Malawi Newborn Health Program
First Year Annual Report

National Level

(with learning activities in the districts of
Chitipa, Mzimba, Mchinji, Dowa, and Thyolo)

Cooperative Agreement No.: GHS-A-00-06-00016
30 September 2006 – 30 September 2011

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ACRONYMS AND TERMS

ACCESS	(USAID Global Health project implemented by JHPIEGO in partnership with Save the Children, Futures Group, the Academy for Educational Development, the American College of Nurse-Midwives and Interchurch Medical Assistance)
ACSD	Accelerated Child Survival and Development (UNICEF)
Agogo	Grandparent
ANC	Antenatal Care
BEmOC	Basic Emergency Obstetrical Care
BEmONC	Basic Emergency Obstetrical and Neonatal Care
BCC	Behavior Change Communication
CBMNC	Community-based Maternal and Newborn Care
CHAM	Christian Health Association of Malawi
COP	Chief of Party
CS	Child Survival
CSHGP	Child Survival and Health Grants Program
CT	Connecticut
DC	District of Columbia
DHO	District Health Office/District Health Officer
DHS	Demographic and Health Survey
DIP	Detailed Implementation Plan
DSMB	Data Safety Monitoring Board
EHP	Essential Health Package
Ekwendeni	Ekwendeni Mission Hospital, Synod of Livingstonia (Save the Children partner)
ENC	Essential Newborn Care
FANC	Focused Antenatal Care
FY	Fiscal Year
GOM	Government of Malawi
HFA	Health Facility Assessment
HMIS	Health Management Information System
HSA	Health Surveillance Assistant
ICH	Institute for Child Health
IMCI	Integrated Management of Childhood Illness
JHPIEGO	Reproductive Health Program affiliated with Johns Hopkins University
KMC	Kangaroo Mother Care

KPC	Knowledge, Practice and Coverage
MDG	Millennium Development Goal(s)
MICS	Multiple Indicator Cluster Survey
MDHS	Malawi Demographic and Health Survey
M&E	Monitoring and Evaluation
MNC	Maternal and Newborn Care
MOH	Ministry of Health
MOH/RHU	Ministry of Health/Reproductive Health Unit
MOU	Memorandum of Understanding
NBHP	Newborn Health Program
NGO	Non-Governmental Organization
NHSREC	National Health Sciences Research and Ethics Committee
NSRHP	National Sexual Reproductive Health Program
PHC	Primary Health Care
PLG	Program Learning Group
PMNCH	Partnership for Maternal, Newborn & Child Health
PMTCT	Prevention of Mother-to-Child Transmission
POW	Program of Work
PVO	Private Voluntary Organization
RCT	Randomized Control Trial
Road Map	Road Map for Accelerating Reduction of Maternal and Newborn Mortality and Morbidity in Malawi
SC	Save the Children Federation, Inc.
SC/Mw	Save the Children Malawi
SC/SNL	Save the Children's Saving Newborn Lives
SNL	Saving Newborn Lives (Save the Children global initiative funded by the Bill & Melinda Gates Foundation)
SWAp	Sector-wide Approach
TA	Technical Assistance
TOR	Terms of Reference
TOT	Training of Trainers
UK	United Kingdom of Great Britain and Northern Ireland
UN	United Nations
UNFPA	United Nations Fund for Population Activities

UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WHO	World Health Organization
WRASM	White Ribbon Alliance for Safe Motherhood

CSHGP Data Form (Updated)

Child Survival and Health Grants Program Project Summary
Oct-23-2007
Save the Children (Malawi)

General Project Information:
Cooperative Agreement Number: GHS-A-00-06-00016
Project Grant Cycle: 22
Project Dates: (10/1/2006 - 9/30/2011)
Project Type: Expanded Impact

SC Headquarters Technical Backstop: Eric Starbuck
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Midterm Evaluator:
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Funding Information:
USAID Funding: (US $): $2,500,000 **PVO Match: (US $)** $833,334
Project Information:

Description:
Malawi Newborn Health Program
Many factors contribute to Malawi's high maternal mortality ratio (984/100,000 live births, 2004 DHS), under-five mortality rate (133/1,000, 2006 MICS), and neonatal mortality rate (31/1,000, 2006 MICS), including: 1) low access and availability of quality health care for mothers and newborns, 2) poor recognition of danger signs and 3) inappropriate household practices and care-seeking behaviors; 4) weak social and policy enabling environment; and 5) livelihood challenges. Save the Children's Newborn Health Program – funded by USAID/CSHGP with match from Saving Newborn Lives - focuses on the main causes of neonatal mortality: infection, birth asphyxia, consequences of prematurity and low birth weight, and related maternal factors. Together, these account for 89% of all newborn deaths in Malawi.

The national-level Malawi Newborn Health Program supports the government's Essential Health Package (EHP) and Accelerated Child Survival and Development (ACSD) Strategy for Integrated Management of Childhood Illness (IMCI), including community IMCI (c-IMCI); and is integrated into a multi-year (2005-15) national initiative led by the Ministry of Health (MOH) and guided by The Road Map for Accelerating Reduction of Maternal and Newborn Mortality and Morbidity in Malawi (Road Map), the national framework adopted by the Government of Malawi (GOM) in 2005 and officially launched during this fiscal year (30 March 2007). The Malawi Newborn Health Program overlaps in time with the Road Map's first two phases (2005-08 and 2009-11) and contributes to achieving Road Map goals, objectives, and targets. As a Road Map partner at the national level, Save the Children cooperates closely with MOH Reproductive Health Unit (MOH/RHU) and other international organizations and key stakeholders (including PMNCH, the Partnership for Maternal, Newborn, and Child Health) to expand and mainstream quality neonatal care at all levels of health service delivery. In FY08, these partners will be joined and strengthened by ACCESS, a global project of USAID in which Save the Children is a partner and will play a role in Malawi.

The Malawi Newborn Health Program is funded from two complementary sources – the United States Agency for International Development/Child Survival and Health Grant Program (USAID/GH/HIDN/NUT/CSHGP) and Save the Children Saving Newborn Lives (SNL) as match - and integrated as a single program through a merged work plan and unified team functioning. Broadly speaking, SNL match funds are focused on design, development, and evaluation of a community-based maternal and newborn package and operations research/ evaluation to generate feasibility evidence for delivery of the package in three learning districts; while USAID/CSHGP funds drive technical leadership at the national level and scale-up activities; including partner coordination, advocacy for policy change and application, and support to the national health management information system (HMIS) to integrate newborn health into existing packages. In addition, SNL funds Mai Mwana, a randomized control trial (RCT) of community-based interventions for newborn care, being carried out in Mchinji District by the Institute for Child Health, University of London.

The Malawi Newborn Health Program - carried out in partnership with MOH, UNICEF, and other key stakeholders - reaches approximately 500,000 neonates (0-28 days) born in Malawi every year and their mothers with:

* Increased availability of and access to key maternal and newborn care services (increased numbers of Health Surveillance Assistants (HSAs); increased capacity of HSAs and health workers; increased number of facilities better supplied; service delivery better coordinated along continuum of care; stronger and more effective linkages between health facilities and community care providers);
* Improved quality of key maternal and newborn care services (improved health worker performance and supervision; more culturally acceptable service delivery)
* Improved household-level attitudes and knowledge of key essential newborn care and related maternal care behaviors (improved communication through multiple channels of key antenatal, delivery, ENC, PNC messages and service information);
* Improved policy and enabling social environment for maternal and newborn health (changed policies; improved standards; re-energized advocacy, networks, community mobilization; increased capacity and engagement of civil society organizations).

To address the many challenges to achieve impact at scale for maternal and newborn health, Save the Children works at the national level and:

* Supports Government of Malawi strategies and integration of maternal and newborn care into existing strategies, programs, and packages, including: (1) Sector Wide Approach (SWAp), (2) Essential Health Program (EHP), (3) Road Map for Accelerated Reduction of Maternal and Newborn Mortality and Morbidity, (4) Accelerated Child Survival and Development (ACSD) Strategy for Integrated Management of Childhood Illness (IMCI).
* Generates evidence through implementation research and evaluation on design and delivery of a community-based maternal and newborn care package integrated with the SWAp, EHP, Road Map, and ACSD/IMCI to be taken to scale in all 28 districts of Malawi;
* Partners with the Ministry of Health (MOH), UNICEF, WHO, UNFPA, and other national and international stakeholders in supporting joint planning, review, implementation, and evaluation to reach common goals and objectives;
* Plays a technical leadership role on national-level task forces and working groups in order to ensure quality newborn care all along the household-to-facility continuum of care; order to ensure quality newborn care all along the household-to-facility continuum of care;
* Engages strategic partnerships at the national level, including: (1) Partnership for Maternal, Newborn, and Child Health, (2) White Ribbon Alliance for Safe Motherhood in Malawi (WRASM);
* Cooperates with the USAID Mission in implementation of ACCESS (Access to Clinical and Community Maternal, Neonatal and Women's Health Services), the USAID global project, as well as with BASICS III (Basic Support for Child Survival), USAID's global flagship project for reduction of under-five mortality;
* Influences national policy through strengthening the enabling environment, including local advocacy capacity (WRASM), and ensuring incorporation of evidence-based best practices into Malawi's policy, norms, and protocols.

The Malawi Newborn Health Program is also partners with Ekwendeni Mission Hospital, a Christian Health Association of Malawi (CHAM) member facility in Mzimba District, to refine, document, and package its innovative agogo (grandparent) approach for community mobilization and behavior change for dissemination to NGOs, faith-based institutions, and community-based organizations.

Goals, Objectives, Results: Road Map Goal: reduced neonatal mortality and morbidity at scale to meet Malawi's Millennium Development Goals (MDGs) by 2015. Strategic Objective: Increased sustainable use of key maternal and neonatal heath services and practices; IR-1: Increased availability of and access to key maternal and newborn care services; IR-2: Improved quality of key maternal and newborn care services; IR-3: Improved household-level knowledge and attitudes related to key essential newborn care and related maternal care behaviors; IR-4: Improved policy and enabling social environment for maternal and newborn health.

Location:
Malawi (national level)

Project Partners	Partner Type	Subgrant Amount
Ministry of Health (Reproductive Health Unit)	Collaborating Partner	
Ekwendeni Mission Hospital (Synod of Livingstonia)	Subgrantee	$129,972.00
UNICEF	Collaborating Partner	
WHO	Collaborating Partner	
UNFPA	Collaborating Partner	
Christian Health Association of Malawi	Collaborating Partner	
White Ribbon Alliance for Safe Motherhood-Malawi	Collaborating Partner	
ACCESS	Collaborating Partner	
Subgrant Total		**$129,972.00**

General Strategies Planned:
Advocacy on Health Policy

M&E Assessment Strategies:
KPC Survey
Health Facility Assessment
Lot Quality Assurance Sampling
Participatory Evaluation Techniques (for mid-term or final evaluation)

Behavior Change & Communication (BCC) Strategies:
(None Selected)

Groups Targeted for Capacity Building:

PVO	Non-Govt Partners	Other Private Sector	Govt	Community
(None Selected)	(None Selected)	(None Selected)	(None Selected)	(None Selected)

Interventions/Program Components:
Maternal & Newborn Care (100 %)
(IMCI Integration)
(CHW Training)
(HF Training)
- Recog. of Danger signs
- Newborn Care
- Post partum Care

Target Beneficiaries:

Infants < 12 months:	500,000
Children 0-59 Months:	500,000

Rapid Catch Indicators:

	Numerator	Denominator	Percentage	Confidence Interval
Percentage of children age 0-23 months who were born at least 24 months after the previous surviving child.	**148**	**163**	**90.0%**	**15.0**
Percentage of mothers with children age 0-23 months who received at least two Tetanus toxoid vaccinations before the birth of their youngest child.	**260**	**300**	**86.0%**	**11.0**
Percentage of children age 0-23 months whose births were attended by skilled personnel.	**238**	**300**	**79.0%**	**11.0**
Percentage of children age 0-23 months who received a post-natal visit from an appropriately trained health worker within 3 days after the birth of the youngest child.	**131**	**300**	**43.0%**	**9.0**
Percentage of children age 0-5 months who were exclusively breastfed during the last 24 hours.	**41**	**112**	**36.0%**	**14.0**
Percentage of children age 6-23 months who received a dose of Vitamin A in the last 6 months (Mother's recall).	**143**	**188**	**76.0%**	**13.0**
Percentage of children age 12-23 months who received a measles vaccination.	**95**	**112**	**84.0%**	**18.0**
Percentage of children age 12-23 months who received a DPT1 vaccination before they reached 12 months.	**92**	**112**	**82.0%**	**18.0**
Percentage of children age12-23 months who received a DPT3 vaccination before they reached 12 months.	**83**	**112**	**74.0%**	**17.0**
Percentage of children age 0-23 months with a febrile episode during the last two weeks who were treated with an effective anti-malarial drug within 24 hours after the fever began.	**7**	**300**	**2.0%**	**2.0**
Percentage of children age 0-23 months with diarrhea in the last two weeks who received oral rehydration solution (ORS) and/or recommended home fluids.	**13**	**110**	**11.0%**	**8.0**
Percentage of children age 0-23 months with chest-related cough and fast and/or difficult breathing in the last two weeks who were taken to an appropriate health provider.	**42**	**81**	**51.0%**	**19.0**
Percentage of households of children age 0-23 months that treat water effectively.	**7**	**33**	**21.0%**	**21.0**

	Numerator	Denominator	Percentage	Confidence Interval
Percentage of mothers of children 0-23 months who live in a household with soap or a locally appropriate cleanser at the place for hand washing and who washed their hands with soap at least 2 of the appropriate times during the day or night before the interview.	**5**	**300**	**1.0%**	**2.0**
Percentage of children age 0-23 months who slept under an insecticide-treated bed net (in malaria risk areas, where bed net use is effective) the previous night. This indicator should be used for programs in Africa. In Asia, this indicator should be used in specific geographic areas where bed net use is recommended.	**184**	**300**	**61.0%**	**10.0**
Percentage of children 0-23 months who are underweight (-2 SD for the median weight for age, according to WHO/NCHS reference population)	**72**	**262**	**27.0%**	**8.0**
Percent of infants and young children age 6-23 months fed according to a minimum of appropriate feeding practices.	**0**	**0**	**0.0%**	**0.0**

Comments for Rapid Catch Indicators

IYCF not collected.
The on-line form doesn't seem to have been updated for the Revised Rapid CATCH, e.g., no AMTSL indicators, etc.
The KPC Survey was conducted in one district, Mzimba, in order to collect Rapid CATCH Indicators.

Introduction

Save the Children's national-level **Malawi Newborn Health Program** is funded from two complementary sources: the United States Agency for International Development/Child Survival and Health Grant Program (USAID/GH/HIDN/NUT/CSHGP) and Save the Children Saving Newborn Lives (SNL) as match. The Malawi Newborn Health Program is integrated as a single program through a merged work plan and unified team functioning. Certain positions are cost-shared (Table 1); and aspects of certain activities (e.g., KMC scale-up) may be co-funded.

Broadly speaking, SNL match funds are focused on design, development, and evaluation of a community-based maternal and newborn package and operations research/evaluation to generate feasibility evidence for delivery of the package in three learning districts; while USAID/CSHGP funds drive technical leadership at the national level and scale-up activities; including partner coordination, advocacy for policy change and application, and support to the national health management information system (HMIS) to integrate newborn health into existing packages. In addition, SNL funds Mai Mwana, a randomized control trial (RCT) of community-based interventions for newborn care, being carried out in Mchinji District by the Institute for Child Health, University of London.

Table 1: Selected Newborn Health Program positions, incumbents, and FY07 funding sources

Position	Incumbent	SNL	USAID/CSHGP
NBH Program Manager	Evelyn Zimba	25%	75%
NBHP Research and Evaluation Officer	Edward Chigwedere	100%	0%
NBHP M&E Officer	George Chiundu	50%	50%
NBH Program Officer (1)	Reuben Ligowe	0%	100%
NBH Program Officer (2)	Maggie Kambalame	0%	100%
SC/Malawi Deputy Director-Programs	Jeanne Russell	21%	20%
NBH Program Assistant	Temwachi Nkhono	50%	50%
Africa Regional Health Advisor	Karen Z. Waltensperger	~10%	20% (15% FY08)
Grants Manager	Grandy Chikweza	50%	50%

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The Newborn Health Program - carried out in partnership with MOH, UNICEF, and other key stakeholders - reaches approximately 500,000 neonates (0-28 days) born in Malawi every year and their mothers with:

- Increased **availability of and access** to key maternal and newborn care services (increased numbers of Health Surveillance Assistants (HSAs); increased capacity of HSAs and health workers; increased number of facilities better supplied; service delivery better coordinated along continuum of care; stronger and more effective linkages between health facilities and community care providers);
- Improved **quality** of key maternal and newborn care services (improved health worker performance and supervision; more culturally acceptable service delivery)
- Improved household-level **attitudes and knowledge** of key essential newborn care and related maternal care behaviors (improved communication through multiple channels of key antenatal, delivery, ENC, PNC messages and service information)
- Improved **policy and enabling social environment** for maternal and newborn health (changed policies; improved standards; re-energized advocacy, networks, community mobilization; increased capacity and engagement of civil society organizations).

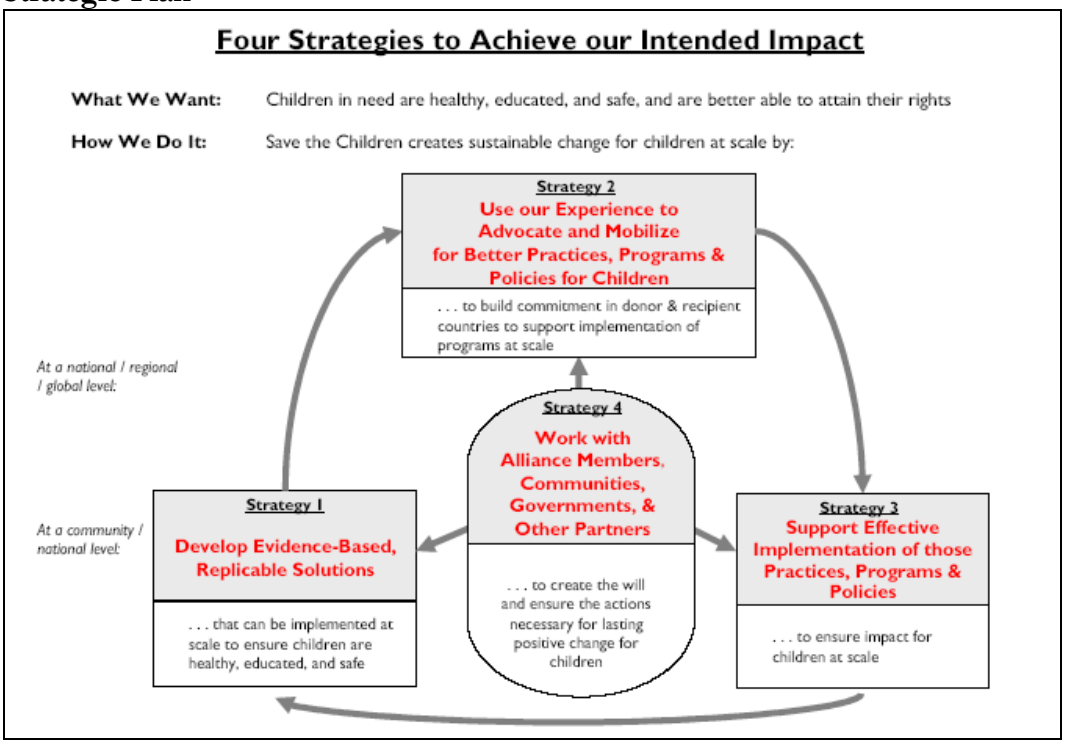
A. First year accomplishments

Please see Annex 1 for a matrix of key first year activities.

A.1. Review of Save the Children's strategy for achieving impact at scale

To re-state our strategy for achieving impact at scale as elaborated in the DIP, Save the Children employs four strategies (sometimes referred to as our "theory of change"):

Figure 1: "Getting to Great for Children; Strategic Direction 2008-2012" Save the Children's Strategic Plan



A.1.1. Strategy 1 – Develop evidence-based replicable solutions for maternal and newborn care

Through match-funded support for Mai Mwana, an SNL-funded RCT in Mchinji District, and evaluation and implementation research to test the feasibility of delivering a community-based maternal and newborn care package using Health Surveillance Assistants (HSA), Save the Children is generating evidence and developing, documenting, and disseminating evidence-based approaches that can be applied elsewhere or taken to greater scale in Malawi. In our work to develop the evidence base for newborn health, both in Malawi and globally; we innovate, ask, and seek answers to important questions about how to meet needs around priority results for maternal and newborn care. Evidence generated from the global and Malawi-specific research is shared through peer reviewed publications, technical updates for MOH and partners, policy briefs, and communications materials, as well as in the Save the Children Office of Health Program Learning Group (PLG) and Africa Newborn Health Research Workshops held annually for our research partners and other key country stakeholders.

