clients with indications of PPH	Client files	Quarterly	Baseline(Jan-Jun13): 87.5% (35/40) Y6 Q2: 94.7% (54/57)	Baseline: 100% (15/15) Y6 Q2: 90.9% (20/22)	
26	Proportion of women receiving misoprostol at their 1 st ANC visit	Numerator = number of women receiving misoprostol at ANC; denominator = number of women attending ANC	SM Register (added column)	Quarterly	Baseline : 0 Y6 Q2: 0	n/a	Country-wide stock-out of misoprostol since Nov 2013
27	Proportion of women who received misoprostol at ANC, delivered at home and correctly self-	Numerator = number of women who received misoprostol at ANC, delivered at home and correctly self-administered the drug; Denominator = number of women who received	Facility tracking forms, SMAG data collection	Quarterly	Baseline : 0 Y6 Q2: 0	n/a	

#	INDICATOR	DEFINITION	DATA SOURCE	FREQUENCY OF DATA COLLECTION	MANSA DISTRICT	SAMFYA DISTRICT	COMMENTS
					ACHIEVEMENTS Baseline (Oct11-Mar12) to Y6 Q1&2 (Oct13-Mar14)	ACHIEVEMENTS Baseline (Oct13-Dec13) to Y6 Q2 (Jan14-Mar14)	
	administered the drug	misoprostol at ANC and delivered at home	forms				
28	Number of persons (age 15-49) educated in importance of facility deliveries and use of misoprostol	Number of persons (age 15-19) who attend community education or one-on-one education sessions regarding importance of facility delivery and use of misoprostol by trained SMAGs	SMAG reporting forms	Quarterly	Baseline : 0 Y6 Q2 : 0	n/a	
29	Proportion of women delivering in all facilities who initiate a modern FP method prior to discharge	Numerator = number of women delivering in all facilities initiating modern FP method prior to discharge; Denominator = number of women delivering in all facilities	Delivery Register, FP register	Quarterly	Baseline : 0 Y6 Q2: 0.9% (40/4465)	Baseline: 0.5% (8/1523) Y6 Q2: 0% (0/1775)	
29 a	Proportion of women delivering in MCHIP FP target facilities who initiate a modern FP method prior to discharge	Numerator = # of women delivering in MCHIP FP target facilities who initiate a modern FP method prior to discharge; Denominator = number of women delivering in all MCHIP FP target facilities	Delivery Register, FP register	Quarterly	Baseline: 0 Y6 Q2: 1.4% (40/2885)	n/a	
30 .	Couple years protection (CYP) for modern FP methods received prior to discharge in all facilities	Conversion factor for Copper-T380-A IUD = 4.6 CYP per IUD inserted + Conversion factor for Sterilization (male and female)* - Africa = 9.3 CYP per sterilization	Delivery Register, FP register	Quarterly	Baseline: 0 Y6 Q2: 202.8 CYP [165.6 CYP for PPIUCD + 37.2 CYP sterilisation]	Baseline: 69.7 CYP (4.6CYP for PPIUCD+65.1CYP for sterilisation) Y6 Q2: 0	
30 a	CYP for modern FP methods received prior to discharge in MCHIP FP target facilities	Conversion factor for Copper-T380-A IUD = 4.6 CYP per IUD inserted + Conversion factor for Sterilization (male and female)* - Africa = 9.3 CYP per sterilization	Delivery Register, FP register	Quarterly	Baseline: 0 Y6 Q2: 202.8 CYP [165.6 CYP for PPIUCD + 37.2 CYP sterilisation]	n/a	
31	Proportion of women delivering in all facilities receiving an IUCD insertion prior to discharge	Numerator: Number of women delivering in all facilities receiving an IUCD insertion prior to discharge; Denominator: Number of women delivering in all facilities	Delivery Register, FP register	Quarterly	Baseline : 0 Y6 Q2: 0.8% (36/4465)	Baseline: 0.1% (1/1523) Y6 Q2: 0% (0/1775)	