A.1.2. Strategy 2 – Use our experience to advocate and mobilize for better practices, programs, and policies for newborns and their mothers

Save the Children uses the global and Malawi-specific evidence base, as well as its experience and expertise in maternal and newborn health, to advocate and mobilize effectively for better practices, policies, and programs. Through our SC/Mw country office and 20+ years of experience in-country, Save the Children has a long-term commitment to Malawi and its people. As a Road Map partner at the national level and active participant on the RHU Safe Motherhood Sub-committee of the MOH Sexual and Reproductive Health Task Force, we collaborate with the GOM, MOH/RHU, White

Ribbon Alliance for Safe Motherhood in Malawi (WRASM), the Partnership for Maternal, Newborn, and Child Health (PNMCH), and other key stakeholders in leveraging resources to support implementation at scale. Over the coming year, we will participate pro-actively and make key inputs into the design, implementation, and evaluation of the national Road Map advocacy plan and package.

A.1.3. Strategy 3 – Support effective implementation of practices, programs and policies for maternal and newborn health

Through offering technical leadership in newborn health, capacity-building, and joint planning and evaluation, Save the Children catalyzes and supports MOH/RHU and other implementing partners in adopting and operationalizing policies, evidence-based best practices, and state-of-the-art programs at all levels (i.e., household, community, facility, health system). This includes evaluating and taking to scale the community-based maternal and newborn health package to be piloted in three districts; identification and integration of lessons being learned from the Mai Mwana RCT trial now funded for completion in Mchinji District; and scale up facility- and community-KMC in cooperation with SC/SNL and ACCESS. At a district-level, we are selectively assisting Mzimba District with implementation of KMC; and Ekwendeni Mission Hospital through a sub-grant to package its *agogo* approach for community mobilization and behavior change.

A.1.4. Strategy 4 – Work with communities, government, and other partners and stakeholders for the benefit of mothers and newborns

MOH leads the Road Map process and is at the forefront of all policies, programs, and activities. Save the Children works in partnership – and seeks to strengthen partner coordination - with the GOM, MOH/RHU, international organizations, donors (including the USAID Mission), and a wide range of Road Map partners to implement the first three strategies and create the will and ensure the actions to address maternal and newborn health needs in a sustainable way. Using all four strategies together leverages the impact of each and creates a strong enabling environment.

A.2. Malawi Newborn Health Program - Major FY 07 accomplishments/activities

As FY07 comes to an end, the Malawi Newborn Health Program is well on track and able to report a number of accomplishments and positive progress related to scale. **This section on accomplishments also serves to begin to document the partnership process in Malawi, as encouraged at the DIP consultation at the Mini-University in June 2007.** Descriptions of these major accomplishments and their links to achieving impact at scale are described below:

- Design of the community-based MNC package (3-district pilot), including description of task force, report of formative research, and detailed program description
- Adoption of clean delivery kit and integration into existing package
- Production of training manual for community-based newborn care and planning for TOT for Health Surveillance Assistants (HSAs)
- Progress toward KMC at scale
- Integrated Obstetrics and Newborn Care Training Manual
- Strengthening local capacity for advocacy

- Mai Mwana DSMB (Data Safety Monitoring Board)

A.2.1. Design of the community-based maternal and newborn care package (3-district pilot)

In close collaboration with MOH/RHU, UNICEF, WHO, and UNFPA, Save the Children is playing a leadership role in design and development of a community-based maternal and newborn care package to be delivered by Health Surveillance Assistants (HSA) and taken to scale in all 28 districts of Malawi. With UNICEF, Save the Children facilitated both the design workshop for the package and the task force charged with developing the program plan for the pilot in the districts of Chitipa, Dowa, and Thyolo. This same package will be implemented by ACCESS in two or three other districts; and scale up of the package to all 28 districts of Malawi is already being planned by MOH.

A.2.1.1. Task force for the 3-district pilot of the community package

A multi-partner task force for development of the 3-district pilot for the community-based maternal and newborn care package was established following a design workshop held 15-16 February 2007 at the Capital Hotel, Malawi and hosted by the MOH/RHU in partnership with Save the Children and UNICEF. The purpose of the workshop was to design and develop a community-based newborn care package for Malawi that is scaleable, affordable and evidence-based, with the overall aim of improving newborn health and survival by increasing access, availability, and quality of life-saving interventions. The design workshop was officially opened by the Principal Secretary of the Ministry of Health, Mr. Chris Kang'ombe and attended by about 40 individuals, representing a broad range of stakeholders, including MOH, UNICEF, WHO, UNFPA, USAID, visiting delegates of UN agencies funded through PMNCH, Save the Children, as well as other PVOs and NGOs and professional organizations.

At the design workshop, participants agreed to adapt the SEARCH (India) model to Malawi and pilot it in three learning districts before rolling it out in all 28 districts countrywide. MOH selected the districts of Chitipa (in the far North), Dowa (in the Central Region), and Thyolo (in the South) as pilot districts to inform the scale-up process countrywide. In order to operationalize the 3-district pilot, a task force was established that includes representatives from MOH/RHU, the three districts, PHC/HSA and IMCI at the MOH, Save the Children, and UN agencies including UNICEF, UNFPA and WHO.

Since May, 2007 the task force has met monthly - facilitated by RHU and funded by Save the Children and UNICEF- to work through the design-to-implementation process for the 3-district learning program. Activities undertaken and completed by the task force during FY07 included:

- development of TOR for the task force itself
- agreement on a community package for maternal and newborn health interventions to be delivered by HSAs
- finalization of tools and TOR for formative research
- finalization of tools and TOR for a health facility assessment (HFA)
- finalization of survey instruments for population-based baseline survey (to be conducted in November 2007)
- recruitment of consultants for baseline assessments

- collaboration with UNICEF on adaptation of a training manual for HSAs
- planning a TOT for HSA training
- development of protocols and specific matrices

Once implementation begins in the three learning districts in the second quarter of FY08, task force meetings will be held quarterly.

A.2.1.2. Program plan and budget for community-based maternal and newborn care package 3-district pilot

Finalizing the program plan and budget for the 3-district pilot of the community-based maternal and newborn care package has been a two stage process. During this process, Save the Children worked with MOH/RHU, UNICEF, and the District Health Officers (DHOs) of Chitipa, Dowa, and Thyolo. MOH/RHU submitted a letter outlining the community-based maternal and newborn care program to the National Health Sciences Research and Ethics Committee (NHSREC) of Malawi on 25 July 2007, along with the proposal for the formative research prepared by MOH/RHU, UNICEF and Save the Children. Authorization to carry out the 3-district pilot was granted to MOH/RHU by the NHSREC on 30 August 2007; and a copy of the authorization letter is attached (see Annex 2).

A full program plan for the 3-district pilot was finalized by Save the Children in collaboration with MOH/RHU and UNICEF and submitted to the NHSREC on 21 September 2007. (A copy of the program plan is attached. Please see Annex 3.) An estimated budget for the 3-district pilot has been drafted; and a final budget is to be developed following completion Health Facility Assessments in the three districts. Implementation of the 3-district pilot will be funded through the SWAp. Save the Children's role in implementation of the pilot is in measurement and evaluation, funded with match from SNL. With match funds, an Evaluation and Research Manager (Edward Chigwedere) has joined the Newborn Health team to provide TA and oversight to evaluation of the pilot.

A.2.1.3 Formative research in three learning districts

Save the Children led formative research in the three learning districts in order to: (1) assess gaps in knowledge and practice of essential maternal and neonatal care and how best to fill these gaps (by informing a behavior change strategy); (3) establish a qualitative baseline for behaviors related to maternal and newborn health care at the household and community levels; (4) obtain information about HSA workloads and community perceptions of having HSAs – especially male HSAs - involved in maternal and newborn health care; (4) obtain information about health center access by populations and distribution of HSAs in relation to population and catchment areas.

Instruments and consent forms for the formative research were developed and translated into Chewa and Tumbuka. TOR were developed, and a consultant selected to conduct the formative research. The consultant and research team were oriented to the community-based maternal and newborn care package and the formative research instruments by Save the Children and MOH/RHU on 6-7 September 2007.

Fieldwork for the formative research commenced on 9 September 2007 in Thyolo and was completed in all three districts by early October. Results from the formative research will be used to inform the pilot's behavior change strategy and messages. Save the Children has proposed a process

utilizing the BEHAVE Framework for message construction, but the final decision will be taken by MOH/RHU. (A copy of the report of the formative research is attached. Please see Annex 4.)

A.2.1.4. Health facility assessment (HFA)

An HFA is scheduled in the three learning districts to: (1) assess availability of maternal and newborn health services in health facilities; (2) assess quality of maternal and newborn health services in health facilities; (3) assess availability of supplies and equipment in health facilities for the provision of maternal and newborn health services; (4) assess infrastructure for maternal and newborn health services in health facilities in the three districts

Tools for the HFA have been developed by MOH/RHU, UNICEF, and Save the Children. Conduct of the HFA itself will be sub-contracted to a consultant; and the TOR have already been developed. It is expected the HFA will begin early in the first quarter of FY08, with the final report expected before the end of the first quarter. MOH/RHU and Save the Children will monitor conduct of the HFA. This is also a match-funded activity.

A.2.1.5. Population-based survey in three learning districts

In order to collect baseline values for indicators for the pilot of the community-based maternal and newborn care program in the three districts, a population-based baseline survey (Knowledge, Practice, and Coverage or KPC) is planned. It is expected that the survey will be carried out in mid-November 2007; and the final report is due by the end of the calendar year. Conduct of the survey itself will be sub-contracted to a consultant. Tools have already been developed and translated in collaboration with MOH/RHU and UNICEF.

A.2.1.6. Resources for pilot and scale up of community-based package

Resources to implement the 3-district pilot and scale up to all 28 districts in Malawi are coming from the SWAp. Within this framework MOH/RHU and District Health Management teams in the three learning districts will coordinate implementation and ensure active participation of HSAs. UNICEF will provide supplies for the health facilities in the three districts and coordinate community-level training linked to c-IMCI. HSAs will assist in development of BCC messages and community mobilization approaches. Save the Children will assist in program design and documentation, as well as in the developments of M&E approaches and tools required for implementation. Dissemination of lessons learned by Save the Children and partners at key national fora will influence national policy and use of evidence-based best practices for maternal and newborn health care.

A.2.2. Adoption of clean delivery kit

Save the Children co-facilitated a workshop organized by MOH/RHU, in collaboration with UNICEF, held 21-22 August 2007 at the Capital Hotel Lilongwe. Objectives of the workshop were to (1) discuss introduction of individually packaged clean delivery kits through the Malawi health service delivery system; and (2) issues of production and cost of the clean delivery kit; and (3) plan for sustainability of the initiative. A decision was taken to produce the kits locally – with initial support from UNICEF - and implement initially in the three pilot districts for the community-based

maternal and newborn care package. Kits will be distributed free-of-charge to pregnant women in their third trimesters.

A.2.3 Production of training manual for community-based newborn care and planning TOT for HSA training

Under a global Memorandum of Understanding and with SC/SNL support, UNICEF in FY07 completed a final draft of a global manual for training community-based health workers in delivery of a basic maternal and newborn care package, including post-natal care, and with optional modules for Prevention of Mother-to-Child Transmission (PMTCT) and treatment of neonatal sepsis with antibiotics. This manual is based on the SEARCH model from India and will need to be adapted on a country-by-country basis. Plans are underway now in Malawi to adapt the manual for integration into the national ACSD training package for HSAs; to be followed by a TOT for approximately 30 Malawian trainers from MOH and DHOs from the three districts, along with other representative stakeholders. Adaptation is now scheduled to take place immediately following the SC/SNL-sponsored Africa Newborn Health Research Meeting to be held the week of 12-16 November in Blantyre.

A.2.4 Progress toward Kangaroo Mother Care (KMC) at scale

During the fourth quarter (late July/early August) of FY07, Save the Children conducted a KMC retrospective study on behalf of MOH/RHU for the purpose of learning from KMC experience in the country, much of it initiated under the first phase of SNL. The retrospective study aimed to come up with recommendations for a cost-effective KMC implementation and scale-up process at the district level, with attention to physical infrastructure and supply requirements, as well as a training package for health workers in facilities. This was a key activity in the KMC scale-up process - now being strengthened with the entry of ACCESS. Recommendations from the retrospective study will provide programmatic guidance to optimize scale up of KMC across all districts in Malawi.

The study was carried out by two expert consultants from the Republic of South Africa, Dr. Anne-Marie Bergh, an educational and training expert from University of Pretoria, and Dr. Elise van Rooyen, a neonatologist from Kalafong Academic Hospital in Pretoria, with participation and support from Dr. Joy Lawn, SC/SNL Senior Research and Policy Advisor based in Cape Town. To provide the consultants an opportunity for first hand information and observation, field visits to 10 health facilities providing KMC services were organized by Save the Children and accompanied by members of the Newborn Health Program team. Facilities visited included Queen Elizabeth Central Hospital in Blantyre. Lilongwe Health Center, Mulanje Mission Hospital, Zomba Central Hospital, St. Lukes Hospital, Mangochi District Hospital, Nkhoma Mission Hospital, Mitundu Community Hospital, Bwaila Central Hospital. The team at Ekwendeni Mission Hospital was interviewed through a phone call.

A draft report of the KMC retrospective study was circulated to reviewers - including Save the Children Office of Health and SNL, Save the Children regional technical advisors, the SC/Malawi country office, MOH/RHU, USAID, UNICEF, WHO, UNFPA, and KMC facilities involved in the study for review and comment.

The report makes encouraging recommendations that include opportunities for immediate action, feasibility of achieving impact at scale, and guidance for KMC scale up within the context of the Malawi health system. Three missed opportunities were identified that could receive immediate attention without any additional costs to the health services apart from training and raising of awareness. These include: (1) Systematic introduction of intermittent KMC for stable babies who are still in a neonatal unit or in a heated "transit" nursery; (2) Strengthening of current feeding practices for preterm babies by using a standardized job aid for calculating volume of feeds, by introducing proper record keeping of volumes and numbers of feeds per day for each baby, and by providing better support and guidance to mothers regarding feeding times and the volume of feeds required; and (3) Transporting babies from home to facilities or between facilities in the skin-to-skin position, which could help prevent the potentially lethal condition of hypothermia.

Once the final report is produced, it will be disseminated to key stakeholders. It is expected that after dissemination of the KMC report - in collaboration with MOH/RHU and partners - a plan of action will be agreed upon for scaling up the KMC services throughout the country. ACCESS will also be actively involved in KMC scale up in Malawi. The report is also being used to guide the integration of KMC into the Integrated Essential Obstetric and Newborn Care Training Manual (described below). In addition, Save the Children is assisting the establishment of a KMC unit at Mzimba District Hospital and will pilot use of retrospective recommendations to guide that activity.

(A copy of the report of the KMC respective study with specific recommendations for taking KMC to scale in Malawi is attached. Please see Annex 5.)

A.2.5. Integrated Obstetrics and Newborn Care Training Manual

At request of MOH/RHU, ACCESS and Save the Children are sharing lead roles in the process of integrating Malawi's collection of existing training manuals - Basic Emergency Obstetric Care (BEmOC), Life Saving Skills, Essential Newborn Care, Kangaroo Mother Care - into one Integrated Essential Obstetric and Newborn Care Training Manual. Some of these manuals were developed by Save the Children in collaboration with MOH/RHU under the first phase of SNL in Malawi. UNICEF, UNFPA, and WHO are also involved in the process, being facilitated by MOH/RHU.

To initiate the process, MOH - in collaboration with Road Map partners - organized a workshop on Joint Planning for Integration of Basic Emergency Obstetric and Newborn Care into Pre-Service and In-Service Education for Health Care Providers in Malawi on 3-4 May 2007 at the Livingstonia Beach Hotel in Salima. Participants included representatives from MOH/RHU, ACCESS, Save the Children, UNICEF, WHO, UNIFPA and tutors from health training institutions. Follow-up meetings were conducted on 20 June 2007 and 4 September 2007 to assess the status of pre-service BEmOC and ENC/KMC trainings. The meetings were organized by MOH in collaboration with ACCESS and other Road Map partners. During the meeting on 20 June, Save the Children co-facilitated and presented on ENC/KMC. With regard to the status of pre-service ENC/KMC training, it was observed that the pre-service curriculum had adequate neonatal care content but no evidence of competency- based training. In terms of key newborn care equipment needed for ENC training, it was noted that some tutors had no knowledge of what equipment and models were available at their training institutions. Save the Children agreed to play a role in linking trainers with programs that could assist in acquiring the needed equipment.

The meeting held on 4 September 2007 was organized to strengthen the current midwifery curriculum in BEmOC and ENC and to strengthen and update midwifery tutor and preceptor clinical and teaching knowledge and skills. Among a number of issues, tutors noted a need to update their pre-service curriculum on BEmOC and required teaching resources, such as models and drugs to facilitate teaching. They also indicated a need to train preceptors and clinical instructors in all hospitals where students are sent for practical attachment, as well as to train tutors from other pre-service institutions. ACCESS plans to strengthen Bwaila Hospital in Lilongwe as a clinical training site for tutor and preceptor training.

Integration of the manuals into one unified manual is now in progress; and the first draft has been circulated to key stakeholders for review and comments. The final unified manual is expected to be ready for use early in FY08.

A.2.6. Strengthening local capacity for advocacy

To build local capacity for advocacy, Save the Children has been providing support to the White Ribbon Alliance for Safe Motherhood in Malawi (WRASM) for several years, including rent, telephone, and transport. Through USAID, Save the Children is now providing additional operational support to the civil-society organization in the modest amount of $500 per month. (This will be augmented considerably by ACCESS funds in FY08.) The WRASM coordinator joins the Newborn Health Program team for meetings and strategy sessions on a regular basis; covers for Newborn Health team members and communicates critical information when necessary; and will be planning jointly with Save the Children and other partners on major advocacy campaigns and events. For example, with funding from WHO, WRASM is gearing up to conduct an advocacy campaign targeting Parliamentarians (e.g., the Women's Caucus Committee and the Health and Population Committee). The purpose of the campaign is to engage Parliamentary participation and involvement in implementation of the Road Map at the constituency level. The Newborn Health Program team will participate in planning sessions for this advocacy initiative and take part in the sessions themselves.

With support from Save the Children and in collaboration with MOH/RHU, WRASM organized a meeting on 20 August 2007 at MOH/RHU to discuss plans to review and develop IEC materials for Focused Antenatal Care (FANC). Members were briefed on the objective of 4 structured FANC visits as a means of improving quality of antenatal care (ANC). Areas requiring advocacy themes were identified: (1) the meaning of FANC; (2) how FANC is expected to reduce maternal morbidity and mortality; (3) how it differs from traditional ANC; (4) what women might expect during a FANC visit; (5) roles and responsibilities of childbearing families, traditional leaders and community members.

A.2.7. Mai Mwana DSMB Report

Mai Mwana, with match funding from SC/SNL is carried out by ICH in Mchinji District and currently in its fourth year of operation. Mai Mwana seeks to demonstrate the impact on neonatal mortality of two community-based interventions: (1) community mobilization through women's groups using the community action cycle; and (2) community nutrition counselors through antenatal and post-natal household visits. Co-Director for Mai Mwana is Dr. Charles Mwansambo, Head of Pediatrics at Kamuzu Central Hospital/MOH. ICH held its Data Safety Monitoring Board (DSMB)

meeting for Mai Mwana on 7-8 June 2007. Representing Save the Children as observers at that meeting were George Chiundu, M&E Officer, and Jeanne Russell, Deputy Country Director,Programs. The report of the DSMB is attached. (See Annex 6.)

B. Challenges and factors that have impeded progress

Working toward impact at scale in the context of a large and diverse partnership has its many challenges. Some of these have been described above. Others include:

- Consultation and consensus building is a time consuming process for all partners and does not always take place at the level needed or with the full participation necessary. In an effort to meet individual or collective priorities, some activities taking place in the country are being planned and executed within a very short period of time and sometimes out of sequence, risking attention to details and quality.

- Since the integrated Essential Obstetric and Newborn Care training manual is still in the process of being developed, the support system was postponed to next quarter (first quarter in FY 08). This will involve developing training checklists, pre- and post-test tools, training evaluations and trainer's assessment.

- The work plan for the MOH National Sexual and Reproductive Health Program is meant to fit into the timing of the District Implementation Plans; but, this past year, timing of the meeting was not good because some districts had already developed their district plans. There is need in the coming year to assist MOH to organize the planning meeting earlier, before district planning begins. Although Save the Children was invited to the meeting, it was a last minute invitation with no time to prepare. Coordination with MOH during the coming planning cycle will ensure that Save the Children has time to consider the activities it will support with mainstreamed resources.

- Partnership consultations contributed greatly to delays in development of the Integrated Essential Obstetric and Neonatal Care training manual and implementation of the formative and baseline surveys for the community-based maternal and newborn care package to be piloted. Small task groups were formed to address the major bottle-necks and facilitate specific activities, and this strategy will be used should similar problems arise in the future.

- The Mzimba DHO was not able to conduct the planned HFA in FY 07, but it will be carried out in FY 08. Mzimba is now prepared for the undertaking, and the dates will be decided in the upcoming quarter.

- The many partnerships, plans, programs, and opportunities in Malawi make it difficult at times to respond to all invitations and be present at all meetings and planning sessions. For example, because of other commitments, no one from Save the Children was available to participate in the IMCI launch postmortem organized by the IMCI technical working group. Save the Children is honored and gratified to be one of the only PVOs asked to take part in these national-level events and makes every effort to be present and provide input.

C. Technical assistance required

There are no identified technical assistance needs that have not been met at this point in time. Technical assistance in maternal and newborn care is available and has been accessed, through Save the Children's Office of Health, Saving Newborn Lives, and ACCESS.

D. Substantial changes

There are no substantial changes from the program description in the Final Revised DIP submitted 15 August 2007.