#	INDICATOR	DEFINITION	DATA SOURCE	FREQUENCY OF DATA COLLECTION	MANSA DISTRICT	SAMFYA DISTRICT	COMMENTS
					ACHIEVEMENTS Baseline (Oct11-Mar12) to Y6 Q1&2 (Oct13-Mar14)	ACHIEVEMENTS Baseline (Oct13-Dec13) to Y6 Q2 (Jan14-Mar14)	
31 a	Proportion of women delivering in MCHIP FP target facilities receiving an IUCD insertion prior to discharge	Numerator: # of women delivering in MCHIP FP target facilities receiving an IUCD insertion prior to discharge; Denominator = number of women delivering in all MCHIP FP target facilities	Delivery Register, FP register	Quarterly	Baseline: 0 Y6 Q2: 1.2% (36/2885)	n/a	
32	CYP for PPIUCD in all facilities	Conversion factor for Copper-T380-A IUD = 4.6 CYP per IUD inserted	Delivery Register, FP register	Quarterly	Baseline: 0 Y6 Q2: 165.6 CYP (4.6*36)	Baseline: 4.6 CYP (4.6*1) Y6 Q2: 0	
32 a	CYP for PPIUCD in MCHIP FP target facilities	Conversion factor for Copper-T380-A IUD = 4.6 CYP per IUD inserted	Delivery Register, FP register	Quarterly	Baseline: 0 Y6 Q2: 165.6 CYP (4.6*36)	n/a	
33	Number of women receiving an insertion of the Jadelle contraceptive implant in all facilities	Number of women in all facilities receiving an insertion of the Jadelle contraceptive implant	FP Register	Quarterly	Baseline : 0 Y6 Q2: 634	Baseline: 199 Y6 Q2: 433	
33 a	Number of women receiving an insertion of the Jadelle contraceptive implant in MCHIP FP target facilities	Number of women receiving an insertion of the Jadelle contraceptive implant in MCHIP FP target facilities	FP Register	Quarterly	Baseline: 0 Y6 Q2: 552	n/a	
34	CYP for Jadelle contraceptive implant for all facilities	Conversion factor for the 5-year Jadelle contraceptive implant = 3.8 CYP per implant	FP Register	Quarterly	Baseline: 0 Y6 Q2: 2409.2 CYP (3.8*634)	Baseline: 756.2 CYP (3.8*199) Y6 Q2: 1645.4 CYP (3.8*433)	
34 a	CYP for Jadelle contraceptive implant in MCHIP FP target facilities	Conversion factor for the 5-year Jadelle contraceptive implant = 3.8 CYP per implant	FP Register	Quarterly	Baseline: 0 Y6 Q2: 2097.6 CYP (3.8*552)	n/a	

#	INDICATOR	DEFINITION	DATA SOURCE	FREQUENCY OF DATA COLLECTION	MANSA DISTRICT	SAMFYA DISTRICT	COMMENTS
					ACHIEVEMENTS Baseline (Oct11-Mar12) to Y6 Q1&2 (Oct13-Mar14)	ACHIEVEMENTS Baseline (Oct13-Dec13) to Y6 Q2 (Jan14-Mar14)	
35	Overall CYP for Jadelle contraceptive implant, PPIUCD and sterilization	Sum of all Couple years protection (CYP) for all family planning methods collected by MCHIP= CYP per implant + CYP per IUD inserted + CYP per sterilization	Delivery Register, FP register	Quarterly	Baseline: 0 Y6 Q2: 2612 CYP (2409.2CYP Jadelle +165.6CYP PPIUCD +37.2CYP Sterilisation)	Baseline: 825.9 CYP (756.2 CYP Jadelle +4.6CYP PPIUCD +65.1CYP Sterilisation) Y6 Q2: 1645.4 CYP (1645.4CYP for Jadelle)	
36	Proportion of newborns receiving essential newborn care (ENC)	Numerator = live births in target facility receiving ENC ¹³ , Denominator = all live births in target facility	Client files, Delivery register	Quarterly	Baseline : 99.2% (3158/3185) Y6 Q2 : 100%(2110/2110)	Baseline:100% (1486/1486) Y6 Q2: 100% (1734/1734)	
37	Proportion of babies not breathing at birth that were resuscitated successfully	Numerator = newborns not breathing at birth that are successfully resuscitated at target facilities, Denominator = all newborns not breathing at birth at target facilities	Client files, Delivery register	Quarterly	Baseline(Jan-Jun13): 73.8% (186/252) Y6 Q2: 92.2% (225/244) (18.4% increase)	Baseline: 96.8% (61/63) Y6 Q2: 91.1% (41/45)	
38	Proportion of facilities with parenteral antibiotics in stock in the last three months*	Numerator = facilities with parenteral antibiotics in stock in the last three months Denominator = all facilities offering antenatal, delivery, and/or postnatal services	Bin stock-control cards	Quarterly	Baseline: 3.2% (1/31) Y6 Q2: 3.2% (1/31)	Baseline: 12.9% (4/31) Y6 Q2: 19.4% (6/31)	
39	Proportion of facilities with uterotonic drugs (or oxytocics) in stock in the last three months*	Numerator = facilities with uterotonic drugs (or oxytocics) in stock in the last three months Denominator = all target facilities	Bin stock-control cards	Quarterly	Baseline: 93.6% (29/31) Y6 Q2: 100% (31/31)	Baseline: 96.8% (30/31) Y6 Q2: 100% (31/31)	
40	Proportion of facilities with anticonvulsants in stock in the last three months*	Numerator = facilities with anticonvulsants in stock in the last three months Denominator = all facilities offering antenatal, delivery, and/or postnatal services	Bin stock-control cards	Quarterly	Baseline : 93.6% (29/31) Y6 Q2: 100% (31/31)	Baseline: 100% (31/31) Y6 Q2: 100% (31/31)	