E. Monitoring plan (how data is being used for monitoring)

E.1. National Health Management Information System (HMIS)

At the national level, Save the Children collaborates closely with MOH and other Road Map partners to ensure that existing information systems capture essential monitoring information.

Within the reporting period (FY07), many activities focused on providing assistance to partners for establishing M&E plans for the community-based maternal and newborn care package (3-district pilot), the Ekwendeni *agogo* approach, and aligning these with the government's information system (HMIS).

As part of start up, a formative research is in progress which will be followed by health facility assessment and baseline survey early next quarter. However, we have used secondary data especially from MDHS 2004 and MICS 2006 preliminary report in making program decisions and build our package for CBMNC. Through SNL, Save the Children provided UNICEF with additional funds for the 2006 Multiple Cluster Indicator Survey (MICS) to enable the collection of district-level data on neonatal mortality and postnatal care seeking. District HMIS and other service statistics have been used to shape our approach to the districts e.g. data on number of health workers at each health facility, health facilities offering BEmONC services and population of each health facility catchment area assisted in selecting the health facilities that would start up the CBMNC intervention. Our M&E Officer (George Chiundu) has also attended and participated in RHU/HMIS and M&E Technical Working Group meetings to advocate for and provide technical advisory assistance in monitoring key newborn health indicators in the country.

F. Sustainability

Save the Children is creating no parallel systems. The Malawi Newborn Health Program supports the Road Map and other government policies, norms, protocols, and practices within the context of the SWAp, the Essential Health Package, and the Accelerated Child Survival and Development (ACSD) Strategy for Integrated Management of Childhood Illness (IMCI). Save the Children works in partnership with the Ministry of Health and other key stakeholders, including: UNICEF, UNFPA, WHO, PNMCH, ACCESS, and the WRASM.

G. Specific information requested during DIP consultation

G.1. Documenting the partnership process

As agreed with CSHGP at the Mini-University DIP review in Baltimore, Save the Children is documenting the evolution of the partnership in Malawi with MOH and other stakeholders. We are starting with describing the partnership process during our first year in this annual report. During the first quarter of FY08, La Rue Seims, SNL Senior M&E Advisor, and Karen Z. Waltensperger, Africa Regional Health Advisor, will work with Evelyn Zimba and the Malawi Newborn Health Program team to develop tools (both qualitative and quantitative), benchmarks, and a standardized reporting format to enhance this process documentation and add an element of measurement.

G.2. Description of community-based maternal and newborn care package and 3-district pilot

A detailed description of the community-based maternal and newborn care package was provided in the Final Revised DIP submitted in August 2007 and summarized and updated in Section A.2.1. above.

G.3 Updates on agreements

For the last year, development of an MOU with the Ministry of Health was hindered by an MOU that was crafted on behalf of the MOH by the Ministry of Justice for all NGOs in Malawi. This MOU was punitive and legalistic, and contravened many existing agreements. The majority of NGOs declined to sign it, and a working group was formed to craft a new MOU with the MOH, but has since become inactive. Save the Children is currently consulting with peer organizations the best way forward in resolving this situation, particularly in light of recent duty and taxation issues that have risen at a country-wide level that are also inconsistent with existing country agreements with the Government of Malawi. A sub-grant agreement has been concluded and signed with Ekwendeni Mission Hospital, our CHAM partner for the *agogo* approach in Mzimba District. In addition, an agreement has been signed with WRASM to be reviewed at the time it signs its agreement with ACCESS.

G.4 Submission of annual work plan

With the Final Revised DIP in August 2007, Save the Children submitted a revised five-year work plan merging the CSHGP and SNL activities into a unified work plan that represents the Malawi Newborn Health Program as a whole. (Please refer to Annex 8 for this work plan.) The work plan was developed in collaboration with MOH/RHU in July 2007 and contains considerable detail in the areas of partnerships, training, advocacy, technical assistance, and networking, as requested. The funding source for each activity (SNL or CS) is indicated in the final column. Some activities are supported jointly with funds from both SNL and USAID/CSHGP. We believe this merged work plan is informative in terms of coordination, synergies, timelines, and benchmarks.

With ACCESS initiating its program activities in October 2007 – and with Save the Children's participation as an ACCESS partner - it is anticipated that coordinated work planning will evolve and develop further. As agreed with CSHGP at the Mini-University DIP review in June 2007, Save

the Children will provide a detailed annual work plan – to be developed in close collaboration with MOH/RHU, ACCESS, and Road Map partners – and synchronized with the Malawi government planning cycle and July-June fiscal year. According to this cycle, planning commences after the beginning of the New Year; a MOH/RHU planning meeting is held in February; and the final MOH/RHU work plan is submitted in April for the fiscal year that begins 1 July. Beginning early in calendar year 2008, Save the Children will be in a position to engage earlier and more productively in the MOH/RHU planning cycle for its FY 09. This engagement and coordination will be reflected in Save the Children's detailed FY09 work plan to be submitted to USAID/CSHGP with the FY08 annual report (in October 2008). Subsequent FY10 and FY11 work plans will be submitted in October 2009 and October 2010 respectively.

H. Baseline data

All baseline data was reported in the DIP. Qualitative data on household-level maternal and newborn health practices from the three learning districts of Chitipa, Dowa, and Thyolo can be found in the report of the formative research attached in Annex 4.

I. For projects entering their final year

Does not apply

J. For programs receiving Family Planning support

Does not apply

K. For TB programs

Does not apply

L. Management system

L.1. Financial management system

All financial and administrative procedures follow the standard external and internal operating rules and procedures of Save the Children and USAID for reporting and controlling expenses. The Grants Manager and the Newborn Health Program Manager liaise with the Deputy Country Director Programs on a regular basis to discuss current project requirements and program direction in budgeting and financing. Quarterly and annual budgets reports are developed by the Grants Manager in liaison with the Program Manager. All financial reporting and compliance is overseen by the Deputy Country Director, Finance and Administration. The Newborn Health Team is updated on monthly basis on the status of the program budget and expenditures.

SC's Finance Department will continue to provide overall financial management of the project, including receiving and disbursing funds, reviewing reports, and preparing submissions to USAID CSHGP.

L.2. Human resources

Edward Chigwedere In July 2007, Edward Chigwedere joined the Malawi Newborn Health Team as Research and Evaluation Manager; a new position funded 100% by SNL. Edward, a Zimbabwean national, serves as technical advisor to the operations research pilot for community-based maternal and newborn care package in the three MOH learning districts. Edward will also serve in an advisory role for the KMC retrospective and scale-up and provide technical oversight to the Newborn Health Program's M&E activities. Edward holds master's degree in population studies (University of Zimbabwe) and public health (University of Malawi) and came to Save the Children from the Malawi College of Medicine. (Please see Annex 7 for his CV.)

Temwachi Nkhono On 4 September 2007, Temwachi Nkhono replaced Loveness Kaunda as Program Assistant when Loveness left Lilongwe to accompany her husband to Nairobi. The Program Assistant position is cost-shared 50/50 between SNL and USAID/CSHGP. Temwachi is responsible for the logistical, communications, and administrative support to the Newborn Health Program.

L.3. Communication system and team development

L.3.1. Team development

Newborn Health Program Officer *Reuben Ligowe* participated in ENC training organized by MOH/RHU in collaboration with WHO that took place from 7-11 May 2007 at Kamuzu College of Nursing, Blantyre campus. The training aimed to provide participants with knowledge, skills, attitudes, materials and confidence needed in caring for the newborns to improve quality of care during the first week of life.

Newborn Health Program Manager Evelyn Zimba participated in a skill-building workshop held at Save the Children in Washington, DC, 14–18 May 2007. The aim of the workshop was to build participant skills in design of behavior change and community mobilization interventions. This training empowered the Newborn Health Program Manager with new knowledge and skills to guide the Malawi team in development of effective behavior change communication messages, strategies, and supporting activities for the community newborn care package. The Newborn Health Program Manager has also participated in Save the Children's annual health sector Program Learning Group (PLG) in May 2007, where she gave a presentation on KMC to agency colleagues from headquarters and around the world.

M&E Officer *George Chiundu* and Program Officer *Maggie Kambalame* were trained as trainers in c-IMCI at a training organized by MOH in Mulanje District 23-28 May, 2007. This formal training built capacity in the Newborn Health Program team on Malawi's 17 key care practices using the community dialogue tool; as well as in communication with other sectors. Other participants in the TOT were district officers from various ministries. Those represented included Agriculture, Water and Irrigation Development, Social Welfare, and Gender and Community Services, as well as MOH. Community IMCI addresses Malawi's third IMCI objective of improving family and community practices.

L.4. Local partner relationships

L.4.1. Partnership with MOH

Our partnership with MOH is documented in detail in the sections above, as well as in the sections immediately below.

L.4.1.1. National-level working group

Save the Children is a standing member and participates on a regular basis on the Safe Motherhood Sub-Committee of the Sexual and Reproductive Health Working Group of the MOH. The Safe Motherhood Sub-Committee meets quarterly - and sometimes more often – and it is organized under RHU. The Task Force for the community-based maternal and newborn care package reports to the Safe Motherhood Sub-Committee and is co-facilitated by Save the Children and UNICEF.

Save the Children also took part in the planning meeting for PMNCH activities in Malawi and will probably be invited as plans are revised and an on-going task force established.

L.4.1.2. Annual Work Plan

Save the Children participated in this year's planning meeting for National Sexual Reproductive Health Program (NSRHP), held on 28 February-2 March Nkopola Lodge in Mangochi. The purpose of the meeting was to evaluate the NSRHP 2006-2007 work plan and develop one for 2007–2008 including specific activities, indicators, targets and budget for each activity and identify the source of funding. The meeting was crucial to the Malawi Newborn Health program as it gave an opportunity to ensure that newborn activities were included in the work plan and available to guide DHOs in writing of District Implementation Plans.

L.4.1.3. MOH/RHU partners meeting

Save the Children participated in a partners meeting organized by MOH/RHU on 9 August 2007 to map the way forward in achievement of the 2007-2008 planned activities. The discussion focused on the need for proper coordination between MOH/RHU and partners and partner commitment on the 2007 – 2008 work plan. The partners also discussed the progress on the work plan in terms of the implemented activities versus the Milestones. New dates were proposed for some activities such as finalization of the development of the Integrated Essential Obstetric and Neonatal Care training manual was pushed to October 2007. The members emphasized the need to involve all key partners during development of MOH/RHU annual work plan. UNICEF gave a briefing on the plans for a meeting to discuss on how to introduce clean delivery kits into the Malawi Health system with technical assistance from Zambia.

L.4.1.4. Sector-Wide Approach (SWAp)

Over the past year, as a national level partner, Save the Children has participated in bi-annual SWAp reviews; (mid-term and annual). The SWAp provides a framework that facilitates MOH, donors, and other actors and stakeholders within the health sector to work together in implementation of the Essential Health Package (EHP) and Joint Program of Work (POW) for 2004-2010. There are

six pillars of the POW that include: (1) Human resource for health; (2) pharmaceutical and medical supplies and essential basic equipment, (3) infrastructure; (4) EHP program implementation; (5) central institutions; and (6) policy and systems development. The SWAp strategy is now in its third year of implementation. Activities and services included in District Implementation Plans are funded from the SWAp pool fund.

This past year's SWAp midterm review was held on 30 April-3 May 2007. Objectives of the review were to (1) review mid-year performance of the sector against the SWAp M&E frameworks, Annual Implementation Plan, and budget; (2) review performance in the six pillars at district and policy level against work plans and key undertakings/milestones agreed at the annual review; and (3) propose key undertakings and actions to be achieved by the next annual review.

Milestones were developed for each department, including the following for maternal and newborn health:

- Finalize the guidelines on community interventions for mothers and newborns;
- With districts and zones, develop acceleration plan to enhance the MNC service coverage using Africa Development Bank resources;
- Increase number of districts signing service agreements for maternal and newborn care with CHAM;
- With Save the Children and other partners, RHU and zones to put together a schedule of District Implementation Plans for all districts in advance to facilitate preparation and representation at all times and ensure district plans reflect increased attention to MNC.

This year Annual SWAp was conducted 25-27 September 2007 with Save the Children in attendance.

L.4.2. PMNCH collaboration

Malawi is one of three sub-Saharan African countries to benefit from funding from the Bill & Melinda Gates Foundation through PMNCH grant that aims to achieve a maximum reduction in maternal, newborn, and under-five mortality within a 3-year period in three high burden countries (Burkina Faso, Malawi, and Mozambique). Save the Children was among the key partners that participated in a PMNCH workshop organized by the core team (MOH, WHO, UNICEF, UNFPA) and held at Sun N' Sand Holiday Resort in Mangochi from 16-19 April 2007. Objectives of the workshop were to (1) agree on the set of critical maternal, newborn and child health interventions to be scaled-up in Malawi during the coming 3-5 years; (2) develop a plan to take these interventions to scale; (3) assess resource requirements and available resources for scale; (4) identify gaps to be filled by the funding ($7 million over three years); and (5) agree on next steps for preparing and submitting a draft implementation plan. At the meeting, Save the Children was given an opportunity to present on and advocate for Malawi's newborns.

Participants were grouped into three groups – maternal, newborn, and child health – and asked to recommend three key activities for inclusion in the final implementation plan. A draft outline of the plan was developed during the meeting and is currently under revision. The group working on newborn care recommended the following three priorities: (1) adequate post-natal check-up for mother and baby available at both health facility and community level, including (2) prompt

identification and referral/management of neonatal sepsis, and (3) special care for pre-term and low birth weight infants, including KMC and resuscitation of asphyxiated newborns at birth.

L.4.3. ACSD Strategy for IMCI

Save the Children Newborn Health program is a member of the IMCI Technical Working Group. With support from UNICEF, the GOM developed a Strategic Plan to operationalize the ACSD/IMCI policy which was launched in 2006. The working group conducted a meeting on 19 July 2007at Kuka Lodge in Lilongwe, to cost out the strategy in order to make it operational. The group came up with exclusive costs that covered inputs for delivery of high impact interventions, shared costs to cover actual delivery costs, cross-cutting costs covering indirect costs, e.g., training costs and overheads. Following the costing exercise, a national consensus building meeting was conducted on 31 July at Cresta Crossroads Hotel in Lilongwe to validate sectoral contribution to the document.

L.4.3. PVO coordination/collaboration in country

Save the Children maintains collaborates and seeks to coordinate communication with other organizations implementing maternal and newborn care programs and activities, including The Health Foundation, Women and Children First, ICH (Mai Mwana), and the Millennium Villages Project.

L.4.3.1 The Health Foundation

The Health Foundation is supporting nine health facilities in three districts (Kasungu, Lilongwe, Salima) to improve maternal and neonatal care and data management at health facilities

Save the Children participates in Health Foundation quarterly review meetings, the purpose of which is to assess achievements made by the facilities during the past six month period in the areas of clinical care, data management, and development of women-friendly health facilities. In addition, the quarterly review meetings provide participants opportunities to share lessons learned and new ideas about quality of care and have input into targets for the coming six month period. The Health Foundation consortium has a facility focus and recognizes the important of community-based treatment of neonatal sepsis. The Health Foundation is following closely the Save the Children experience with the community-based package.

L.4.4. Other relevant management systems

Does not apply

L.4.5. Organizational capacity assessment

Does not apply

M. Mission Collaboration

Save the Children is a partner in ACCESS, USAID's multi-year global project of USAID that aims to improve availability and access to quality sustainable facility and community maternal and newborn health services. The Mission has invited ACCESS to support MOH and the USAID/Malawi country strategy to accelerate the reduction of maternal and neonatal morbidity and mortality towards achievement of the Millennium Development Goals (MDGs) 4 and 5. ACCESS is implemented through JHPIEGO, which has recruited a Chief of Party and is taking the lead in facility services. As an ACCESS partner, Save the Children in Malawi is responsible for community-based services plus implementation of KMC at both facility and community level in the three ACCESS districts (Rumphi, Nkhotakota, and Machinga). ACCESS will also be implementing the community-based maternal and newborn care package (described in Section A.2. above) in its three learning districts.

From 18-27 June 2007, Joseph de Graft Johnson (ACCESS/Save the Children) was in-country representing ACCESS for a series of consultative meetings with Save the Children and other key stakeholders for the development of the ACCESS implementation plan. He was accompanied by Save the Children's M&E Officer George Chiundu on the majority of visits. Malawi Country Office Deputy Director, Programs Jeanne Russell has also been integrally involved in developing the program and planning for start-up. The project commenced activities from 1 October 2007. Save the Children is close to finalizing two technical positions on the project (Community Maternal and Newborn Advisor and Community Maternal and Newborn Care Coordinator), both of whom report to the ACCESS COP in Malawi. A third position - KMC Coordinator – is being advertised with interviews scheduled for mid-October.

N. Timeline of activities for the coming year

We are attaching the merged work plan developed for the Final Revised DIP submission in August 2007. (Please see Annex 8.) By agreement with CSHGP in the DIP consultation at the Mini-University in Baltimore in June, Save the Children will submit an annual work plan consistent with the MOH/RHU planning cycle. The first such annual workplan (for GOM FY July 08-June 09) will be submitted with the Second Annual Report, due to CSHGP in October 2008.

O. Results Highlight

Best practices for achieving impact at scale

As in much of sub-Saharan Africa, more than a quarter of under-five mortality in Malawi occurs during the first month of life, with the first day and first week being especially vulnerable periods for mother and newborn. Many factors contribute to Malawi's high maternal mortality ratio (984/100,000 live births, 2004 DHS), under-five mortality rate (133/1,000, 2006 MICS), and neonatal mortality rate (31/1,000, 2006 MICS), including: 1) low access and availability of quality health care for mothers and newborns, 2) poor recognition of danger signs and 3) inappropriate household practices and care-seeking behaviors; 4) weak social and policy enabling environment; and 5) livelihood challenges. Save the Children's Newborn Health Program – funded by USAID/CSHGP with match from Saving Newborn Lives - focuses on the main causes of neonatal mortality: infection, birth asphyxia, consequences of prematurity and low birth weight, and related maternal factors. Together, these account for 89% of all newborn deaths in Malawi. The Newborn Health Program - carried out in partnership with MOH, UNICEF, and other key stakeholders - reaches approximately 500,000 neonates (0-28 days) born in Malawi every year and their mothers with:

- Increased **availability of and access** to key maternal and newborn care services (increased numbers of Health Surveillance Assistants (HSAs); increased capacity of HSAs and health workers; increased number of facilities better supplied; service delivery better coordinated along continuum of care; stronger and more effective linkages between health facilities and community care providers);
- Improved **quality** of key maternal and newborn care services (improved health worker performance and supervision; more culturally acceptable service delivery)
- Improved household-level **attitudes and knowledge** of key essential newborn care and related maternal care behaviors (improved communication through multiple channels of key antenatal, delivery, ENC, PNC messages and service information)
- Improved **policy and enabling social environment** for maternal and newborn health (changed policies; improved standards; re-energized advocacy, networks, community mobilization; increased capacity and engagement of civil society organizations).

To address the many challenges to achieve impact at scale for maternal and newborn health, Save the Children works at the national level and:

- Supports Government of Malawi strategies and **integration of maternal and newborn care into existing strategies, programs, and packages**, including:
  - Sector Wide Approach (SWAp)
  - Essential Health Program (EHP)
  - Road Map for Accelerated Reduction of Maternal and Newborn Mortality and Morbidity
  - Accelerated Child Survival and Development (ACSD) Strategy for Integrated Management of Childhood Illness (IMCI).
- **Generates evidence** through implementation research and evaluation on design and delivery of a community-based maternal and newborn care package integrated with the SWAp, EHP, Road Map, and ACSD/IMCI;
- Partners with the Ministry of Health (MOH), UNICEF, WHO, UNFPA, and other national and international stakeholders in supporting **joint planning, review, implementation, and evaluation** to reach common goals and objectives;
- Plays a technical leadership role on national-level task forces and working groups in order to ensure quality newborn care all along the **household-to-facility continuum of care**;
- Engages **strategic partnerships** at the national level, including:
  - Partnership for Maternal, Newborn, and Child Health
  - White Ribbon Alliance for Safe Motherhood in Malawi (WRASM);
- **Cooperates with the USAID Mission in implementation of ACCESS** (Access to Clinical and Community Maternal, Neonatal and Women's Health Services), the USAID global project, as well as with **BASICS III** (Basic Support for Child Survival), USAID's global flagship project for reduction of under-five mortality.
- **Influences national policy** through strengthening the enabling environment, including local advocacy capacity (WRASM), and ensuring incorporation of evidence-based best practices into Malawi's policy, norms, and protocols.

First year results – shared by all partners - include incorporation of the community-based maternal and newborn care package into the EHP delivered by HSAs, adoption of a clean delivery kit, and production of an Integrated Obstetric and Newborn Care Training Manual. The maternal and newborn care package - integrated with ACSD/IMCI - is now ready to be piloted in three learning districts with scale up planned for all of Malawi's 28 districts.

P. "Does not apply"

Topics in the guidelines that do not apply have been so indicated.

Q. Other relevant aspects

Q.1. Tanzania/Mozambique Team Visit to Malawi

A team of thirteen from Tanzania and Mozambique – comprising MOH and WHO officials and Save the Children team members – will visit Malawi during the week of 6-10 November. The purpose of the visit is to observe and learn from Malawi KMC experiences for replication and scale up in those countries. The program has been planned to allow visits to four active KMC sites across the country. This KMC learning visit will take place the week prior to the SNL Africa Newborn Research Workshop planned for the week of 12-16 November 2007 in Blantyre.

Q.2. The agogo approach for improved newborn care practices

Under a sub-grant, our partner Ekwendeni Mission Hospital, a CHAM facility, in Mzimba District is commencing work to develop and package its *agogo* (grandparent) approach for community mobilization, improved care practices, and changes in social norms. The 3-year sub-grant with Ekwendeni was signed effective 1 October 2007. While details of the sub-grant were being negotiated, Save the Children made private donated funds (in the amount of $50,000) available to jump-start the process, while Newborn Health Program team members provided technical assistance to Ekwendeni for proposal development and refinement of its work plan.

An *agogo* mapping exercise started 20 August 2007 and lasted for one week. A total of 3,956 *agogos* were registered, of which 2,417 (61%) are female. Sixty percent (60%) of the *agogos* are literate. The exercise covered both inside and outside the Ekwendeni catchment area in Mzimba District. Due to overwhelming response of grandparents in the communities, it was not possible to register all *agogos* who wanted to participate. Development of the *agogo* curriculum took place from 10-14 September 2007 with participation from Ekwendeni Mission Hospital, Ekwendeni College of Nursing, Save the Children, Kamuzu College of Nursing, the Christian Health Association of Malawi, and the MOH Zonal Office North. The next step is for Save the Children to provide technical assistance to Ekwendeni to develop a simple and workable M&E plan for the *agogo* project.

R. Published papers, presentations, and participation in key global activities

R.1.

Does not apply

R.2 Presentations

- Evelyn Zimba, Program Manager, was invited to present on issues and new trends in newborn health at a workshop organized by MOH/RHU organized for Integration of the Basic Emergency Obstetric and Newborn Care training manual, held on 3–4 May 2007 at

Livingstonia Beach Hotel in Salima; and during the follow-up meeting on 20 June 2007 at Cresta Crossroads Hotel.

- Evelyn Zimba also delivered a presentation entitled *Malawi's newborns: Gaps and opportunities* during the White Ribbon Alliance Regional Advocacy Workshop held in Malawi in October 2006 and the national PMNCH workshop held in April 2007 at the Sun N' Sand Holiday Resort in Mangochi. This information was well-received by White Ribbon Alliance members from several African countries and provided the basis for identification of priority newborn care activities to be addressed in the Gates-funded PNMCH initiative in Malawi.

- During the CSHGP Mini-University workshop held in Baltimore 4-8 June 2007, Evelyn Zimba participated in the MAMAN Bazaar and demonstrated ENC and KMC.

- Evelyn Zimba participated in a skill-building workshop held at Save the Children in Washington, DC, from 14-18 May 2007. The focused on design of behavior change and community mobilization interventions.

- Jeanne Russell, Deputy Country Director – Program, and Evelyn Zimba both participated in the SNL Strategic Planning for Scale-up Workshop in Dubai held 18-22 June 2007 where Evelyn presented the scale up strategy for the Malawi Newborn Health Program. This work shop supported country teams in integrating scale-up strategies into existing work plans.

- Evelyn Zimba, Newborn Health Program Manager, was invited to participate in a panel discussion on and about post-natal care and the community-based maternal and newborn care package at the Women Deliver Conference, taking place 18-20 October 2007 in London, UK. The aim of this global conference is to mobilize high-level commitment to achievement of the fifth Millennium Development Goal (MDG 5) for reduction of maternal mortality in participating countries. The conference will bring together some 2,000 people from the global maternal health community, including politicians, international agencies, media, academics, grass-root workers, and activists.

R.3 Participation in key global activities

- Edward Chigwedere, SC/Malawi Newborn Health Research Manager, and Dr. Charles Mwansambo, MOH/Head of Pediatrics, Kamuzu Central Hospital, represented Malawi and participated in the Expert Consultation in Community Neonatal Sepsis Management held in London from 26–28th September 2007; organized by USAID, SC/SNL, and WHO, in collaboration with Boston University Center for International Health and Development, Johns Hopkins University School of Public Health, and University College London Center for International Health and Development. The aim of the Expert Consultation was to review new evidence and consider future research priorities for development of safe, effective, low-cost, simple and feasible community-based case management approaches for neonatal sepsis/infection in areas with no or very limited access to facility-based care. It is believed the knowledge gained will help guide MOH, SC, the Malawi Newborn Health Program, and other partners and stakeholders to develop a protocol for community management of neonatal sepsis. As this activity was taking place as the Annual Report was being completed, results of the consultation are not yet available.

Annexes

Annex 1

Malawi Newborn Health Program - Key First Year Activities - 1 October 2006 - 30 September 2007

Project Area	Key Activities (as outlined in the DIP)	Status of Activities	Comments
Program Management	Activity 1: Recruit and hire staff	*Completed*	*Brief CVs for new team member attached*
	Activity 2: Project start-up activities	*Completed*	*Included in Final Revised DIP*
Operational Research			
Community-based maternal and newborn care	Activity 1: Finalize proposal and budget with MOH, UNICEF and 3 districts for community PNC pilot	*Program desccription completed*	*Attached*
	Activity 2 : Finalize tool and conduct Health Facility Assessment	*In progress*	*Tools under review, in process of identifying consultant to conduct HFA*
	Activity 3: Collaborate with partners to design, conduct and analyze population-based survey in 3 learning districts	*Postponed to next quarter*	*Draft survey tools under review*
	Activity 4: Design sepsis management protocol	*Postponed to FY08*	*By MOH*
	Activity 5: Finalize design of district pilot (sepsis to come later)	*Completed*	*The CBMNC package contained in the attached CBMNC proposal*
	Activity 6: Contribute to adaptation of MNH training package for HSAs in collaboration with UNICEF and MOH (timing to be confirmed with UNICEF)	*To be done next quarter*	
	Activity 6: TOT for HSA training package (with UNICEF)	*To be done next quarter*	
	Activity 7: Assist with development of OR plans and postnatal care protocols on ANC and PNC home visitation, community management of LBW babies, and newborn sepsis	*In progress*	
	Activity 8: With RHU and districts and other key stakeholders, establish and support system for ongoing training/capacity assessment (pre-post tests, training evaluations, trainer assessment checklists) for facility health workers and HSAs	*Postponed to next quarter*	
	Activity 10: Support development of IEC/BCC strategies and materials for HSAs community mobilization work with communities	*Postponed to next quarter*	
	Activity 11: Support (TA/financing) costing study for community MNH package	*Post poned to next quarter*	
	Activity 12: Conduct quarterly joint monitoring/TA support visits to each learning program district	*Started*	*Monitoring of formative research done*
	Activity 13: Facilitate and participate in partner monthly and quarterly task force meetings for 3 learning program districts	*Completed*	*Minutes of the monthly meetings available*
Mai Mwana Randomized Controlled Trial	Activity 17: Conduct quarterly monitoring of progress on Mai Mwana subgrant	*Not yet started*	*Working on the logistics and checklists to be used in the quarterly monitoring visits*
	Activity 18: Conduct quarterly financial monitoring on compliance of Mai Mwana subgrant	*Not yet started*	*Awaiting ICH response to audit findings*

	Activity 19: Facilitate annual CHAM & MOH visits to Mai	*Not yet done*	
Kangaroo Mother Care Retrospective study	Activity 22: Conduct KMC retrospective study and come up with recommendations for scale-up with respect to outcomes, operational tools, and efficiencies in terms of staff, training and infrastructure	*Draft report received*	*Attached*
	Activity 23: Support development of prototypes to support scale-up (key job aides, wall charts, ward guidelines, monitoring tools, BCC materials)	*In progress*	
	Activity 24: In collaboration with RHU and ACCESS disseminate retrospective KMC study results to key stakeholders	*Postponed to next quarter*	
	Activity 27: Facilitate work planning for district scale-up	*After report*	
	Activity 28: Provide TA for district scale-up and supportive supervision at facility and community level	*Postponed*	
	Activity 29: Participate in annual SNL Africa Research Workshop	*Completed*	
Collaboration and Partnership	Activity 1: Raod Map launch activities	*Completed*	
	Activity 2: PMNCH Malawi country plan	*Completed*	
	Activity 4 : Define roles, responsibilites between partners	*In progress*	*Roles of partners highlighted in the CBMNC report*
	Activity 5: MOU/agreement with MOH/RHU	*Not yet done*	
	Activity 6: MOU/agreement with WRASM-Mw	*Completed*	
	Activity 7: MOU/agreement with UNICEF, MOH, 3 districts (community-based) neonatal care pilot	*In discussion*	
	Activity 8: Sub-grant agreement with Ekwendeni (*agogo* approach)	*Completed*	
	Activity 9: Participate actively in Maternal and Newborn Sub-committee of RHU Sexual and Reproductive Health Committee	*Completed*	
	Activity 10: Advocate for revised indicators and targets in HIS supportive of newborn health priorities	*In progress*	*First meeting done*
	Activity 11: Participate in joint planning with MOH, ACCESS and other key stakeholders on maternal and newborn care pre and in-service education	*Completed*	
	Activity 12: Assess status of pre-service ENC/KMC in partnership with ACCESS	*Completed*	
	Activity 13: Advocate with RHU for revision of postnatal visitation schedule in RH Guidelines currently being finalized	*Participated in the revision*	
	Activity 14: Support set-up of system for training assessments and supervision (pre-post tests, training evaluations, assessment checklists and supervision checklist for both trainers and trainees)	*In progress*	*Currently working on the in- service training schedule*

	Activity 15: Facilitate/support development of job aides, supportive supervision at national level	*Postponed to next quarter*	
	Activity 16: Review/revise health education/BCC materials for use by facility and community health workers (counseling cards, posters, black and white brochures)	*In planning*	*Discussions with RHU in progress on the way forward*
	Activity 18: Develop HMIS and indicators (process and quality emphasis) and support district implementation	*In progress*	*HMIS/Process indicators to be reviewed in the next task force meeting*
	Activity 19: Participate with all partners in the development of RHU annual work plan	*Completed*	
	Activity 20: Assist RHU with providing support for annual District Implementation Plan (DIP) by facilitating development of a schedule of DIPs for all the districts and ensure there is representation at all times for maternal and newborn care	*Postponed to next quarter - October*	
	Activity 23: Participate in quarterly meetings at national level on MNC, i.e. Health Foundation, Perinatal Care, Women and Children First	*Completed*	
	Activity 24: Attend partnership meetings on MNCH	*Completed*	
	Activity 25: Attend quarterly White Ribbon Alliance meetings	*Completed*	
	Activity 27: DIP data review and DIP writing	*Completed*	
	Activity 28: Develop plan of process documentation for MOH/RM partnership	*In progress*	
	Activity 29: Participate in annual SNL Program Manager meetings	*Completed*	
	Activity 30: Participate in SNL newborn health scale-up meeting	*Completed*	
Policy, Advocacy, Networking	Activity 2: Advocate for revised postnatal visitation schedule	*Completed*	*In RH Guidelines; advocating for indicators for its monitoring*
	Activity 5: Facilitate revatalization of ENC/KMC TOTs Network by conducting a census of TOTs trained during SNL 1	*Completed*	
	Activity 7: Participate in regional & international global meetings for NBH, i.e., PLG and regional exchange visits	*Completed*	
Mainstreamed Training, TA Suppo	Activity 1: In collaboration with MOH, ACCESS, WHO, UNFPA, UNICEF consolidate and adapt various packages (Safe Motherhood, Life Saving Skills, BEmONC, SNL and KMC) into one standard competency-based package on Essential Obstetric and Newborn Care	*In progress due October*	
	Activity 2: Using lessons learned from the KMC retrospective assessment provide TA during the harmonization/integration of RHU training manuals	*In progress*	

	Activity 3: Facilitate development of a monitoring system for the trainings	*Postponed to FY08*	
	Activity 4: Facilitate development of supervision tools during trainings and follow-up sessions	*Postponed to FY08*	
	Activity 5: Conduct a refresher course of trainers trained under SNL1 (about 30 to be confirmed after census) using the new Essential Obstetric and Newborn Care package	*Postponed to FY08*	*Awaiting finalization of the integrated manual*
	Activity 15: Participate in quarterly meetings to review progress of trainings and develop action plans	*Not yet started*	
Monitoring & Evaluation, Operations Research, Reporting and Documentation			
Monitoring and evaluation	Activity 1: Prepare and submit quarterly financial reports	*In progress*	
	Activity 2: Prepare and submit annual programmatic reports to CSHGP	*In progress*	
	Activity 3: Conduct qualitative assessment for agogo	*Completed*	*Attached to DIP*
	Activity 4: Concuct KPC Survey in Mzimba	*Completed*	*Attached in DIP*
	Activity 5: Facilitate HFA in Mzimba district	*Not yet done*	*This will be done next quarter when is*
	Activity 6: DIP review at Mini-University	*Completed*	
	Activity 7: Participate in biannual MOH HIS meeting	*In progress*	
Planning and Reviews	Activity 1: Participate in biannual SWAp reviews	*Completed*	
	Activity 2: Partipate in RHU annual workplan reviews	*Completed*	
	Activity 3: Submit detailed annual work plan to CSHGP	*Completed*	
Ekwendeni Sub-grant	Activity 1: Assist Ekwendeni to develop and submit a program description and work plan on *agogo* approach	*Completed*	
	Activity 2: Provide TA for the review and revision of BEHAVE messages	*Postponed to first quarter FY08*	
	Activity 3: Provide TA during the development of the *agogo* approach training curriculum and other training materials	*In progress*	*First meeting done where curriculum was developed. To review the curriculum and finalise it including training materials and evaluation tools*
	Activity 4: Assist Ekwendeni develop M&E and documentation plan	*In progress*	*M&E Plan developed but requires to set up the MIS for monitoring*
	Activity 9: Provide TA for process documentation and monitoring of the initiative	*Postponed*	

Annex 2
MOH/RHU Authorization for Three-District Pilot

Telephone: + 265 789 400
Facsimile: + 265 789 431
e-mail doccentre@malawi.net
All Communications should be addressed to:
The Secretary for Health and Population

In reply please quote No. MED/4/36c

MINISTRY OF HEALTH
P.O. BOX 30377
LILONGWE 3
MALAWI

30 August 2007

Dr Charles Mhango
Ministry of Health
P.O. Box 30377
Lilongwe 3

Dear Sir,

RE: PROTOCOL # 473: COMMUNITY BASED MATERNAL AND NEWBORN HEALTH CARE

Thank you for the above titled proposal that you submitted to the National Health Sciences Research Committee (NHSRC) for review. Please be advised that the NHSRC has **reviewed** and approved the study.

APPROVAL NUMBER : 473

The above details should be used on all correspondences, consent forms and documents as appropriate.

- **APPROVAL DATE :30th August 2007**
- **EXPIRATION DATE 29th August 2008**
  After this date, this project may only continue upon renewal. For purposes of renewal, a progress report on a standard form obtainable from the NHSRC Secretariat should be submitted one month before the expiration date for continuing review.
- **SERIOUS ADVERSE EVENT REPORTING:** All serious problems having to do with subject safety must be reported to the NHSRC within 10 working days using standard forms obtainable from the NHSRC Secretariat.
- **MODIFICATIONS**: Prior NHSRC approval using forms obtainable from the NHSRC Secretariat is required before implementing any changes in the protocol (including changes in the consent documents). You may not use any other consent documents besides those approved by the NHSRC.
- **TERMINATION OF STUDY**: On termination of a study, a report has to be submitted to the NHSRC using standard forms obtainable from the NHSRC Secretariat.
- **QUESTIONS**: Please contact the NHSRC on telephone number *+265 1 789 400/314* or by email on doccentre@malawi.net.
- **OTHER**: Please be reminded to send in copies of your final research results for our records (Health Research Database).

Kind regards from the NHSRC Secretariat.

.....

For: **CHAIRPERSON, NATIONAL HEALTH SCIENCES RESEARCH COMMITTEE**
Promoting Ethical Conduct of Research

Executive Committee: *Dr C. Mwansambo (Chairperson), Prof. E. Molyneux (Vice-Chairperson)*
Registered with the USA Office for Human Research Protections (OHRP) as an International IRB
IRB Number IRB00003905 FWA00005976

Annex 3

Malawi
Community-Based
Maternal Newborn Care Programme

Thyolo, Chitipa, and Dowa Districts

2007 to 2010

Reproductive Health Unit (RHU)
Ministry of Health, Malawi

In collaboration with partners
Save the Children/Malawi
UNICEF/Malawi

Contents

Summary Information

Title:	Community-based Newborn Care in Malawi
Proposed sites:	Thyolo, Chipita and Dowa districts, Malawi
Submitting Institution:	Reproductive Health Unit of the Ministry of Health
Duration:	2007-2010
Total budget:	$959,665
Primary contact person:	Dr. Chisale Mhango The Director Reproductive Health Unit of the Ministry of Health P.O Box 30377 Lilongwe, Malawi. Telephone: 01 751 552 Email: cmhango@globemw.net
Alternate contacts:	The Director of Clinical Services Ministry of Health Address: P.O. Box 30377 Lilongwe, Malawi.
Partner Institutions	District Health Offices Thyolo, Chitipa, Dowa Save the Children UNICEF WHO UNFPA
Date submitted:	September 20, 2007

Acronyms

ACSD	Accelerated Child Survival Development
BCC	Behaviour Change Communication
BEmOC	Basic Emergency Obstetric Care
CHAM	Christian Health Association of Malawi
DHMT	District Health Management Teams
DHS	Demographic and Health Survey
DPT3	Diptheria, Pertussis, and Tetanus (3 doses)
EHP	Essential Health Package
FANC	Focused Antenatal care
GDP	Gross domestic product
HFA	Health Facility Assessment
HMIS	Health Management Information System
HSA	Health Surveillance Assistant
IMCI	Integrated Management of Childhood Illness
IPTp	Intermittent Presumptive Treatment of Malaria during Pregnancy
KMC	Kangaroo Mother Care
LQAS	Lot Quality Assurance Sampling
MDG4	Millennium Development Goal 4
MGDS	Malawi Growth and Development Strategy
MMR	Maternal Mortality Ratio
MNCH	Maternal, Newborn, and Child Health
MRC	Medical Research Council (MRC)
PMTCT	Prevention of mother-to-child transmission
MOH	Ministry of Health
NHSRC	National Health Sciences Research and Ethics Committee
PMTCT	Preventing Maternal to Child Transmission
POW	Programme of Work
PPS	Probability proportionate to size
RHU	Reproductive Health Unit
SEARCH	Society for Education, Action and Research in Community Health
SWAp	Sector Wide Approach
TAs	Traditional Authorities
TBA	Traditional Birth Attendant
TOT	Training of Trainers
UNFPA	United Nations Populations Fund
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
VDC	Village Development Committee
VHC	Village Health Committee
WHO	World Health Organization

Executive Summary

The Malawi Ministry of Health (MOH) Reproductive Health Unit (RHU) - in partnership with UNICEF, Save the Children, and other partners - proposes a three-year programme of work to develop, implement and evaluate the feasibility, cost and outcomes of a scaleable strategy of high impact interventions to improve key maternal and neonatal practices and health care coverage in the three districts of Chitipa, Dowa, and Thyolo.

The goal of this programme is to reduce maternal and neonatal mortality in Malawi. This will be done through the delivery of an integrated package of community-based high impact interventions for mothers and newborns delivered by Health Surveillance Assistants (HSAs) and linked with community mobilisation and health system strengthening, in the context of the Essential Health Package (EHP) and Accelerated Child Survival Development (ACSD) Strategy for Integrated Management of Childhood Illness (IMCI) framework in Malawi. The specific objectives of the programme are as follows:

1. To improve access, availability and quality of existing *facility-based maternal and newborn care* in the three programme districts. This will be done by strengthening existing maternal, newborn, and child health (MNCH) packages such as focused antenatal care (FANC), Basic Emergency Obstetric Care (BEmOC) and IMCI, and specifically ensuring that high impact interventions to reduce neonatal mortality are initiated or strengthened at facilities, including neonatal resuscitation, kangaroo mother care (KMC), and care of ill babies at referral centres, particularly neonatal sepsis case management.

2. To increase access and availability of *community-based maternal and newborn care*. This will be done by developing and implementing a package, including training and supervision tools, job aids for home visits and related supply kits, for use by HSAs, and implementing this package with links to community IMCI (c-IMCI), FANC, routine postnatal care, nutrition, immunisation and other key preventive care packages within the EHP.

3. To increase *community knowledge and use of* key maternal and newborn health behaviours and demand for care. This will be done by complementing formal health system initiatives at community and facility level with proven community mobilization approaches to improve maternal and newborn care in the community.

4. To develop, implement, refine and evaluate an algorithm for diagnosis and referral of *neonatal sepsis* by HSAs. This will be informed by the recent learning of other community-based interventions for the treatment and/or referral of neonates with sepsis, and will be developed during Year 1 and implemented in Years 2 and 3. If treatment of neonatal sepsis with antibiotics by HSAs is to be added, a proposal addendum for this component of the programme will be submitted to the National Health Sciences Research and Ethics Committee (NHSRC) prior to initiation.