¹³ ENC is defined as: A package of basic care including: 1) hygienic cord care; 2) thermal control (including drying and wrapping, skin-to-skin, and delayed bathing); 3) early and exclusive breastfeeding, and immunization.

#	INDICATOR	DEFINITION	DATA SOURCE	FREQUENCY OF DATA COLLECTION	MANSA DISTRICT	SAMFYA DISTRICT	COMMENTS
					ACHIEVEMENTS Baseline (Oct11-Mar12) to Y6 Q1&2 (Oct13-Mar14)	ACHIEVEMENTS Baseline (Oct13-Dec13) to Y6 Q2 (Jan14-Mar14)	
41	Proportion of facilities with MgSO4 in stock	Numerator = facilities with MgSO4 in stock Denominator = all facilities offering antenatal, delivery, and/or postnatal services	Bin stock-control cards	Quarterly	Baseline : 74.2% (23/31) Y6 Q2: 100% (31/31) (25.8% increase)	Baseline: 12.9% (4/31) Y6 Q2: 12.9% (4/31)	
42	Proportion of facilities in which at least one short-term family planning method is always available*	Numerator = number of facilities in which at least one short term family planning method is always available Denominator = all facilities offering antenatal, delivery, and/or postnatal services	Bin stock-control cards	Quarterly	Baseline : 100% (31/31) Y6 Q2: 100% (31/31)	Baseline: 93.6% (29/31) Y6 Q2: 100% (31/31)	
43	Proportion of facilities in which at least one long-term family planning method is always available*	Numerator = number of facilities in which at least one long-term family planning method is always available Denominator = all facilities offering antenatal, delivery, and/or postnatal services	Bin stock-control cards	Quarterly	Baseline(Jan-Jun13): 48.4% (15/31) Y6 Q2: 77.4% (24/31) (29% increase)	Baseline: 71% (22/31) Y6 Q2: 71% (22/31)	
Impact Indicators							
44	Overall Case fatality rate (deliveries)*	Numerator = number of maternal deaths due to direct obstetric complications in designated EmONC facilities Denominator = number of direct obstetric complications in designated EmONC facilities	Delivery register, Female ward (gynecology) register, Outpatient department register, Death register, and/or Maternal mortality audit	Quarterly	Baseline: 3.4% (6/175) Y6 Q2: 2.7% (8/296) (0.7% decrease)	Baseline: 4.2% (4/96) Y6 Q2: 0% (0/84) (4.2% decrease)	

#	INDICATOR	DEFINITION	DATA SOURCE	FREQUENCY OF DATA COLLECTION	MANSA DISTRICT	SAMFYA DISTRICT	COMMENTS
					ACHIEVEMENTS Baseline (Oct11-Mar12) to Y6 Q1&2 (Oct13-Mar14)	ACHIEVEMENTS Baseline (Oct13-Dec13) to Y6 Q2 (Jan14-Mar14)	
44 a	Case fatality rate due to hemorrhage*	Numerator = number of maternal deaths due to hemorrhage in designated EmONC Facilities, Denominator = number of cases of maternal hemorrhage in designated EmONC facilities	Delivery register, Female ward (gynecology) register, Outpatient department register, Death register, and/or Maternal mortality audit	Quarterly	Baseline: 5.4% (3/56) Y6 Q2: 5.3% (3/57)	Baseline: 13.3% (2/15) Y6 Q2: 0% (0/22)	
44 b	Case fatality rate due to sepsis/infection*	Numerator = number of maternal deaths due to sepsis/infection in designated EmONC facilities, Denominator = number of cases of maternal sepsis/infection in designated EmONC facilities	Delivery register, Female ward (gynecology) register, Outpatient department register, Death register, and/or Maternal mortality audit	Quarterly	Baseline : 0% (0/2) Y6 Q2: 18.2% (4/22)	Baseline: 0% (0/2) Y6 Q2: 0% (0/6)	2 fatalities in Mansa in Y6 Q2 dues to septic abortion
44 c	Case fatality rate due to hypertensive disorders, preeclampsia, and/or eclampsia*	Numerator = number of maternal deaths due to hypertensive disorders, pre-eclampsia, and/or eclampsia in designated EmONC facilities, Denominator = number of cases of maternal hypertensive disorders, pre-eclampsia, and/or eclampsia in designated EmONC facilities	Delivery register, Female ward (gynecology) register, Outpatient department register, Death register,	Quarterly	Baseline: 0% (0/14) Y6 Q2: 0% (0/14)	Baseline: 0% (0/7) Y6 Q2: 0% (0/5)	