Monitoring and evaluating the results of the community-based maternal and newborn care newborn programme - in terms of feasibility and changes in behaviours and coverage of care and programmatic cost - is an essential component of this programme and will inform learning to maximise accelerated scale up of the package. Monitoring and evaluation measures will include

formative research into household and community practices, a Health Facility Assessments (HFA), baseline and endline population-based Knowledge, Practice, and Coverage surveys, and routine collection of information through the Health Management Information System (HMIS), and periodic special surveys. A modular costing tool is currently being developed by Save the Children's Saving Newborn Lives, in partnership with the Medical Research Council (MRC) in South Africa, and will also be used to collect comparable cost data in a range of countries in order to inform national/regional/global scale up of integrated newborn care and particularly community-based and postnatal care. Outputs will be programmatic (e.g., costs per postnatal care visit, marginal costs of treatment), as well as economic. A participatory Midterm Review will assess progress and make recommendations for the way forward; and a final evaluation led by an external evaluator will document results and provide recommendations for sustainability and achieving impact at scale.

This programme will be managed and implemented within the prevailing structures and staffing of the MOH and the three district health management teams. UNICEF, Save the Children, and other partners will provide technical and financial support where mutually agreed in order to support the planning, implementation, capacity building and monitoring and evaluation of the programme. The Task Force for this programme, led by the MOH and with representation from district management, UNICEF, Save the Children and other partners, will continue to meet regularly during implementation and will also ensure progress and results are shared on a regular basis in national, regional, and global fora as applicable.

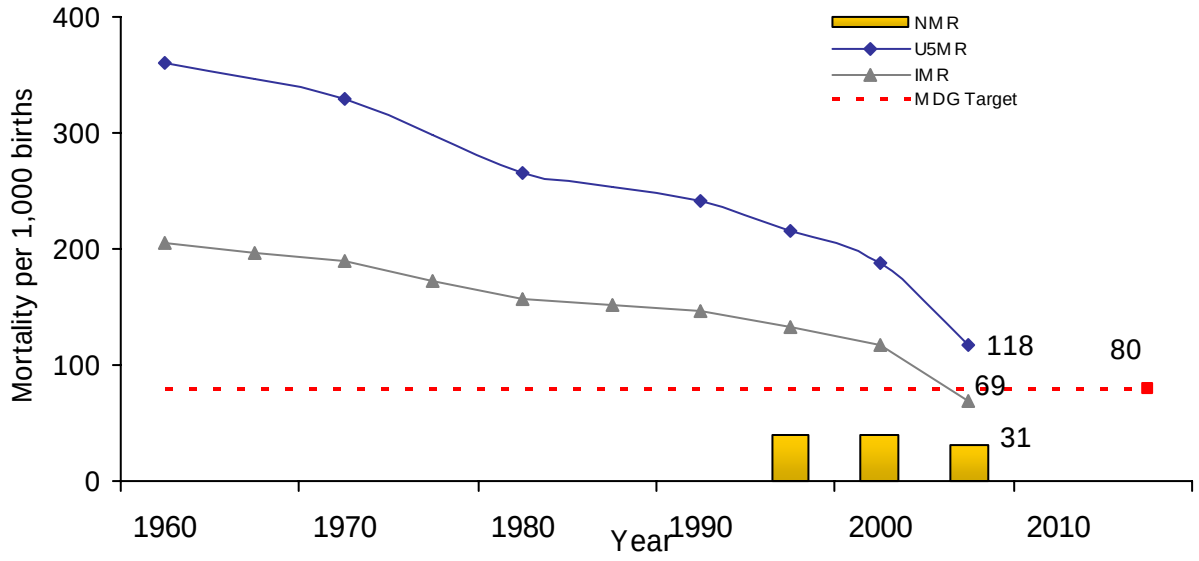
The budget for this programme is $959,665.

Background and Rationale

Problem Statement. Malawi has a population of nearly 12 million people and is one of the poorest countries in the world, ranking 166 out of 177 on the Human Development Index (2006) and with a per capita GDP of $160[1]. Nearly 85% of the population lives in rural areas, and 65% of the population is defined as poor and unable to meet daily consumption needs.[2]

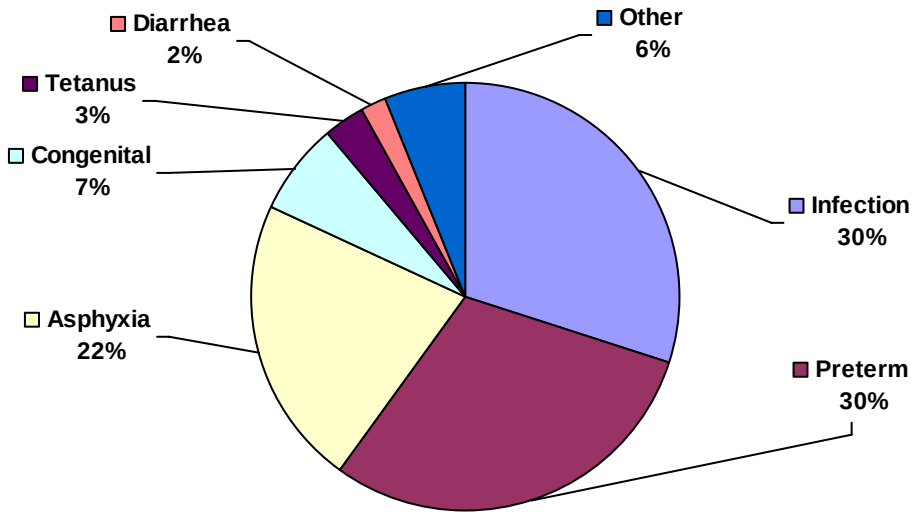
Despite progress over the last several years, maternal, child, and neonatal mortality are still high. Although the maternal mortality ratio (MMR) declined from 1120 per 100,000 live births in 2000 to 984 in 2004, it remains one of the highest in the world[3]. Progress toward Millennium Development Goal 4 (MDG4) for reducing under-five mortality is presented below in Figure 1. At 118/1,000, the under-five mortality rate has declined substantially since 1990, but still has a long way to go. The neonatal mortality rate, at 31 per 1,000 live births, results in the death of 17,200 newborns annually[4] and accounts for 26% of under-five mortality. As many neonatal deaths take place at home and are not recorded or counted, the NMR is likely to be much higher. Clearly, in order to reach MDG4 and save more lives, substantial reductions in neonatal mortality will be essential.

Figure 1: Progress towards MDG4 in Malawi



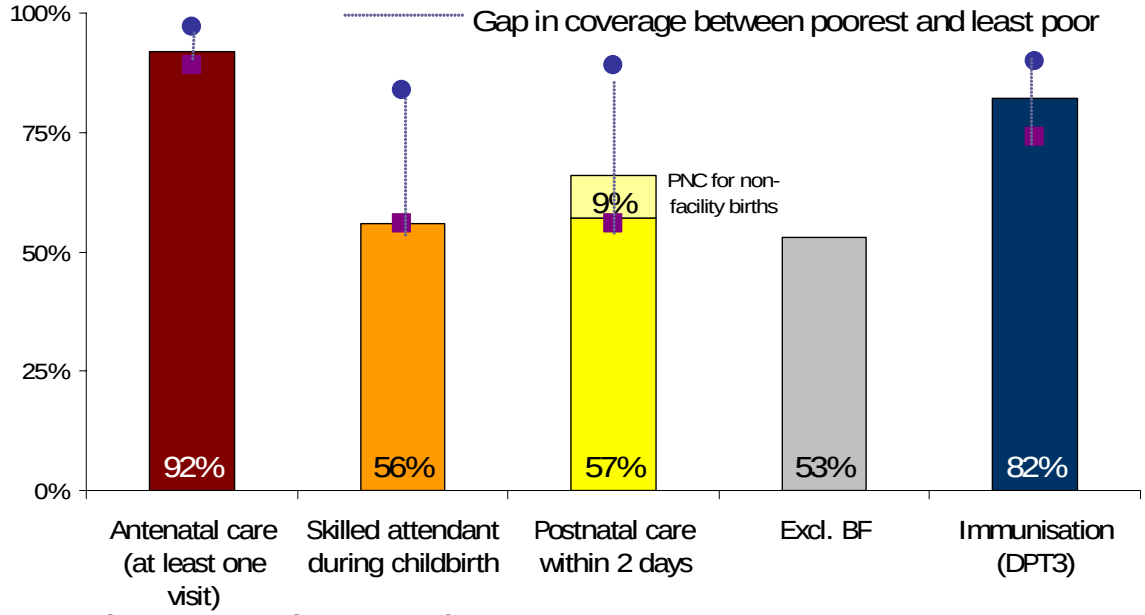
The main causes of neonatal death in Malawi (Figure 2) are infection (30%), asphyxia (22%) and preterm birth (30%). Anywhere from 60-90% of these deaths are in low birth weight babies, mostly preterm[5]. The first week of life is the most critical for the neonate, with 50% of deaths occurring within the first day and 75% within the first week, just when coverage is lowest. Further, there is a large urban/rural disparity in neonatal mortality: the urban NMR is 22/1,000 on average while in rural areas it is 39/1,000.[6] It is estimated that, if rural families were able to achieve the same levels of neonatal mortality as urban families, the annual number of neonatal deaths would be cut almost in half[7]

Figure 2: Estimated Causes of Neonatal Deaths in Malawi



Recent analyses in *The Lancet* Neonatal Series concluded that basic, cost-effective interventions currently exist that could prevent up to 72% of neonatal deaths.[8] Despite low coverage for these critical interventions in Malawi, positive trends are emerging. Neonatal mortality has declined over the last several years, likely because of the high coverage of tetanus toxoid immunization, which resulted in the achievement of neonatal tetanus elimination status, high exclusive breastfeeding during the first two months, and increasing coverage of intermittent presumptive treatment of malaria during pregnancy (IPTp). Current coverage along this continuum of care is shown in Figure 3.[9]

Figure 3: Coverage Along the Continuum of Care in Malawi



Despite progress, there are still many areas of missed opportunity along this continuum of care. Although most women attend antenatal care at least once during their pregnancy (92%), the Malawi 2004 Demographic and Health Survey (DHS) reports that far fewer women have four or more visits (57%), and well over 40% first seek antenatal care when they are 4 – 5 months pregnant[10]. The content of antenatal care services is also often limited, with the 2004 DHS finding gaps in coverage for several parameters of focused antenatal care services. For example, malaria is a leading cause and contributing factor to maternal deaths, however IPTp during pregnancy is only 47%[11], and skilled attendance at birth, critical for both the mother and newborn, is only 56%.

With the eighth highest HIV prevalence in the world, an estimated 14 percent of the adult population and approximately 20% of pregnant women in Malawi have HIV/AIDS[12]. Mother-to-child transmission (MTCT) is the primary mode of acquisition of infection for children and the second most common cause of HIV in the country. Preventing maternal to child transmission (PMTCT) of HIV coverage is currently estimated at only 3% for mothers and 1% for babies, though plans are underway for widespread scale-up.[13] Postnatal care coverage within 2 days of birth is estimated at 57% (100% of facility births—presumed coverage that is likely much lower in reality) and 9% for home births. Furthermore, postnatal care is more common for older women, women residing in urban areas, more educated women, and women in the highest wealth quintile. Exclusive breastfeeding is about 53%, and full diptheria, pertussis, and tetanus (DPT3) coverage is 82%[14].

Government policies and programmes. The Government of Malawi has been developing and implementing several long and medium term strategies to improve maternal, newborn, and child health, which are guided at the policy level by the Malawi Growth and Development Strategy (MGDS), Sector Wide Approach (SWAp) Programme of Work (POW) and EHP, *The Road Map for Accelerating the Reduction of Maternal and Neonatal Morbidity and Mortality*, and a national policy and strategy for ACSD/IMCI and c-IMCI at facility and community levels, respectively.

The EHP establishes a minimum standard of health care provided free-of-charge for all, with key strategies that focus on the major health sector inputs required to produce the health outputs and outcomes identified in the MDGs. In addition, the *Emergency Human Resources Programme*, which expands training capacity by over 50% and provides a 52% taxed salary top-up to retain health workers in eleven key cadres, provides vital support to the successful delivery of the EHP. Through The Road Map, several strategies and targets have been identified for basic emergency obstetric care (BEmOC), neonatal care, and postnatal care. Through ACSD and IMCI, proven high impact interventions are being delivered at both facility and community level to improve access, coverage and outcomes for maternal, neonatal and child health, with the HSA figuring predominantly in the delivery of counseling and care at community level.

Health system. Malawi has 28 districts and is divided into three regions: the Northern with six districts, the Central with nine, and the Southern Region with 13. Districts are administratively subdivided into traditional authorities (TAs), presided over by Chiefs. Each TA is comprised of several villages, which are the smallest administrative units and are led by Village Headmen[15].

Malawi's health system provides roughly 60% of health services through the MOH, and about 37% through the Christian Health Association of Malawi (CHAM) (37%), with the balance provided by the private sector and military and police health facilities. The formal health system's three levels of care include a primary level comprising health centers, health posts, dispensaries, and rural hospitals; a second level made up of district and CHAM hospitals; and a tertiary level including central

hospitals and one private hospital with specialist services. The MOH has embarked on a decentralizing effort, which gives District Health Management Teams (DHMT) the responsibility for planning and budgeting their own resources, with Zonal Officers coordinating the district health care services in their zone.

Community structures and initiatives. Several organizing and supportive structures for health exist at the community level in Malawi, including District, Community, and Village Development Committees, District, Community, and Village AIDS Committees, and Village Health Committees. In all instances, Traditional Authorities, such as Chiefs and Village Headmen, figure prominently at the village level. Save the Children documented experience, including the Institute for Child Health implemented Mai Mwana Project in Malawi suggests that women's groups and community volunteers appear to substantially and positively influence health care seeking behaviors. Although active in most communities, the formal health system does not incorporate TBAs and most are untrained and unequipped. Some TBAs benefit from support through DHMTs and/or local or international NGOs. Policy, whether explicit or implicit, discourages TBA training and deliveries, but this policy is applied differently in districts and communities, with some supportive of TBA training in the absence of practical means to ensure skilled attendance, and others having developed incentives to refer to facilities, whether at district or community-level.

Preparatory Activities and Programme Districts

Preparatory Activities. A number of activities have been ongoing in preparation for this programme. In July and November 2006, UNICEF sponsored a study tour for MOH policy makers and programme managers, respectively, to learn from the experience of community based maternal and newborn care packages in Asia, particularly the home-based neonatal care package developed by the Society for Education, Action and Research in Community Health (SEARCH) in rural Gadchiroli district in India's Maharashtra State. In February 2007, Save the Children sponsored a design workshop meeting with the MOH and UNICEF as primary partners and representatives from the donor, NGO, research, CHAM, and professional society communities to review the problem, evidence, and to develop a package of interventions for the Malawi context. At the conclusion of this meeting, it was agreed that a Task Force would finalize the package of interventions and preparatory work. Task Force meetings have been taking place on a monthly basis since May with representatives from the RHU of the MOH, District Health Offices (District Health Officer and IMCI Coordinators), Save the Children, UNICEF, UNFPA, and WHO. The meetings are formally chaired by Dr. M. Joshua, Acting Director of Clinical Services, and in his absence, Dr. Chisale Mhango, Director, RHU or his designee Mrs. Fannie Kachale.

A formative inquiry focusing on the acceptability of HSAs in executing maternal and newborn care roles and knowledge and practice of maternal and newborn care in the three districts is underway, along with a workload and perceptions (acceptability) analysis of HSAs in the delivery of maternal and newborn home visits. A HFA focusing on availability and quality of maternal and newborn care services, supplies, infrastructure and manpower is being planned and will be conducted in early October.

Programme districts. In consultation with district and international stakeholders, the MOH has selected one district per region for this programme: Chitipa in the Northern Region, Dowa in the Central Region, and Thyolo in the South. Additional parameters used in selection were overall representation/mix in relation to child and neonatal mortality parameters, progress in implementation of ACSD/IMCI, as well as district interest. Key population, demographics, and health system information for the three districts are presented in Table 1 below.

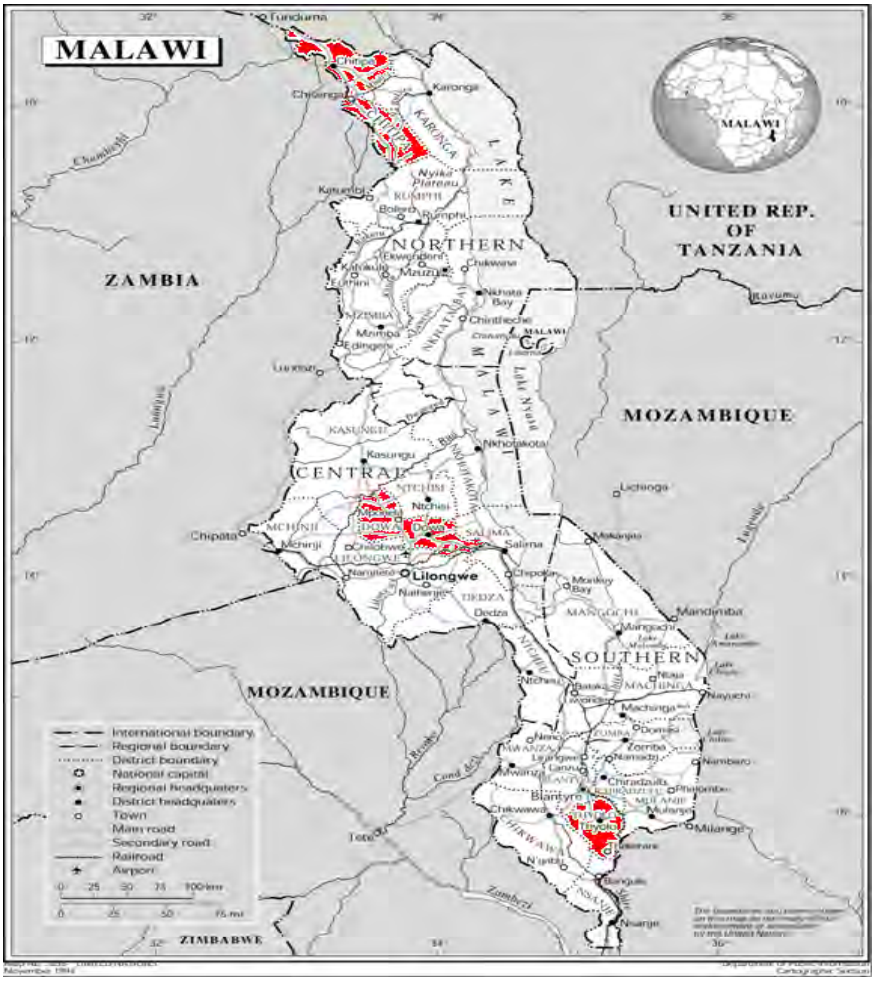


Table 1: District demographic, health, and health systems information

Parameter	Chitipa	Dowa	Thyolo
Demographic and Health			
Population*	165,418	496,964	617,012
Women aged 15-49	38,046	114,302	128,800
Children under age 5	28,121	84,484	104,000
Number of births annually	8,271	24,848	30581
Neonatal Mortality Rate**	31	36	26
Infant Mortality Rate**	52	68	75
Under – 5 Mortality Rate**	99	139	123
Percent of facility deliveries	67	33	30
HIV/AIDS prevalence at ANC clinics	18	13	23
Health System			
Number of Hospitals	1	3	2
Number of Health Centres	7	21	24
Number of HSAs	95	183	261
Ratio of HSAs/population	1:1815	1:2716	1:2454
HSA gap (based on 1:1,000 ratio)	815	314	379
% female HSAs	25	33	35
Number of nurse midwives in district	38	104	185
Number of community nurse midwives	3	8	9

Parameter	Chitipa	Dowa	Thyolo
Number of facilities with at least 2 health workers trained in IMCI	9/9	0/22	4/26
Number of TAs sensitized to ACSD/IMCI	5/5	0/7	0/8
Number of villages sensitized to ACSD/IMCI	375/375	0/1511	0/419

* NSO 2007 population projections/ DHO population figures

** MICS 2006 preliminary report (note: rates are for the 10-year period preceding the survey)

All other figures provided by DHOs in the 3 districts.

Thyolo and Dowa each has approximately half a million inhabitants; and Chitipa, less than 200,000. Together, the three districts represent more than 280,000 women of reproductive age, 216,000 children under the age of five, and more than 61,000 births annually. The health system varies proportionately to the population. Chitipa has one hospital and seven health centers, while in contrast Dowa has three hospitals and 21 health centers. Under-five mortality is highest in Dowa (about 139/1000) and lowest in Chitipa (about 99/1000) - against a national average of 118/1,000. Among the three districts, neonatal mortality is also highest in Dowa, and lowest in Thyolo, where the rate of 26/1,000 is below the national average. Chitipa has the highest percentage of health facility deliveries and is higher than the national average at 67%, while Dowa and Thyolo are well below the national average at 33% and 30%, respectively. Chitipa also has the highest levels of health workers trained in IMCI and TAs and villages sensitized to IMCI, at 100%.

Programme Rationale. Experience, mainly in Asia, suggests that community-based interventions to improve newborn care practices can dramatically improve neonatal survival [16]. More complex community-based packages including home-based treatment of infections have also been tested in pilot settings in Asia and have reported reductions of over 50% in NMR [17]. These studies have not yet been shown to be feasible within an African context or in Malawi. The ACSD/c-IMCI policy and strategic plan envision community based care delivered through these workers for the mother and neonate through home visits and other delivery strategies, primarily by HSAs, with complementary community engagement and mobilization [18]. Therefore, within the prevailing policies for maternal, child, and newborn health, the RHU of the MOH and partners propose a three-year programme of work to develop, implement and evaluate the impact and cost of a scaleable strategy of interventions to improve neonatal outcomes in Malawi. The two-part integrated strategy includes interventions at community level and health system strengthening in the three districts. There is currently much interest and attention to community-based packages for newborn health in Malawi, and varying approaches are being or will be implemented in a number of districts. Thus, this programme of operations research will not only inform implementation and outcomes in the three proposed districts, but also throughout the country where ACSD/c-IMCI is being scaled up.

Programme Design and Methodology

Goal

The goal of this programme is to reduce maternal and neonatal mortality in Malawi. This will be done through the delivery of an integrated package of community-based high impact interventions for mothers and newborns that is delivered by HSAs and linked with community mobilisation and health system strengthening, in the context of the EHP and ACSD/IMCI framework in Malawi.

Objectives

1. To improve access, availability and quality of existing *facility-based maternal and newborn care* in the 3 programme districts. This will be done by strengthening existing maternal, newborn,

and MNCH packages such as FANC, BEmOC and IMCI, and specifically ensuring that high impact interventions to reduce neonatal mortality are initiated or strengthened at facilities, including neonatal resuscitation, KMC, and care of ill babies at referral centres, particularly neonatal sepsis case management.

2. To increase access and availability of *community-based maternal and newborn care*. This will be done by developing and implementing a package, including training and supervision tools, job aids for home visits and related supply kits, for use by HSAs, and implementing this package with links to c-IMCI, FANC, routine postnatal care, nutrition, immunisation and other key preventive care packages within the EHP.

3. To increase *community knowledge and mobilisation* for key maternal and newborn health behaviours and demand for care. This will be done by complementing formal health system initiatives at community and facility level with proven community mobilization approaches to improve maternal and newborn care in the community.

4. To develop, implement, refine and evaluate an algorithm for diagnosis and referral of *neonatal sepsis* by HSAs. This will be informed by the recent learning of other community-based interventions for the treatment and/or referral of neonates with sepsis, and will be developed during Year 1 and implemented in Years 2 and 3 *(a proposal addendum for this component of the programme will be submitted to the NHSRC for approval prior to initiation.*

Target Population

The primary population for this programme is pregnant women of reproductive age (15-49), postnatal mothers, and neonates. With this said, it is recognized that other community and household stakeholders are influential in care-seeking behaviors and practices around maternal and newborn health and will be indirect targets and beneficiaries of the programme interventions, particularly behavior change communication and community mobilization.

Each of the three districts has chosen sites where programme activities will be initiated, which are summarized by population in Table 2. Selection criteria included health facilities with larger catchment areas and health centers with at least two health workers. The total population in the initiation areas is approximately 630,000. Expansion to other areas will take place in a phased manner based on district capacity and HSA performance as the programme gets underway.

Table 2: Population by Health Facility Catchment Area at Initiation

Health Facility	Population
Thyolo	
Thyolo District Hospital	92, 573
Malamulo Rural Hospital	34, 121
Khonjeni Health Centre	30, 899
Bvumbwe Health Centre	66, 270
Thekerani Health Centre	22, 278
Mikolongwe Health Centre	17, 681
Mitengo Health Centre	12, 368
Total	**276, 190**
Dowa	
Dowa District Hospital	38, 497
Chankhungu Health Centre	15, 516
Mponela Rural Hospital	44,111
Mtengowathenga Rural Hospital	49, 035
Madisi Rural Hospital	28, 324
Bowe Health Centre	25, 683
Dzaleka Health Centre	23, 211
Total	**224, 377**
Chitipa	
Chitipa District Hospital	41, 576
Kaseye Community Hospital	13, 010
Misuku Health Centre	22, 656
Kapenda Health Centre	16, 365
Wenya Health Centre	10, 316
Nthalire Health Centre	24, 493
Total	**128, 416**
Grand Total	**628, 983**

Source: Statistics provided by DHOs in respective districts September 2007

Delivery approaches

Objective 1: To improve access, availability and quality of existing *facility-based maternal and newborn care* in the 3 learning districts by strengthening the existing MNCH packages.

Approach: In order to have maximum impact, minimum staffing, equipment, drugs, and services will be required at the facility level to improve quality and address the increased demand that community mobilization and education will create. Through SWAp, RoadMap, and ACSD/IMCI initiatives, as well as additional resource mobilization efforts through and within the Task Force membership, the programme will give early attention to service quality improvements in FANC, PMTCT, delivery including BEmOC and neonatal resuscitation, postnatal care, KMC, and care of ill babies at referral centres, particularly neonatal sepsis case management.

Specific strategies and mechanisms will be elaborated and delineated through joint national and district planning in the long term, and resource mobilization with the donor community and NGO community in MNCH in the short-term, including funding and/or technical support and training though several potential initiatives and donors, including the African Development Bank through *The Road Map*, USAID through ACCESS and Save the Children's Child Survival Programme focused on the newborn, UNICEF through ACSD/IMCI and other health sector support initiatives, WHO, UNFPA, and the Bill & Melinda Gates Foundation through Save the Children.

Illustrative facility-based interventions in the three districts include:

- Formative research in progress and HFAs planned in early October to inform needs assessment and design.
- Improving BEmOC capacity of district hospitals and adherence with the newly updated Reproductive Health (RH) standards, including IPTp of malaria in pregnancy, FANC, and care for sick babies, including case management of sepsis, and supporting the implementation of RH standards in health centres.
- Providing training and mentoring support to establish KMC services at the district level and post-discharge follow up at the health center level. KMC is a highly effective and low-cost method of skin-to-skin care for low birth weight babies, particularly preterm babies, that contributes to thermal regulation, the reduction of infections, better breastfeeding, and improved infant growth. Efforts will be grounded in learning and recommendations from a recent retrospective assessment of KMC conducted in Malawi, which is currently being reviewed and finalized by the MOH RHU and other stakeholders.
- Providing Information, Education, and Communication materials (including those developed through previous or existing programmes as a priority) to all health facilities and supporting the counseling skills improvement of health workers.
- Working with DHMTs to support long-term planning and budgeting for staffing, equipment, supplies and training in key maternal and newborn health areas.

Key activities to support the above will include provision of equipment and supplies, training needs assessments and development of capacity building strategies that emphasize key competencies and use of standard protocols, guidelines, counseling materials and job aides, and monitoring of training delivery and clinical practice, both during training and at six-monthly intervals, with follow-up as needed.

Objective 2: To increase access and availability of *community-based maternal and newborn care.* This will be done by developing and implementing a package, including training and supervision tools, job aids for home visits and related supply kits, for use by HSAs, and implementing this package with links to c-IMCI, FANC, routine postnatal care, nutrition, immunisation and other key preventive care packages within the EHP.

Approach: Within the context of ACSD/IMCI, HSAs will be trained and supported to provide a package of key maternal and newborn health services at the community level. This package will include visits during pregnancy to encourage ANC care-seeking as well as postnatal care visits for the mother and newborn.

Illustrative community-based interventions in the three districts include:

- Formative research and an HSA workload analysis currently underway to inform intervention design.
- A baseline quantitative survey to measure key practice and coverage indicators planned for November 2007
- Ongoing recruitment, training, and placement of HSAs to achieve a ratio of one HSA to 1,000 population in the districts. Given the current gap in this ratio, and as new HSAs will be distributed equitably among all 28 districts, this will be an ongoing endeavor through the life of the programme.
- Existing HSAs that have undergone IMCI/c-IMCI training will be given refresher training if/as needed and based on knowledge and skills assessments. Existing simplified case management protocols for IMCI will be used, as well as materials and checklists for newborn care. Training will emphasize quality case management and interpersonal skills communication and counseling.
- National Training of Trainers (TOT) and Malawi and adaptation of the regional UNICEF community-based maternal and newborn care training package (scheduled for November 2007).
- Adaptation and printing of associated job aides.
- Development and field testing and district level training of HSAs.

HSAs will establish and maintain village registers per national policy and visit pregnant women once each trimester (particularly the second and third) to encourage care-seeking for FANC. Visits will include simple, key messages on the importance of ANC, birth preparedness, essential newborn care practices, danger signs, breastfeeding, malaria in pregnancy, HIV and PMTCT, and encouraging pregnant women to obtain clean birth kits being provided to the health system from UNICEF during ANC visits (location and timing will be informed by formative research). TBAs will be sensitized to immediate newborn care practices in the event of TBA-assisted births. Linkages between and among HSAs, community health nurses and midwives, and TBAs (where active) will be improved through regularly scheduled dialogue and strengthening of referral mechanisms.

A postnatal care schedule and timing will be developed based on formative research early in the programme and will include a minimum of three to four home visits, with timing as close as possible to the first hours and few days after birth to coincide with the period of highest risk for mother and baby. Efforts will be made to encourage facility level care at all times.

Checklists and counseling cards will be developed or adapted for each prenatal and postnatal visit and area of intervention and will be included in the training programme. Referral mechanisms will be put in place between communities and facilities to identify women who have returned home from facility births. The HSA is supervised by the Environmental Health Officer, which is appropriate for current responsibilities. In maternal and newborn health, efforts will be made to ensure appropriate supportive supervision through nurse midwives based in the health centers.

The timing, content, and frequency of visits are being informed by the formative inquiry currently taking place and thus the following is preliminary:

Table 3: Pre- and Post-natal Visitation by HSAs

Pregnant women		
Visit 1 (1st Trimester, if possible)	**Visit 2 (2nd Trimester)**	**Visit 3 (3rd Trimester)**
Counseling on: • Early ANC including IPTp, ITN, TTV • Minor ailments of pregnancy & management / care seeking • Good nutrition • Hygiene	Counseling on: • Early recognition of danger signs and prompt care seeking • Birth preparedness and complication readiness • Subsequent visits for ANC including IPTp, ITN, TT • PMTCT	Counseling on: • Care seeking for skilled attendant at birth • Clean delivery / Clean delivery kit • Early initiation and EBF • Newborn warmth, skin-to-skin, delaying first bath • PMTCT • Family planning
Postnatal Visits		
Day 1 Visit (Home Delivery)	**Day 3 Visit (Both Facility and Home Delivery)**	**Day 7 Visit (Both Facility and Home Delivery)**
Counseling on: • Early initiation and EBF • Attachment and positioning • Warmth /skin to skin / delay first bath • Hygiene, cord care / skin care • Support PMTCT when necessary • Examine newborn & identify: danger signs or low birth weight babies & referr Mother • Early identification of danger signs and refer • Good nutrition • Hygiene • Rest	Counseling on: • Attachment and positioning • EBF • Vaccinations • Hygiene, cord care and skin care • Warmth, skin-to-skin care • Examine newborn & identify: danger signs or low birth weight babies & referr • Encourage postnatal check at a health facility on day 7 Mother • Early identification of danger signs and refer • Good nutrition • Hygiene • Rest	Counseling on: • Attachment and positioning • EBF • Vaccinations • Hygiene, cord care and skin care • Warmth, skin-to-skin • Examine newborn & identify: danger signs or low birth weight babies & refer • Subsequent weekly visits for low birth weight babies Mother • Early identification of danger signs and refer • Good nutrition • Hygiene • Rest • Encourage U/5 and Family planning at 6 weeks

Objective 3: To increase *community knowledge and mobilisation* for key maternal and newborn health behaviours and demand for care.

Approach: Community mobilization and behaviour change communication (BCC) are essential to improved knowledge, awareness, and practices around maternal, newborn, and child health. The entry point for community dialogue will be the Traditional Authority in close collaboration with the Village Development Committee and the Group Village Headmen, and groups of villages that form natural communities will be determined in consultation with the Traditional Authority and taking

into consideration relationships and commonly shared resources. In each community, a team of mobilizers from the IMCI trained Area Working Team or others who are responsible for conducting community dialogues in collaboration with community leaders will initiate dialogue on newborn health issues, seeking to organize natural community structures around efforts to improve knowledge, social norms, and behaviors. The VDC and Village Health Committee (VHC) will be key structures in this process. To the extent possible, HSAs will be actively involved to ensure the HSA is known to and trusted by the community, particularly existing HSAs that do not reside in the community. Community mobilization and behavior change activities will seek to actively involve influential people in the community, including grandparents (*agogos*), village leaders, and men.

Behavior change communication activities will promote prenatal and postnatal care seeking, including birth preparedness and facility delivery, clean delivery, immediate and exclusive breastfeeding, skin-to-skin thermal care and emergency transport in the KMC position, hygienic cord and skin care, and messages to promote care-seeking for IPTp, ITNs, and PMTCT services. Community mobilization activities will be determined by the communities themselves, but may include incentives to encourage facility births, emergency preparedness for transport, establishment of mothers support groups, and efforts to increase the involvement of men in maternal, newborn, and child health issues. The formative research in communities is helping to determine the best methods and approaches for community mobilization, as well as responsibility for facilitating work with these groups over time. It is likely the HSA will play a central role, but in some instances it may be desirable for community volunteers to take on this role. Key startup activities include development of training and facilitation manuals based on the *"Guidelines for Community Initiatives for Reproductive Health"* drafted by RHU, development of associated tools and job aides, a national TOT on the community mobilization approach, and district level training and operationalization of plans.

Objective 4: To develop, refine, and evaluate an algorithm for diagnosis and referral of *neonatal sepsis* by HSAs and first level health workers.

Approach: Infections acquired *in utero*, during delivery, or during the postnatal period are a significant cause of neonatal mortality in Malawi. Several research studies have been undertaken to improve the community identification and management of neonatal sepsis, including the Abhay Bang SEARCH model for Home-based Care in India [19], the MINI trial in Nepal [20], and a newborn care package in Sylhet, Bangladesh [21]. The WHO Young Infant Study [22], the SEARCH algorithm [23], and the Young Infants Clinical Signs Study 2, a multi-centre study of clinical signs predicting severe illness in young infants, are all informing the evidence base for the development of safe and effective community-based management approaches to neonatal sepsis/infection in areas with no or limited access to facility-based care.

In late September 2007, a consultative meeting on sepsis will be held in London to review new evidence and consider future research priorities in this area. Participants will review the evidence from recently completed research studies regarding safety and efficacy/effectiveness of treatment of suspected neonatal sepsis in non-hospital settings, particularly with reference to various service delivery strategies and different antibiotic regimens, and will also review the delivery strategies for providing community based management of neonatal sepsis tested in research studies with regard to the feasibility and acceptability, and identify the ethical issues and common health system challenges in including community-based case management approaches for neonatal sepsis/infection in areas with no or highly limited access to inpatient facility-based care. Collaborating institutions include

USAID, WHO, Save the Children Saving Newborn Lives, Johns Hopkins University/Global Research Activity, and Boston University/Country Research. Two participants from Malawi will attend the meeting: Dr. Charles Mwansambo, Head of Pediatrics, Kamuzu Central Hospital (MOH), and Edward Chigwedere, Newborn Health Research and Evaluation Manager with Save the Children.

Based on the outcomes of the consultative meeting, and with additional technical assistance from global experts working closely in this area, the programme will develop and pilot an approach to sepsis recognition and management at the community level. As noted earlier, an addendum to this proposal will be submitted to the NHSRC for approval of this pilot, which will be initiated at the beginning of Year 2.

Monitoring and Evaluation

Monitoring and evaluating the results of the community-based maternal and newborn care programme in terms of feasibility and changes in behaviours and coverage of care and programmatic cost is an essential component of this programme and will inform learning to maximise accelerated scale up of the package.

Progress and outcomes will be assessed through baseline assessments (formative (qualitative research into household and community practices, population-based survey, Health Facilities Assessment) and an endline survey; routine HMIS information; and monitoring records maintained by the programme. Indicators categorized by improvements in access to and availability of services, quality of services, and community knowledge and acceptance are listed in Appendix 1. Monitoring and evaluation methods will include the following:

Formative research. A qualitative inquiry into household and community knowledge and practices will be conducted through Focus Group Discussions and in-depth interviews. Materials for this exercise were previously submitted to and approved by the NSHRC. The assessment is currently in process in Thyolo and will be completed in all three districts by the end of September. The formative research results will inform the content and design of behavior change strategies and materials, baseline survey questions, and the prenatal and postnatal visitation schedule by gaining a better understanding of current practices, constraints, and perceptions, including stakeholder (mothers, grandmothers, fathers, community leaders) perceptions of the acceptability of HSAs conducting postnatal care visits to the mother and newborn within the first few days following birth and the HSAs workload.

Health Facility Assessment (HFA). A Health Facility Assessment will be conducted at baseline in health centres. The instrument is to be adapted from the BASICS Integrated Health Facility Assessment and WHO Safe Motherhood Needs Assessment tools. The purpose of the HFAs is to obtain baseline estimates of indicators of equipment, supplies, services, and human resources at the facility level and to inform health facility strengthening inputs.

Population-based Knowledge, Practice and Coverage (KPC) baseline and endline surveys. These will be carried out using a two-stage cluster sampling methodology at baseline and Lot Quality Assurance Sampling (LQAS) at endline. The sampled population will be women aged 15-49 with a child 0-11 months of age. Baseline values of indicators related to maternal and caretaker knowledge, practices, and use of health services will be assessed. In addition, the baseline and endline will include a birth history for

the last five years, with an aim to identify more completely women who have had early neonatal deaths. This birth history is standardized from the Malawi DHS. The baseline and endline surveys will be conducted by trained teams of enumerators using the survey questionnaire in Appendix 2, which will be finalized following formative research and pre-testing. The baseline survey will be administered in November 2007, before the rainy season commences, and the endline will be completed at the end of Year 3.

Thirty cluster sampling methodology will be used for the baseline survey. Probability proportionate to size (PPS) of census enumeration areas will be used to select the clusters in each district. In each cluster, 10 households will be selected (for a total of 300 households per district at baseline) to interview women with a child under 12 months of age. As the programme is being phased in over time in the three districts, LQAS will likely be used for the endline survey in Year 3 so that assessments can be made whether health facility catchment areas are performing above or below expectations in terms of programme results. LQAS could also be used to compare the working areas of individual HSAs as additional HSAs will be gradually phased in over the life of the programme. Each "lot" will then be aggregated to obtain programme-wide estimates, analogous to a cluster survey.

Progress and process monitoring. The SWAp has an agreed Monitoring, Evaluation and Research Framework of performance indicators which is harmonized with the MDG indicators. Programme process monitoring will be coordinated with and contribute to this monitoring system and will be used to identify strategies and/or activities that need strengthening through additional refresher training, better supervision and/or adjustments in programme implementation. Information will be regularly reviewed with stakeholders within the Task Force, and plans for adjustments developed and initiated accordingly. Routine data and information collected through the programme will include:

- *HMIS forms and registers:* for data on number of client attendance, capturing trends in client utilization of services, and important service delivery components such as IPTp uptake from facilities, the HMIS registers and forms will be used.
- *Community registers:* For community-based indicators, the community (village) registers will be used as feasible and augmented with additional data collection forms to be used by the HSAs if needed.
- *Training records.* Pre- and post- knowledge and skills tests for HSAs and facility-based personnel providing maternal and newborn health services.
- Facility and health worker records and reports.
- *Periodic qualitative assessments.* These will be used to supplement surveys and routine data collection when and if necessary (for example, key informant interviews may be used to assess birth preparedness in select communities).

Cost analysis. In addition to the above, an economic analysis of the learning programme will be conducted. A modular costing tool is currently being developed by Save the Children's Saving Newborn Lives Programme in partnership with MRC South Africa, and will be introduced in a regional research workshop to be held in Malawi in November 2007. The aim of the tool is to collect comparable cost data in a range of countries in order to inform national/regional/global scale up of integrated newborn care and particularly community-based and postnatal care. Outputs will be programmatic (e.g., costs per postnatal care visit, marginal costs of treatment) as well as economic (to be determined). Methods will include simple Excel spreadsheets to collect data on

capital and recurrent costs either prospectively (ideal) or retrospectively. Optional modular spreadsheets, which will be decided on by districts during the workshop in November, include community and home based care, health system, time and motion data collection for key staff, and user perspectives on costs.

Data collection, quality control, and entry, cleaning and analysis. Save the Children will competitively procure experienced consultants to conduct the HFA and baseline and endline surveys, and has experience selecting and overseeing both qualitative and quantitative surveys in Malawi. Data quality will be assured through a variety of methods, including training and pre-testing of instruments, selected accompanied interviews, comparison of data collected by different teams and interviewers during field work, and ensuring each team of enumerators is led by an experienced supervisor. Completed questionnaires will be checked for accuracy, consistency, and logic in the field before being entered into computers. Before data entry, clerks will be trained on questionnaire content and how to enter the data using pre-designed data entry screens. The data entry screen will be programmed to not allow illegal codes, out-of-range data, or data outside the allowable skip patterns. Data will be double-entered with any discrepancies verified and resolved. Tabulated data will be examined for improbably response patterns and any problems resolved.

In Malawi, any interviews with more than five people must be approved by the National Statistical Office (NSO). This consent will be obtained, in addition to permission from the District Commissioner in each district. Save the Children staff will monitor and oversee baseline and endline KPC surveys, in addition to the HFA. To the extent possible, enumerators will be selected from within the districts being surveyed, and field teams will be led by a district health employee.

The programme will be evaluated through a participatory Midterm Review to assess progress against goals and objectives and provide recommendations for the way forward. A final evaluation led by an external consultant will document programme results and recommendations for sustainability and achieving impact at scale.

Partner Responsibilities and Capacity Strengthening

The MOH and DHOs will implement this programme in partnership with UNICEF, Save the Children, UNFPA, and WHO. The following are the preliminary anticipated responsibilities of each partner, which will continue to evolve according to the needs of the programme.