#	INDICATOR	DEFINITION	DATA SOURCE	FREQUENCY OF DATA COLLECTION	MANSA DISTRICT	SAMFYA DISTRICT	COMMENTS
					ACHIEVEMENTS Baseline (Oct11-Mar12) to Y6 Q1&2 (Oct13-Mar14)	ACHIEVEMENTS Baseline (Oct13-Dec13) to Y6 Q2 (Jan14-Mar14)	
			and/or Maternal mortality audit				
44 d	Case fatality rate due to prolonged or obstructed labor*	Numerator = number of maternal deaths due to prolonged or obstructed labor in designated EmONC facilities Denominator = number of cases of prolonged or obstructed labor in designated EmONC facilities	Delivery register, Delivery register, Female ward (gynecology) register, Outpatient department register, Death register, and/or Maternal mortality audit	Quarterly	Baseline: 0.6% (1/167) Y6 Q2: 0% (0/172)	Baseline: 0% (0/44) Y6 Q2: 0% (0/41)	
44 e	Case fatality rate due to other direct obstetric causes not included in 27A -27D*	Numerator = number of maternal deaths due to other direct obstetric causes not included in 32B-32E in designated EmONC facilities Denominator = number of cases of other direct obstetric causes not included in 6B-6E in designated EmONC facilities	Delivery register, Female ward (gynecology) register, Outpatient department register, Death register, and/or Maternal mortality audit	Quarterly	Baseline: 4.4% (2/45) Y6 Q2: 3.2% (1/31)	Baseline: 7.1% (2/28) Y6 Q2: 0% (0/10)	

#	INDICATOR	DEFINITION	DATA SOURCE	FREQUENCY OF DATA COLLECTION	MANSA DISTRICT	SAMFYA DISTRICT	COMMENTS
					ACHIEVEMENTS Baseline (Oct11-Mar12) to Y6 Q1&2 (Oct13-Mar14)	ACHIEVEMENTS Baseline (Oct13-Dec13) to Y6 Q2 (Jan14-Mar14)	
45	Number of maternal deaths due to PPH at facility and home deliveries	Number of maternal deaths due to PPH which occur at target health facilities and at home births in target communities	District maternal death audits	Quarterly	Baseline : 3 Y6 Q2: 3	Baseline: 2 Y6 Q2: 2	Does not include home deliveries; home delivery data to be gathered after SMAG training in PPH prevention, including misoprostol; trainings delayed due to misoprostol stock-out
46	Proportion of facility births that result in stillbirth*	Numerator = stillbirths in designated EmONC facilities, Denominator = all births in designated EmONC facilities	Delivery register	Quarterly	Baseline : 3% (97/3282) Y6 Q2: 2.7% (122/4465)	Baseline: 2.4% (37/1523) Y6 Q2: 2.2% (39/1775)	
47	Proportion of facility births that result in intrapartum stillbirth	Numerator = stillbirths occurring during labor and delivery in designated EmONC facilities, Denominator = all births in designated EmONC facilities	Delivery register, Client Files	Quarterly	Baseline(Jan-Jun13): 1.7% (74/4457) Y6 Q2: 1.7% (76/4465)	Baseline: 1.5% (23/1523) Y6 Q2: 1.5% (26/1775)	
48	Proportion of facility births that result in very early neonatal deaths due to any cause*	Numerator = newborn deaths within the first 24 hours of life in designated EmONC facilities, Denominator= all live births in designated EmONC facilities	Delivery register	Quarterly	Baseline: 1.3% (58/4318) Y6 Q2: 1.3% (55/4343)	Baseline: 1.2% (18/1486) Y6 Q2: 0.8% (14/1734)	
49	Proportion of facility births that result in very early neonatal deaths due to birth asphyxia*	Numerator = newborn deaths within the first 24 hours of life due to birth asphyxia in designated EmONC facilities, Denominator= all live births in designated EmONC facilities	Delivery register	Quarterly	Baseline(Jan-Jun13) : 0.2% (7/4318) Y6 Q2: 0.5% (22/4343)	Baseline: 0.4% (6/1486) Y6 Q2: 0.2% (3/1734)	
50	Proportion of facility births that result in early neonatal death*	Numerator = deaths within the first 7 days of life, Denominator = all live births in designated EmONC facilities	Delivery register	Quarterly	Baseline: 1.3% (58/4318) Y6 Q2: 1.3% (55/4343)	Baseline: 1.3% (20/1486) Y6 Q2: 0.9% (16/1734)	

Annex 2: Success Stories

NO PANIC: A CLINICAL OFFICER IN ZAMBIA LEARNS TO LOVE THE LABOR WARD

Aloysius Mulenga Kakungu, a clinical officer at Senama Urban Health Center (UHC) in Mansa District, Zambia, used to feel uneasy in the labor ward. Aloysius had little knowledge of how to handle obstetric emergencies; if there was an emergency, he would try by all means to avoid it.

That was until Aloysius was selected for training in emergency obstetric and neonatal care (EmONC) and *Helping Babies Breathe* (HBB) under the USAID-funded Maternal and Child Health Integrated Program (MCHIP). The training—a part of the U.S. Government (USG)-led *Saving Mothers, Giving Life* (SMGL) endeavor—equips providers with the knowledge and skills needed in the labor ward.

A few weeks after EmONC training, Aloysius was sent to work at Mano—a rural health center 25 kilometers from Senama—to temporarily replace staff who were out of station. Early one morning a mother arrived in labor, almost fully dilated at eight centimeters. As he examined the woman, he felt not only the baby’s head, but also the baby’s hand on one side of the head. As Aloysius recounts, “I remembered what we were taught in the training: not to panic.” As the mother delivered the baby, Aloysius gently pushed the hand into position and the baby arrived safe and healthy. “There was no need for me to refer this mother and baby!” Aloysius happily remarks, “What a joyful moment this was for me and the mother. Her relatives were very grateful for the safe delivery.”



Aloysius Mulenga Kakungu, Clinical Officer, proudly shares his EmONC successes with colleagues in Mansa.

“Over the past months I have come to experience many joyful moments, which I can only attribute to the EmONC training and the intensive mentorship I have received. I am not the same—I feel complete and confident in handling obstetric and gynecological emergencies!”

Aloysius Mulenga Kakungu, Clinical Officer, Senama UHC

This is just one of Aloysius’s many successes since benefiting from the EmONC and HBB programs. As Aloysius states, “After my training in EmONC and HBB, I developed confidence in handling obstetric emergencies. The labor ward has become one of my favorite places to work. I have managed a number of emergencies using the skills and knowledge I acquired from the EmONC training and the intensive mentorship we are receiving from district mentors. Among the many procedures I have performed include vacuum

extraction, neonatal resuscitation, management of postpartum hemorrhage, management of shock, and manual vacuum aspiration.” As a result of his newfound expertise, he is also providing peer-to-peer mentorship to other rural health centers.

In Zambia, the SMGL endeavor is working in close partnership with the Ministry of Community Development, Mother and Child Health (MCDMCH) and other USG implementing partners to reduce maternal mortality by 50% in seven target districts. The SMGL partnership aims to achieve this reduction by increasing the availability and use of high-impact maternal health services. A key intervention is training more health care providers like Aloysius and providing them with the support they need to save women’s lives.

CLINICAL MENTORSHIP SAVES WOMEN'S LIVES IN RURAL ZAMBIA

In January 2013, Nurse Charity Bwalya went to Pola Rural Health Center in Chiengwe District, Zambia, for a routine mentorship visit on timely assessment of HIV-positive pregnant women. However, upon arrival, she found relatives of a pregnant woman outside the facility wailing, believing the woman had died. Charity rushed inside to find the woman in shock and bleeding severely due to a miscarriage. Luckily, in addition to implementing an HIV program, Charity Bwalya is one of 17 mentors trained in emergency obstetric and neonatal care (EmONC) and *Helping Babies Breathe* (HBB) by the USAID-funded Maternal and Child Health Integrated Program (MCHIP). This program, implemented under the U.S.