MOH Reproductive Health Unit

- Convenes monthly Task Force meetings and communicate with relevant MOH Departments and the three District Health Offices
- Oversight of the design of the programme and the package interventions by the Task Force
- Reviews and sponsors NHSRC application
- Reviews and provides input and concurrence with evaluation design and tools
- Coordinates programme training materials and approach at national level
- Leads coordination and representation of dissemination activities at national level

MOH National HSA Training Unit

- Ensures that additional training is compatible with current HSA training and oversees roll out

MOH District Health Management Teams

- Sensitize communities, community leaders and health staff towards maternal, newborn and child health and the purpose of the programme
- Support mobilization of communities for maternal, newborn and child health.
- Responsible for implementation at district level, including HSA and health worker training, necessary refurbishment of facilities, and supportive supervision
- Add selected HMIS indicators to routine district HMIS and ensure these are collected and available as needed

UN Agencies

- Participates in monthly CBMNC Task Force meetings
- Participates in design of evaluation tools
- Based on the findings of the HF assessment, provides supplies for BEmOC, MVA kit equipment, etc., as well as HSA home visit kit
- Based on the formative inquiry, works with MOH, Save the Children, and partners to design BCC messages and community mobilisation approaches and materials
- Works with the districts to support community mobilisation
- Supports MOH by coordinating community-level training linked to c-IMCI and HSAs

Save the Children

- Participates in monthly CBMNC Task Force meetings
- Supports MOH by coordinating application to NHSRC with RHU and links with other partners including
    - Prepares NHSRC submission for formative inquiry (July 2007)
    - Prepares NHSRC package submission (September 2007)
    - Prepares probable submission after one year for more rigorous testing of HSAs providing treatment or first treatment and referral for neonatal sepsis
- Supports MOH by designing the evaluation approach and major tools required for assessment and implementation:
    - Formative inquiry tool
    - Health facility assessment tool
    - Baseline and endline survey tools
    - Costing study
    - Process tracking and documentation
    - Analysis of results
- Participates in development of training materials, job aids, and supervision tools, and assist in the coordination of training
- Assists in reviewing necessary supplies at each level of care
- With RHU, supports the finalization of KMC training and scale-up at national and district levels.

In addition to the above, the United States Agency for International Development (USAID) funded ACCESS program, which begins in October 2007, will be supporting the learning and scaleup of this program in other districts of Malawi. ACCESS will participate in the development of

operational guidelines for community mobilization and message development (BCC), finalization of national and district ToT materials for the community package; and finalization of KMC training and scale-up materials and operational procedures.

Management and Implementation Plan

The illustrative Implementation Plan for this 3-year programme can be found in Appendix 3.

This programme will be implemented within the prevailing district management structure for IMCI. The DHO is responsible for the overall strategic leadership and program management for the implementation of the package within the district. He/she is also responsible for proper coordination with MOH, donors and partners. The DHO will also ensure that District Executive Committees and District Development Committees are oriented and sensitized to the programme and will support the inclusion of the implementation plan of the package in the district IMCI scale up plan of action as appropriate.

The district Environmental Health Officer, Nursing Officer, and IMCI Coordinator will be responsible for liaison and coordination with community based and national level partners, capacity building of the communities, HSA's and other health workers, and will provide mentoring, training, supervision and support. They will also be actively involved in the development of training manuals and guidelines and training of HSA's for the implementation of the package.

HSAs will work in close collaboration with community structures to conduct home visits during pregnancy and after delivery. They will be responsible for liaison and coordination with community based and district level partners and will also be involved in community dialogue, mobilization, and organization and empowerment of individuals, households and communities to adopt improved maternal and newborn care practices.

Dissemination Plan

The MOH RHU and partners involved in the design and implementation of the programme will own the information gathered. Throughout programme implementation, information will be shared at a district, national, regional, and international level, the latter as appropriate. At the district level, results will be shared through regular review meetings. The Task Force will also continue to meet regularly during programme implementation to share progress, results, and to make adjustments in programme plans or approaches as needed. At the national level, results will be shared through periodic dissemination meetings, reports, SWAp reviews, and other relevant forums. Efforts will be made to take advantage of relevant meetings that are scheduled at the national level to economize time and maximize learning. Results may also be presented at relevant regional and international meetings and conferences and/or published in peer reviewed journals. Most essential, however, will be to ensure that the progress and results are shared with relevant stakeholders in Malawi.

Ethical Issues

Partners will ensure that adequate and timely information about the programme is available to national, regional and district health authorities at all times throughout the three years of implementation. The programme will be introduced to Chiefs and Village Headman in the candidate communities; and only those whose leaders consent to participation will be included. The

health facility strengthening interventions will be phased in as part of the District Health Management Team's activities. Participation in baseline and endline surveys and HFAs will be contingent upon consent from interviewees. Provision of background information and conduct of interviews will be in English, Chewa or Tumbuka, depending on participant choice. Background information provided to interviewees will include the name of the person conducting the interview, on whose behalf the person is gathering information, why the survey is being carried out, and the name of a contact person should the participant wish to follow-up after the interview. The baseline and endline informed consent is included in the appendix with the survey instrument. Participants will be given a copy of the information sheet and consent form. Information gathered during the baseline and the end line surveys will be in handled in confidence, and analysis and reporting will not identify individuals. The surveys will involve no risk to participants. Any interviewees found to be exhibiting signs of acute illness or other distress will be referred immediately to a health facility.

Individual written informed consent will not be sought from programme participants that receive the intervention, although households will be free to decline home visits and this will be made clear to them during the first visit.

Budget and Budget Justification

The budget appears in Appendix 4 and represents estimated major line item costs associated with training, monitoring and evaluation, equipment, and documentation and dissemination at a cost of $959,665.

Personnel. The programme will be implemented through the existing personnel structures in the MOH, Save the Children and UN agencies and thus no additional staff are planned or budgeted at this time.

Training. Funds have been budgeted for national and district TOTs and training of HSAs in maternal and newborn health and community mobilization and development of training materials.

Monitoring & Evaluation. Estimated costs are included for a baseline survey and endline survey, health facility assessment, midterm and final evaluation, and periodic monitoring activities. For the monitoring visits in the three districts staff from MOH RHU, Save the Children and UN agencies will need to undertake physical visits to these districts to monitor progress. This activity requires transport, accommodation and food allowances and some funds have been set aside to ensure that this activity is undertaken.

Documentation and Dissemination. The MOH and partners will share progress, refinements and lessons learned from this programme. Sharing of information will take place through meetings, SWAp reviews, reports and presentations in relevant national, regional and international forums.

Travel. Funds have been included for estimated local, regional and national travel associated with programme learning and dissemination.

Equipment. Success of this programme is also dependent on the availability of equipment in facilities in the three districts. Financing is included for equipment needed in the implementation of the programme.

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Appendices

Appendix 1: Programme Monitoring and Evaluation Key Indicators

Measure Level	Illustrative Indicator	Definition	Source	Method	Frequency	Responsible
Increased Use of Key Health Services and Behaviors	% of women attended at least once by a skilled provider during their last pregnancy for antenatal care	**Numerator:** women attended by skilled provider at least once during their last pregnancy **Denominator:** all women (15 – 49 years old) with a live birth in last 12 months	KPC survey report	KPC Survey	BL, EL	Programme staff/ M&E Officer
	% of women attended at least four times during their last pregnancy for antenatal care	**Numerator:** women attended at least four times during their last pregnancy **Denominator:** all women (15 – 49 years old) with a live birth in last 12 months	KPC survey report	KPC Survey	BL, EL	Programme staff/ M&E Officer
	% of women who received at least two doses of TT in last pregnancy	**Numerator:** women who received at least two doses of TT during their last pregnancy **Denominator:** all women (15 – 49 years old) with a live birth in last 12 months	KPC survey report	KPC Survey	BL, EL	Programme staff/ M&E Officer
	% of pregnant women receiving antenatal care who received iron/folate	**Numerator:** pregnant women receiving antenatal care who received iron/folate. **Denominator:** all women (15 – 49 years old) receiving antenatal care with a live birth in last 12 months	KPC survey report HMIS district reports	KPC Survey Facility records (HMIS)	BL,EL Monthly	Programme staff/ M&E Officer DHO/District HMIS officer
	% of pregnant women who received IPTp according to schedule	**Numerator:** pregnant women who received IPTp according to schedule. **Denominator:** all women (15 – 49 years old) with a live birth in last 12 months	KPC survey report	KPC Survey	BL, EL	Programme staff/ M&E Officer
	% of pregnant women sleeping under an ITN	**Numerator:** women who slept under an ITN during last pregnancy. **Denominator:** all women (15 – 49 years old) with a live birth in last 12 months	KPC survey report	KPC	BL, EL	Programme staff/ M&E Officer

Measure Level	Illustrative Indicator	Definition	Source	Method	Frequency	Responsible
	% of pregnant women screened for syphilis	**Numerator:** women who were screened/ tested for syphilis while pregnant. **Denominator:** all women (15 – 49 years old) with a live birth in last 12 months	KPC survey report HMIS district reports	KPC survey Facility records (HMIS)	BL, EL Monthly	Programme staff/ M&E Officer DHO/HMIS officer
	% of women that were attended during last childbirth by skilled personnel	**Numerator:** women who were attended by skilled attendant during last childbirth. **Denominator:** all women (15 – 49 years old) with a live birth in last 12 months	KPC survey report	KPC survey	BL, EL	Programme staff/ M&E Officer
	% of live births delivered in a health care facility	**Numerator:** number of live births delivered in a health facility. **Denominator:** all women (15 – 49 years old) with a live birth in last 12 months	KPC survey report HSA/district reports	KPC survey Village Register	BL/EL, Monthly	Programme staff/ M&E Officer DHO
	% of mothers delivering at home reporting clean cord care (use of clean instrument for cord cutting and tying, clean surface and hand washing)	**Numerator:** Women who delivered at home and reporting clean delivery **Denominator:** all women (15 – 49 years old) with a live birth in last 12 months who delivered at home	KPC survey report	KPC survey	BL, EL	Programme staff/ M&E Officer
	% of pregnant women that know their HIV status	**Numerator:** pregnant women who know their status. **Denominator:** women (15 – 49 years old) with a live birth in last 12 months	KPC survey report PMTCT facility reports	KPC survey Facility records (PMTCT)	BL, EL Monthly	Programme staff/ M&E Officer DHO
	% of women delivering at home who received postnatal care within two days of delivery	**Numerator:** Women who delivered at home and received postnatal care within two days of delivery **Denominator:** Women who delivered at home.	KPC survey report HSA/District reports	KPC survey HSA records	BL, EL Monthly	Programme staff/ M&E Officer DHO

Measure Level	Illustrative Indicator	Definition	Source	Method	Frequency	Responsible
	% of women delivering at home whose newborn received postnatal care within 2 days	**Numerator:** Women who delivered at home and their newborns received postnatal care within two days of delivery **Denominator:** all women (15 – 49 years old) with a live birth in last 12 months who delivered at home.	KPC survey report HSA/District reports	KPC survey HSA records	BL, EL Monthly	Programme staff/ M&E Officer DHO
	% mothers of newborns practicing thermal care (drying, wrapping, delayed bathing)	**Numerator:** Women who reported to have practiced thermal care during last childbirth. **Denominator:** all women (15 – 49 years old) with a live birth in last 12 months	KPC survey report HSA/district reports	KPC survey HSA records	BL, EL Monthly	Programme staff/ M&E Officer DHO
	% mothers practicing improved cord care (clean, dry).	**Numerator:** Women practicing improved cord care **Denominator:** all women (15 – 49 years old) with a live birth in last 12 months	KPC survey report	KPC survey	BL, EL	Programme staff/ M&E Officer
	% of women with a live birth who put the newborn to the breast within 1 hour of birth	**Numerator:** Women who gave birth and put the newborn to the breast within 1 hour of birth. **Denominator:** all women (15 – 49 years old) with a live birth in last 12 months	KPC survey report	KPC survey	BL, EL	Programme staff/ M&E Officer
	% of newborns < 6 months who were exclusively breastfed	**Numerator:** Newborn babies < 6 months who were/are exclusively breastfed. **Denominator:** all women (15 – 49 years old) with a live birth in last 12 months with newborn babies < 6 months old	KPC survey report	KPC survey	BL, EL	Programme staff/ M&E Officer
Increased access to and availability of NBH services	% of district facilities with trained providers providing ANC, skilled delivery including BEmONC, and postnatal care	**Numerator:** District facilities with trained providers providing ANC, skilled delivery including BEmONC, and postnatal care **Denominator:** Total number of district facilities	HFA report District/supervision reports	HFA Supervision visit	BL, EL Monthly	Programme staff/ M&E Officer DHO

Measure Level	Illustrative Indicator	Definition	Source	Method	Frequency	Responsible
	% of district health facilities equipped to provide package of maternal and newborn health services	**Numerator:** District facilities equipped to provide package of maternal and newborn health services **Denominator:** Total number of district facilities	HFA reports District/supervision reports	HFA Supervision visit	BL, EL Monthly	Programme staff/ M&E Officer DHO
	% of health facilities with staff trained in KMC	**Numerator:** Health facilities with staff trained in KMC **Denominator:** Total number of health facilities	HFA reports Training reports/district reports	HFA Training Records	BL, EL 6-monthly	Programme staff/ M&E Officer DHO
Improved quality of NBH services	% of health facilities with 1 or more stock-outs of essential drugs (List) in the last month	**Numerator:** Health facilities with 1 or more stock-outs of essential drugs. **Denominator:** Total number of health facilities in a district	District/supervision reports	Supervision Visits	Monthly	DHO
	% reduction in proportion of health facilities with 1 or more stock-outs of essential injectable antibiotics (LIST) for treatment of neonatal sepsis	**Numerator:** Health facilities with 1 or more stock-outs of injectable antibiotics. **Denominator:** Total number of health facilities	HFA reports District/supervision reports	HFA Supervision Visits	BL, EL Monthly	Programme staff/ M&E Officer DHO
	% of trained health facility providers achieving 75% or better knowledge and skills competency in service package (LIST)	**Numerator:** Trained health facility providers achieving 75% or better knowledge and skills competency in service package. **Denominator:** Trained health facility providers	Training reports District reports	Training records	6-Monthly	DHO
	% of HSAs achieving 75% or better knowledge and skills competency in service package	**Numerator:** HSA achieving 75% or better knowledge and skills competency in service package. **Denominator:** Trained HSAs	Training reports District reports	Training records	6-monthly	DHO

Measure Level	Illustrative Indicator	Definition	Source	Method	Frequency	Responsible
	% of health facility providers correctly managing neonatal illnesses according to IMCI and SCM protocols	**Numerator:** Health facility providers correctly managing neonatal illnesses according to IMCI and SCM protocols. **Denominator:** Total number of health facility providers or those supervised	HFA reports District reports	HFA, Supervision visit.	BL, EL Monthly.	Programme staff/ M&E Officer DHO

Appendix 2: Baseline and end line tools

HH IDENTIFICATION SECTION. Please complete one form for each woman interviewed.		
ID1	District No.	☐☐
ID2	Cluster No.	☐☐☐
ID3	HH No.	☐☐
ID4	Woman Name	_____
ID5	Interview Number	☐☐
ID6	Enumerator Name & No.	_____ ☐☐☐
ID7	Day/Month/Year of interview	☐☐/☐☐/☐☐☐☐
ID8	Result of interview for woman	Completed.....1 Not at home.....2 Refused.....3 Partly completed.....4 Incapacitated.....5 Other (Specify)_____6
ID9	No. of women 15-49 in household with a birth in the last year identified for interview	☐☐
ID10	No. of women interviews completed in household	☐☐

INFORMED CONSENT

Hello. How are you? My name is _____. I am working on behalf of the Reproductive Health Unit of the Ministry of Health in partnership with Save the Children and UNICEF. The Reproductive Health Unit of the Ministry of Health and partners are working in your village to improve the care mothers and newborn babies receive during pregnancy, birth and in the first weeks of life. I would like to get your permission to ask some questions about you and your baby.

Whatever you tell me will be kept strictly confidential and will not be disclosed to any other persons. I will only need about 30 minutes of your time to complete my questions.

Participation is totally voluntary and you can choose not to tell me anything. You can ask to stop the interview at any moment, and refuse to answer any or all questions I have. There is no reward for participating in this discussion. Your participation will however, provide the Ministry of Health and partners important facts and understanding on what goes on during pregnancy, birth and after birth so we can provide better information to pregnant women and people who take care of them and their small babies.

At this time, do you want to ask me anything about what will follow? If you have questions later feel free to contact the Director of the Reproductive Unit, P.O Box 30377, Lilongwe, Malawi.

Are you willing to participate? Yes No

Signature of interviewer: Date: / /
Day / month / year

RESPONDENT AGREES & HAS BEEN GIVEN A FILLED COPY OF CONSENT FORM. 1 GO TO WM1	RESPONDENT DOES NOT AGREE .....2 END INTERVIEW AND THANK THE WOMAN

Woman's Background Section			
#	**Question**	**Options**	**Skip**
WM1	In what month and year were you born?	Date of birth: Month ..... ☐☐ DK Month .....98 Year..... ☐☐☐☐ DK Year.....9998	
WM2	How old were you at your last birthday?	Age in completed years ..... ☐☐	
WM3	Have you ever attended school?	Yes.....1 No 2	 2⇨WM7
WM4	What is the highest level of school you attended: primary, secondary, or higher?	Primary .....1 Secondary .....2 Higher.....3 Never been to school.....4	
WM5	What is the highest Class/Form you completed at that level?	Class/Form ..... ☐☐	
WM6	***Check WM4:*** ☐ ***Secondary or higher ⇨ Next Module.*** ☐ ***Primary or non-standard curriculum ⇨ Continue to WM7***		
WM7	Now I would like you to read this sentence to me. *Show the following sentences to respondent.*	Cannot read at all .....1 Able to read only parts of sentence .....2 Able to read whole sentence.....3 No sentence in required language.....4 (specify language) _____ Blind/mute, visually/speech impaired.....5	

CHICHEWA

1. Mwana akuwerenga bukhu.
2. Chaka chino mvula inabwera mochedwa.

TUMBUKA

1. Mwana wakuberenga buku
2. Chaka chino vula yangwiza mwakuchedwa

ENGLISH

1. The child is reading a book.
2. The rains came late this year.

BIRTH HISTORY MODULE

Now I would like to record the names of all your births in the last five years, whether still alive or not, starting with the most recent one you had. ***Record names of all the births in the last five years in BH1. Record twins and triplets on separate lines.***

BH1		BH2	BH3	BH4	BH5	BH6	BH7	BH8	BH9
						If Alive:		**IF Dead:**	
#	What name was given to your (First/ next) baby?	Was this birth a twin?	Is *(name)* a boy or girl?	In what month and year was *(name)* born? Probe: What is his/her birthday?	Is *(name)* still alive?	How old was *(Name)* at his/her last birthday? *(Record age in completed years)*	Is *(name)* living with you?	How old was (Name) when he/she died? How many months old was *(name)*? *Record days if less than 1 month; months if less than 1 year; or years*	Were there any other live births between *(Name of previous birth and name)?* *If yes, insert.*
01		Sing ..... 1 Mult 2	Boy..... 1 Girl..... 2	Month ☐☐ Year ☐☐☐☐	Yes..... 1 No ....2⇨ BH9	☐☐	Yes .....……1 No……2	Days.....1 ☐☐ Months.....2 ☐☐ Year.....3 ☐☐	
02		Sing ..... 1 Mult 2	Boy..... 1 Girl..... 2	Month ☐☐ Year ☐☐☐☐	Yes..... 1 No ....2⇨ BH9	☐☐	Yes .....1 No…….2	Days.....1 ☐☐ Months.....2 ☐☐ Year.....3 ☐☐	Yes.....1 No..... 2

03		Sing ..... 1 Mult 2	Boy..... 1 Girl..... 2	Month ☐☐ Year ☐☐☐☐	Yes..... 1 No ....2⇨ BH9	☐☐	Yes .....1 No…….2	Days.....1 ☐☐ Months.....2 ☐☐ Year.....3 ☐☐	Yes.....1 No..... 2
04		Sing ..... 1 Mult 2	Boy..... 1 Girl..... 2	Month ☐☐ Year ☐☐☐☐	Yes..... 1 No ....2⇨ BH9	☐☐	Yes .....1 No…….2	Days.....1 ☐☐ Months.....2 ☐☐ Year.....3 ☐☐	Yes.....1 No..... 2
05		Sing ..... 1 Mult 2	Boy..... 1 Girl..... 2	Month ☐☐ Year ☐☐☐☐	Yes..... 1 No ....2⇨ BH9	☐☐	Yes .....1 No…….2	Days.....1 ☐☐ Months.....2 ☐☐ Year.....3 ☐☐	Yes.....1 No..... 2
06		Sing ..... 1 Mult 2	Boy..... 1 Girl..... 2	Month ☐☐ Year ☐☐☐☐	Yes..... 1 No ....2⇨ BH9	☐☐	Yes .....1 No…….2	Days.....1 ☐☐ Months.....2 ☐☐ Year.....3 ☐☐	Yes.....1 No..... 2

07		Sing ..... 1 Mult 2	Boy..... 1 Girl..... 2	Month ☐☐ Year ☐☐☐☐	Yes..... 1 No ....2⇨ BH9	☐☐	Yes .....1 No…….2	Days.....1 ☐☐ Months.....2 ☐☐ Year.....3 ☐☐	Yes.....1 No..... 2
08		Sing ..... 1 Mult 2	Boy..... 1 Girl..... 2	Month ☐☐ Year ☐☐☐☐	Yes..... 1 No ....2⇨ BH9	☐☐	Yes .....1 No…….2	Days.....1 ☐☐ Months.....2 ☐☐ Year.....3 ☐☐	Yes.....1 No..... 2
09		Sing ..... 1 Mult 2	Boy..... 1 Girl..... 2	Month ☐☐ Year ☐☐☐☐	Yes..... 1 No ....2⇨ BH9	☐☐	Yes .....1 No…….2	Days.....1 ☐☐ Months.....2 ☐☐ Year.....3 ☐☐	Yes.....1 No..... 2
10		Sing ..... 1 Mult 2	Boy..... 1 Girl..... 2	Month ☐☐ Year ☐☐☐☐	Yes..... 1 No ....2⇨ BH9	☐☐	Yes .....1 No…….2	Days.....1 ☐☐ Months.....2 ☐☐ Year.....3 ☐☐	Yes.....1 No..... 2

11		Sing ..... 1 Mult 2	Boy..... 1 Girl..... 2	Month ☐☐ Year ☐☐☐☐	Yes..... 1 No ....2⇨ BH9	☐☐	Yes .....1 No…….2	Days.....1 ☐☐ Months.....2 ☐☐ Year.....3 ☐☐	Yes.....1 No..... 2
12		Sing ..... 1 Mult 2	Boy..... 1 Girl..... 2	Month ☐☐ Year ☐☐☐☐	Yes..... 1 No ....2⇨ BH9	☐☐	Yes .....1 No…….2	Days.....1 ☐☐ Months.....2 ☐☐ Year.....3 ☐☐	Yes.....1 No..... 2
13		Sing ..... 1 Mult 2	Boy..... 1 Girl..... 2	Month ☐☐ Year ☐☐☐☐	Yes..... 1 No ....2⇨ BH9	☐☐	Yes .....1 No…….2	Days.....1 ☐☐ Months.....2 ☐☐ Year.....3 ☐☐	Yes.....1 No..... 2

STOP RECORDING BIRTHS AFTER FIVE YEARS.