Government-led *Saving Mothers, Giving Life* endeavor, supports teams of mentors to make monthly visits to rural health facilities, where they coach staff in refining important skills such as management of postpartum hemorrhage, neonatal resuscitation, and assisted vaginal delivery.

Putting her EmONC skills into action, Charity resuscitated the woman, removed the retained products of conception, and gave her a blood transfusion. By this time, the woman—whose relatives believed her to be lost—was not only conscious, but speaking.

However, Charity did not stop there. Recognizing the opportunity in the situation, she reviewed the case with the center's health care providers. "After saving the woman's life I now had an opportunity to mentor the providers in initial rapid assessment and the basics of resuscitation. We reviewed the importance of setting an emergency tray with all basic equipment for resuscitation in the labor ward. The tray was set immediately and replenished with all the necessary supplies."

"Before I underwent the training, I could focus only on HIV issues. But now I am able to look at EmONC and HBB services competently, and I have used the skills to mentor other providers in the surrounding districts."

Charity Bwalya, Enrolled Nurse and EmONC Mentor

Charity feels proud of her work. "The EmONC training has equipped me and I feel very confident, competent, and complete to provide mentorship to the providers in the district. Before I underwent the training, I could focus only on HIV issues. But now I am able to look at EmONC and HBB services competently, and I have used the skills to mentor other providers in the surrounding districts like Nchelenge, Chiengwe, Mwense—districts other than Mansa."

In addition to working with patients, district mentorship teams also coach health care providers through simulations on anatomic models, promoting retention of skills even in the absence of clinical cases. The effect of these capacity-building efforts has been evident, with 100% of pre-eclampsia/eclampsia cases and 84% of postpartum hemorrhage cases now being managed according to national clinical guidelines.

Charity appreciates the opportunity to be a mentor, stating, "I am very grateful to MCHIP for the knowledge and skills they gave me. I feel I am a 'fully baked' EmONC mentor even as I go around doing my HIV work."



Charity Bwalya shares her story with colleagues at a clinical mentors' meeting in Mansa.

STRENGTHENING SKILLS AND SAVING LIVES THROUGH MENTORSHIP IN EMERGENCY OBSTETRIC AND NEONATAL CARE: ESTHER'S RURAL HEALTH CENTER EXPERIENCE

Matanda Rural Health Center (RHC) is a remote facility in Luapula Province in northern Zambia, situated 60 kilometers from the nearest hospital in Mansa, of which 40 kilometers is over a rough gravel road. Matanda RHC has no cell phone network; so when there are emergencies, health center staff must walk or cycle 27 kilometers to call for an ambulance. These conditions made it important for the USAID-funded Maternal and Child Health Integrated Program (MCHIP) to ensure that Nurse Esther Kabaye, until recently Matanda's only clinician, is able to competently and confidently perform the basic functions of emergency obstetric and neonatal care (EmONC).

In May of 2012, under the *Saving Mothers, Giving Life* endeavor, MCHIP began providing on-site clinical

mentorship to Ms. Kabaye at the Matanda clinic. In June, MCHIP trained 14 more districts mentors, so that Ms.

Kabaye receives a visit at least once a month by mentors who help to refine her skills in key EmONC functions, such

as management of postpartum hemorrhage and neonatal resuscitation. The mentorship has yielded positive results as evidenced by the numerous lives saved at Matanda. One of these lives is that of Agnes whose village is seven kilometers from the health center. Agnes arrived at the clinic bleeding profusely from a miscarriage. Now skilled in how to handle such a situation, Ms. Kabaye immediately stabilized Agnes and expertly performed a manual vacuum aspiration. When Ms. Kabaye then found out that this was the devastated woman's third miscarriage, she counseled her and performed further tests, identifying a potential cause of Agnes' repeated miscarriages.

This, however, is not the only type of emergency that Ms. Kabaye has effectively handled. In June 2012, Helen, a 35-year-old woman from a nearby village, was brought to the health center in labor, where she delivered a healthy 3.5 kilogram baby. Then, just when all appeared well, Helen suddenly began bleeding heavily. Ms. Kabaye, having been mentored in the management of postpartum hemorrhage, quickly stopped the bleeding by performing bi-manual compression of the uterus. In addition, Nurse Kabaye, has successfully resuscitated several asphyxiated newborns.

"With the support that you have been giving me through your mentorship, I am so happy that I am able to effectively handle emergencies and save lives which would have been lost."

Nurse Esther Kabaye, Matanda RHC

Ms. Kabaye's impressive work has not gone unnoticed. "The community, including the chief, appreciates my services such that they do not even want me to go on leave," says Ms. Kabaye. These services go beyond the Matanda community; she also treats clients from beyond the Luapula River in the Democratic Republic of the Congo (DRC). According to Ms. Kabaye, "There is a health center just across the border manned by a registered nurse who refers all obstetric emergencies to this center." This demonstrates the confidence that the community, including other health care workers, have developed in Ms. Kabaye. She has also become confident enough to share her skills with other members of staff, such as Dorcas Kapandula, a newly graduated nurse posted to her RHC whom she has been mentoring. I have only been here for a short while, but I have learned a lot from Sister Kabaye," affirms Ms. Kapandula.



Nurse Esther Kabaye (R) with her new colleague and mentee, Nurse Dorcas Kapandula (L)

IN RURAL ZAMBIAN CLINIC, SOLO HEALTH CARE PROVIDER ATTRIBUTES SUCCESS IN SAVING NEWBORN LIVES TO MCHIP SUPPORT

As the only health care provider at the Paul Mambilima Rural Health Center (RHC), Nurse Phoeby Chiluba Kaela often works round-the-clock, treating cases of suspected malaria and pneumonia, providing pre- and postnatal care for women, and traveling miles to vaccinate children in their villages. That's in addition to the births she attends several times a week.

The majority of her clients are women, and providing skilled maternal and newborn health is her passion. A nurse-midwife for 23 years, duly trained in this area, Phoeby has handled obstetric emergencies and complications from birth because the nearest hospital is a two-to- three hour drive over rugged terrain. But Phoeby has struggled to keep newborns alive. She lacked the proper resuscitation equipment: "Sometimes I was using a syringe to suction babies, and I would use gauze to give some form of mouth-to-mouth resuscitation."



Nurse Phoeby Chiluba Kaela demonstrates newborn resuscitation on the NeoNatalie model.

Then in April, Brenda Mubita and Constance Choka, technical officers for the U.S. Agency for International Development's Maternal and Child Health Integrated Program (MCHIP), delivered emergency obstetric and newborn care equipment to the Mambilima center. They gave Phoeby an on-the-job orientation to a newborn resuscitation initiative known as *Helping Babies Breathe* (HBB), an essential newborn care program sponsored by MCHIP.

After this brief training in HBB and use of the NeoNatalie kit, Phoeby was determined to improve her practices in her clinic. "They oriented me how to use the penguin suction device and the neonatal Ambu bag," said Phoeby. "Now I had an answer to my baby resuscitation problems." Anxious to master the equipment, Phoeby stayed after hours to practice and follow the steps of HBB, an evidence-based program that focuses on the "golden minute" when stimulation to breathe and ventilation with a bag and mask can save a life. Her determination has paid off in newborn lives saved. "The very next day I had a woman in labor who later delivered an asphyxiated baby," said Phoeby. "I quickly picked up my penguin sucker and suctioned the baby. The baby didn't cry. I remembered to dry the baby and used the neonatal Ambu bag to resuscitate the baby.... I was excited as I saw the baby turning from gray to pink as I continued Ambu bagging."

The infant soon began crying and Phoeby gave the baby to the mother for skin-to-skin care. HBB is designed to be part of a program for essential newborn care, which covers important aspects of care in the first days after birth, such as warmth and breastfeeding, in more depth. "A few days later another woman came (into the clinic) and gave birth to a baby with meconium," Phoeby said, "and again I used the penguin sucker and the Ambu bag, and the baby survived. I now fully understand the importance of the "golden minute." I will now be even more vigilant in resuscitating asphyxiated babies."

During a recent HBB training in Mansa from May 21–23, 2012, Phoeby shared her experiences with other workshop participants, praising the resuscitation techniques and equipment and urging fellow health care workers to take their training seriously.

"I am now the talk of the village," said Phoeby, who plans to further her nursing education this summer. "The women shared that I saved the lives of their babies with the community. I am given a lot of respect because of this hard work."

HELPING BABIES BREATHE FROM PRACTICE TO REALITY

Jonathan Musonda has always been passionate about the lives of mothers and their newborns. As a pediatric anesthesiologist at Ndola Central Hospital, Mr. Musonda has spent over a decade in the Copperbelt region of Zambia, using his skills as an emergency obstetric and newborn care (EmONC) provider and trainer to administer anesthesia and intubate babies who are unable to breathe on their own, as well as to train colleagues in EmONC. Despite his extensive training and skills, Mr. Musonda has found it quite challenging to perform his role as an

EmONC provider optimally. Ndola Central Hospital is considered a tertiary health facility, meaning that it receives referrals for patients, including pregnant and delivering women, who require intensive medical care. Yet essential equipment, such as tracheal tubes and ventilators, is often lacking at the hospital, severely hindering health care workers' ability to provide much-needed interventions. It is not unusual for providers to ventilate babies manually for several hours at a time; however, if staffing is short and client loads high, newborns may be left to die. Mr. Musonda is determined not to let this practice continue.

In February 2012, Mr. Musonda was one of 16 participants invited to attend a *Helping Babies Breathe* (HBB) Training of Trainers—a three-day workshop conducted by the USAID-funded Maternal and Child Health Integrated Program (MCHIP), in collaboration with the Zambia Ministry of Health (MOH) under the U.S. Government-sponsored *Saving Mothers, Giving Life* (SMGL) endeavor. The workshop participants were EmONC providers and trainers from the four SMGL target districts—Kalomo, Lundazi, Mansa, and Nyimba. Through this training, they were equipped with the knowledge and skills to train and mentor their colleagues in neonatal resuscitation, using the HBB curriculum. Although neonatal resuscitation has long been a component of EmONC training in Zambia, HBB utilizes an innovative, simplified approach specifically designed for low-resource settings, such as those in which Mr. Musonda and his colleagues work.

“This is for the mothers, providing life which may otherwise be lost. Sharing the occasion of new life with a mother is very joyful. You can’t equate that feeling to anything.”

Jonathan Musonda, Pediatric Anesthesiologist and new HBB trainer

under their belts, the newly trained trainers develop district action plans, in preparation for training their colleagues in rural hospitals and health centers in these lifesaving techniques.

Participants, such as Mr. Musonda, foresee the impact of this training. Remarking on the way it effectively addressed the challenges that he has observed in his hospital, Mr. Musonda stated, “This program will change the way we resuscitate newborns...perhaps we can see a positive shift if we are able to pass on this information. If so, then there will be glorious outcomes with this new method.”



MCHIP Technical Advisor, Martha Ndhlovu and the newly trained Mr. Jonathan Musonda with the HBB action plan

Annex 3: List of Presentations at International Conferences

Improving the Quality of EmONC Services through Intensive Mentorship: The MCHIP Approach. Oral presentation. Presented by Martha Ndhlovu, MCHIP MNH Technical Advisor. Maternal and Newborn Health Conference for Zambia's Mothers and Babies. Lusaka, Zambia. November 2012.

The Role of Intensive Mentorship in EmONC-improved Quality of Care: The MCHIP Approach in Mansa, Zambia (SMGL). Oral presentation. Presented by Martha Ndhlovu, MCHIP MNH Technical Advisor. Global Maternal Health Conference (GMHC). Arusha, Tanzania. January 2013.

Intensive Mentorship: An Innovation in Improving Clinical Practice and Patient Outcome in the Mansa District of Zambia. Poster presentation. Presented by Martha Ndhlovu, MCHIP MNH Technical Advisor. International Congress of Nurses (ICN). Melbourne, Australia. May 2013.

Implementing Helping Mothers Survive, Bleeding After Birth (HMS BAB)—The Mansa Experience. Oral (plenary) presentation. Presented by Martha Ndhlovu, MCHIP MNH Technical Advisor. Regional Maternal Newborn Care Forum (ECSA-HC). Arusha, Tanzania. August 2013.

Basic Emergency Obstetric and Newborn Care (BEmONC) Training Improves Skills for Nurses and Midwives Resulting in Reduced Referrals to Higher Levels of Care in Mansa District, Zambia. Oral presentation. Presented by Martha Ndhlovu, MCHIP MNH Technical Advisor. International Congress of Midwives (ICM). Prague, Czech Republic. June 2014.

Annex 4: List of Materials and Tools Developed or Adapted by the Program

Zambia National EmONC In-Service Training Package (June 2014)

- Integrated *Helping Babies Breathe* into Facilitator's Guide and Participant's Guide

Zambia Ministry of Community Development, Mother and Child Health Postpartum Hemorrhage Prevention In-Service Training Package for Health Care Providers (*Draft*) (June 2014)

Zambia Ministry of Community Development, Mother and Child Health Postpartum Hemorrhage Prevention/Misoprostol Supplement to Maternal and Newborn Health Community Discussion Guide (*Draft*) (March 2013)