Prenatal Section			
#	**Question**	**Options**	**Skip**
PN1	What are the danger signs (or symptoms) during pregnancy indicating the need to seek health care? *(Multiple Responses)*	Fever ..... 1 Shortness of breath..... 2 Excessive bleeding..... 3 Convulsions ..... 4 Weakness..... 5 Swelling of hands and feet..... 6 Headache..... 7 Severe abdominal pain ..... 8 Dizziness ..... 9 Excessive vomiting..... 10 Blurred vision ..... 11 Less/no fetal movement ..... 12 Other _____ ..... 96 (Specify) Don't Know..... 98	
PN2	Did you see anyone for antenatal care for your pregnancy with *[name]*? *If yes:* Whom did you see? Anyone else? *Note: In the case of a multiple birth, choose one child at random.* *Probe for the type of persons seen and circle all answers given.*	<u>Health professional</u>: Doctor/Clinical Officer..... 1 Nurse/Midwife..... 2 <u>Other person:</u> Traditional birth attendant..... 3 Community health worker ..... 4 Relative/friend..... 5 Other (*specify*) _____ 6 No one..... 7	7⇨PN13
PN3	How many times did you receive antenatal care during this pregnancy?	No. of times ..... ☐☐ DK..... 98	
PN4	As part of your antenatal care during this pregnancy, were you given or did you buy any iron folate tablets? *Show Tablets.*	Yes..... 1 No..... 2 Don't Know..... 8	2⇨PN6 8⇨PN6

PN5	During the whole pregnancy, for how many days did you take the tablets? *If the answer is not numeric, probe for approximate number of days.*	No. of days..... ☐☐☐ DK..... 998			
PN6	During any of your antenatal care visits were you told about the signs of pregnancy complications?	Yes..... 1 No..... 2 Don't Know..... 8			
PN7	As part of your antenatal care during this pregnancy, were any of the following done at least once?		Y	N	
PN7A	Were you weighted?	Weight	1	2	
PN7B	Was your blood pressure measured?	Blood pressure	1	2	
PN7C	Did you give a urine sample?	Urine sample	1	2	
PN7D	Did you give a blood sample?	Blood sample	1	2	
PN8	During (any of) your antenatal care visit(s), were you told about the signs of pregnancy complications?	Yes..... 1 No..... 2 Don't Know..... 8			
PN9	Were you told where to go if you had any of these complications?	Yes..... 1 No..... 2 Don't Know..... 8			
PN10	During any of the antenatal visits for the pregnancy, were you given any information or counseled about AIDS or the AIDS virus?	Yes..... 1 No..... 2 DK..... 8			
PN11	I don't want to know the results, but were you tested for HIV/AIDS as part of your antenatal care?	Yes..... 1 No..... 2 DK..... 8			 2⇨PN13 8⇨PN13
PN12	I don't want to know the results, but did you get the results of the test?	Yes..... 1 No..... 2 DK..... 8			
PN13	During this pregnancy, did you take any medicine in order to prevent you from getting malaria?	Yes..... 1 No..... 2 DK..... 8			 2⇨PN17 8⇨PN17
PN14	Which medicines did you take to prevent malaria? *Circle all medicines taken. If type of medicine is not determined, show typical anti-malarials to the respondent.*	SP/Fansidar .....1 Chloroquine .....2 Others (Specify) _____ 3 DK.....8			
PN15	*Check PN14 for medicine taken:*				

	☐ *SP/Fansidar taken ⇨ Continue to PN16.* ☐ *SP/Fansidar not taken ⇨ PN17.*		
PN16	How many times did you take SP/Fansidar during this pregnancy to prevent malaria?	Number of times…….. ☐☐	
PN17	Did you sleep under a mosquito net last night?	Yes……1 No…….2	
PN18	*SKIP THIS QUESTION IF BABY DIED* (BH5) Did [name] sleep under a mosquito net last night?	Yes……1 No…….2	

Tetanus Toxoid (TT) Module

#	Question	Options	Skip
TT1	Do you have a card or other document with your own immunizations listed? Can I see it? *If a card is presented, use it to assist with answers to the following questions.*	Yes (card seen)…….1 Yes (card not seen)……...2 No……3 DK……...8	
TT2	When you were pregnant with your last child [name of baby if living], did you receive any injection to prevent the baby from getting tetanus, which is convulsions after birth (an anti-tetanus shot, an injection at the top of the arm or shoulder)?	Yes……..1 No……...2 DK…….8	2⇨TT5 8⇨TT5
TT3	*If yes:* How many times did you receive this anti-tetanus injection during your last pregnancy?	No. of times…….. ☐☐ DK……98	98⇨TT5
TT4	*How many tetanus injections during last pregnancy were reported in TT3?*	At least 2 during last preg……1 Fewer than 2 during last preg…….2	1 ⇨ TT5

TT5	At any time before this pregnancy, did you receive any tetanus injections, either to protect yourself or another baby?[1]	Yes……1 No……2 DK……...8	 2⇨IP1 8⇨IP1
TT6	How many times did you receive it?	No. of times…… ☐☐ DK ……..9998	
TT7	In what month and year did you receive the last anti-tetanus injection before that last pregnancy? *Skip to next module only if year of injection is given. Otherwise, continue with TT8.*	Month……. ☐☐ DK month……98 Year…….. ☐☐☐☐ DK year……9998	 ⇨ IP1 ⇨ TT8
TT8	How many years ago did you receive that tetanus injection?	Years ago…….. ☐☐ DK …….9998	

INTRAPARTUM SECTION			
IP1	What are the symptoms during childbirth indicating the need to seek immediate health care? *(Multiple Responses)*	Heavy bleeding.....1 Preterm rupture of membranes .....2 Malpresentation (breech, not head first) .....3 Prolonged labour .....4 Placenta not delivered in 30 min/ Delay in delivering placenta .....5 Baby not breathing .....6 Other _____ .....7 (Specify)	

[1] Analysis Note: Full protection is considered to be provided to an infant if the mother received two injections of TT during the pregnancy of her last birth, or two or more injections (the last within 3 years of the last live birth), or three or more injections (the last within 5 years of the last birth), or four or more injections (the last within ten years of the last live birth), or five or more injections prior to the last birth.

		Don't know 88	
IP2	How far from your home is the closest place where someone could give birth?	Less than 1 kilometer .....1 1-5 kilometers.....2 5-10 kilometers.....3 10-15 kilometers.....4 15 or more kilometers 5	
IP3	How long would it take you to reach there?	Less than 30 minutes.....1 30-60 minutes.....2 1-2 hours .....3 More than 2 hours 4	
IP4	Who assisted with the delivery of (*Name*)? Anyone else? *Probe for the type of person assisting and circle all answers given.*	<u>Health professional</u>: Doctor/Clinical Officer……1 Nurse/Midwife……2 <u>Other person:</u> Traditional birth attendant……3 Community health worker……4 Relative/friend……..5 Other (*specify*)……6 No one……8	
IP5	Where did you give birth to (*Name*)? *If source is a public or private sector facility, write the name of the place below. Probe to identify the type of source and circle the appropriate code.* (Name of place)_____	<u>Home</u> Your home……1 Other home……...2 <u>Public sector</u> Govt. hospital……..3 Govt. clinic/health center……4 CHAM……5 Other public (*specify*)_____6 <u>Private Medical Sector</u> Private hospital……..7 Private clinic……..8 Private maternity home……..9 Other private medical (*specify*)_____10 Other (*specify*)_____	⇨IP14 ⇨IP14
IP6	How long after *(NAME)* was delivered did you stay there? If less than one day, record hours. If less than one week, record days.	Hours.....1 ☐☐	

		Days.....1 ☐☐ Weeks.....2 ☐☐ Don't know……88	
IP7	Was *(NAME)* delivered by caesarean section?	Yes……..1 No……..2	
IP8	Before you were discharged after *(NAME)* was born, did any health care provider check on your health?	Yes……..1 No……2	⇨IP11
IP9	How long after delivery did the first check take place? If less than one day, record hours. If less than one week, record days.	Hours.....1 ☐☐ Days.....1 ☐☐ Weeks.....2 ☐☐ Don't know…….88	
IP10	Who checked on your health at that time before discharge? *Probe for most qualified person.*	<u>Health professional</u>: Doctor/Clinical Officer……1 Nurse/Midwife…….2 <u>Other person:</u> Traditional birth attendant……3 Community health worker……4 Other (*specify*)_____5	
IP11	After you were discharged, did any health care provider or a traditional birth attendant check on your health?	Yes……1 No……2	
IP12	Who checked on your health at that time after discharge? *Probe for most qualified person.*	<u>Health professional</u>: Doctor/Clinical Officer……1 Nurse/Midwife…….2 <u>Other person:</u> Traditional birth attendant……3 Community health worker……4 Other (*specify*)……5	

IP13	How many times did you receive care in the first two months after *(NAME)* was born?	No. of times……... ☐☐ DK……98	⇨IP18 ⇨IP18
IP14	Why didn't you deliver in a health facility? *Probe:* Any other reason? *(Multiple responses.)*	Cost too much……1 Facility not open……2 Too far/no transport……..3 Poor quality at facility……4 No female provider at facility……5 Husband/family did not allow……6 Security concerns……7 Not necessary……8 Not customary……9 Other (*specify*)_____96	
IP15	After (Name) was born, did any health care provider or a traditional birth attendant check on your health?	Yes……1 No……..2	
IP16A	Who checked on your health at that time? *Probe for most qualified person.*	<u>Health professional</u>: Doctor/Clinical Officer……..1 Nurse/Midwife……..2 <u>Other person:</u> Traditional birth attendant……3 Community health worker……..4 Other (*specify*)……..5	
IP16B	How long after delivery did the first check take place? If less than one day, record hours. If less than one week, record days.	Hours.....1 ☐☐ Days.....1 ☐☐ Weeks.....2 ☐☐ Don't know……..88	
IP17	How many times did you receive care in the first two months after *(NAME)* was born?	No. of times..... ☐ DK……98	
IP18	What instrument was used to cut the cord?	New blade.....1 Used razor blade.....2 Scissors.....3	

		Knife.....4 Reed.....5 Other _____.....96 **(Specify)** Don't know	
IP19	Was anything put on *(NAME)'s* cord after it was cut?	Yes .....1 No: .....2 Don't know 9	 2⇨IP21 9⇨IP21
IP20	What was put on *(NAME)'s* cord after it was cut?	Spirits.....1 _____.....2 _____.....3 Other _____.....96 **(Specify)** Don't know 98	
IP21	Was *(NAME)* dried (wiped) immediately after birth before the placenta was delivered?	Yes .....1 No.....2 Don't know 8	
IP22	Was *(NAME)* wrapped in a warm cloth or blanket immediately after birth before the placenta was delivered?	Yes .....1 No.....2 Don't know 8	

Newborn Section			
NB1	How long after birth was *(NAME)* bathed?	Hours after delivery.....1 ☐☐ Days after delivery.....2 ☐☐ Weeks after delivery .....3 ☐☐ Don't Know.....98	
NB2	In the two months after *(Name)* was born, did any health	Yes……1	

	care provider or a traditional birth attendant check on his/her health?	No……..2 DK……8	2⇨NB7 8⇨NB7
NB3	How many hours, days or weeks after the birth of (Name) did the first check take place? If less than one day, record hours. If than on week, record days.	Hours after birth.....1 ☐☐ Days after birth.....2 ☐☐ Weeks after birth .....3 ☐☐ Don't Know 998	
NB4	Who checked on (Name)'s health at that time? *Probe for most qualified person.*	<u>Health professional</u>: Doctor/Clinical Officer……1 Nurse/Midwife…….2 <u>Other person:</u> Traditional birth attendant…….3 Community health worker…….4 Other (*specify*)_____96	
NB5	Where did this first check of (Name) take place? Probe to identify the type of source and circle the appropriate code. If unable to determine if a hospital, health centre or clinic is public or private medical, write the name of the place. _____ (Name of the place)	<u>Home</u> Your home……...1 Other home……..2 <u>Public sector</u> Govt. hospital……3 Govt. clinic/health center……..4 CHAM……...5 Other public (*specify*) _____6 <u>Private Medical Sector</u> Private hospital…….7 Private clinic…….8 Private maternity home…….9 Other private medical (*specify*)_____10 Other (*specify*)_____11	

NB6	How many times did (NAME) receive care in the first two months after he/she was born?	No. of times…….. ☐☐ DK ……..98	
NB7	When your last child (Name) was born, was he/she very large, larger than average, average, smaller than average, or very small?	Very large…….1 Larger than average……..2 Average……3 Smaller than average…….4 Very small……5 DK……..8	
NB8	Was (Name) weighed at birth?	Yes……...1 No……2 DK……8	 2⇨NB10 8⇨NB10
NB9	How much did (Name) weigh? *Record weight from health card, if available.*	Card……..1 (Kg.) ☐.☐☐☐ Recall……...2 (Kg.) ☐.☐☐☐ Don't Know	
NB10	What are the signs and symptoms for postpartum mothers that require immediate medical attention? *(Multiple Responses)*	Fever/chills.....1 Excessive bleeding.....2 Foul smelling discharge.....3 Convulsions.....4 Abdominal pain.....5 Difficulty breathing .....6 Urine dribbling.....7 Pain in the perineum .....8 Feeling weak/faint.....9 Swollen or tender breasts.....10 Other _____.....96 (specify) Don't know.....98	
NB11	What are the symptoms of the baby within 7 days after birth indicating the need to seek immediate health care? *(Multiple Responses)*	Convulsions.....1 Little/no movement or cry.....2 Poor sucking or feeding.....3 Difficult or fast breathing.....4 Fever.....5 Baby feels cold .....6 Baby very small .....7 Bleeding.....8	

		Too much crying.....9 Red/discharge around cord.....10 Red swollen eyes, discharge.....11 Failure to pass urine .....12 Failure to pass stool .....13 Other _____.....96 (specify) Don't know 98			
NB12	Did you ever breastfeed (Name)?	Yes……1 No……..2 No, baby died…….3			2⇨NB18 3⇨ END
NB13	How long after birth did you first put (Name) to the breast? If less than 1 hour, record '00' hours. If less than 24 hours, record hours. Otherwise, record days.	Immediately……..00 Hours……1 ☐☐ Days……..2 ☐☐ Don't know/remember……98			
NB14	During the first three or four days after delivery, before your regular milk began flowing, did you give (NAME) first milk (colostrum) that came from your breasts?	Yes .....1 No .....2 Don't Know 8			
NB15	In the first three days after delivery, was (NAME) given anything to drink other than breast milk?	Yes .....1 No .....2 Don't Know 8			
NB16	What did you give to *(NAME)* to eat/drink during last 24 hours? *(ASK SEPERATLY FOR EACH ITEM)*		**Yes**	**No**	
NB17	Did you give water?	Water	1	2	
NB17A	Did you give fruit juice/sugar water?	Fruit juice/sugar water	1	2	

NB17B	Baby food (Baby formula)	Baby food (Baby formula)	1	2	
NB17C	Cow/goat milk	Cow/goat milk	1	2	
NB17D	Rice or cereal water	Rice or cereal water	1	2	
NB17E	Banana/ripe papaya/Mango	Banana/ripepapaya/Mango	1	2	
NB17F	Egg	Egg	1	2	
NB17G	Green vegetable	Green vegetable	1	2	
NB17H	Rice/bread?	Rice/bread	1	2	
NB17I	Meat/Fish?	Meat/Fish	1	2	
NB17J	Biscuit	Biscuit	1	2	
NB17K	Other _____ (specify)	Other _____ (specify)	1	2	
NB17L	Did you give water?	Water	1	2	
NB17 M	Did you give fruit juice/sugar water	Fruit juice/sugar water	1	2	
NB18	Do you have a card where (NAME'S) vaccinations are written down? *If yes,* May I see it please?	Yes, seen ..... 1 Yes, not seen ..... 2 No card 3			
NB19	Did you ever have a vaccination card for (NAME)?	Yes ..... 1 No 2			
NB20	*Copy vaccination date for BCG vaccination from the card.*	☐☐-☐☐-☐☐ Day Month Year			
NB21	Has (NAME) received any vaccinations that are not recorded on this card, including vaccinations received in a national immunization day campaign?	Yes ..... 1 No 2			

		Don't Know 3	
NB22	Did (NAME) ever receive any vaccinations to prevent him/her from getting diseases, including vaccinations received in a national immunization campaign?	Yes .....1 No.....2 Don't know 3	
NB23	Please tell me if (NAME) received a BCG vaccination against tuberculosis, that is, an injection in the arm or shoulder that usually causes a scar?	Yes .....1 No .....2 Don't Know 3	

PLEASE THANK THE WOMAN FOR HER TIME.

Appendix 3: Illustrative 3 Year Workplan

	Year 1 (October 2007-September 2008)				Year 2 (October 2008-September 2009)				Year 3 (October 2009-September 2010)			
Activity	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**
Taskforce planning meetings	X	X	X	X	X	X	X	X	X	X	X	X
Development of baseline survey instruments	X											
Conduct of baseline survey	X											
Development of Health Facility assessment tools & and conduct of HFA	X											
Development of costing methodology & tools	X											
Refinement of monitoring strategy & pregnancy, birth & death registry	X											
Adaptation of HSA training curriculum, manual	X											
Procurement of health facility supplies	X											
Hiring of HSAs	X											
TOT for HSA training	X											
Development/adaptation of facilitation manual for community mobilization & BCC including testing of BCC material		X										

	Year 1 (October 2007-September 2008)				Year 2 (October 2008-September 2009)				Year 3 (October 2009-September 2010)			
Development/adaptation of facility training protocols, job aids and training strategy & supervision tools		X										
TOT training for facility personnel		X										
Improvement/provision of facility-based interventions (e.g., adherence to reproductive health standards, FANC, KMC services, etc.)		X										
Training of HSAs		X										
Training of facility personnel		X										
Training of DHO personnel in community mobilization		X										
Working with DHMT in planning, budgeting for staff equipment, supplies & training in key maternal & newborn areas		X			X							
Development, refinement & evaluation of algorithm for diagnosis & referral of neonatal sepsis by HSAs		X	X	X	X	X	X					

	Year 1 (October 2007-September 2008)				Year 2 (October 2008-September 2009)				Year 3 (October 2009-September 2010)			
Sensitizing communities through TAs, village headmen, village development committees, etc., on CBMNC programme		X										
Rollout out of interventions			X	X								
Monitoring of progress, process and costs			X	X	X	X	X	X	X	X		
Participatory midterm review (MTR)							X					
Analysis, documentation, & dissemination of lessons learnt				X				X				X
Refinement of interventions & documentation				X	X	X	X		X	X	X	
Dissemination of program learning and associated advocacy				X	X	X	X	X	X	X	X	X
Endline survey											X	
Final Evaluation											X	
Resource mobilization and support for expansion to other districts/sites in the districts.				X	X	X					X	X

Appendix 4: Budget

	Year 1	Year 2	Year 3	Total
PERSONNEL (Activities/responsibilities will be co-opted into existing personnel structures of MoH, Save the Children & UNICEF)	-	-	-	-
TRAINING				
TOT for HSAs	21,300	15,975		37,275
Training manuals & job aids	30,000			30,000
Training of HSAs	144,000			144,000
Training of district personnel in community mobilization	46,100	38,300	46,100	230,500
MONITORING AND EVALUATION				
Baseline & Endline Survey	75,000		100,000	175,000
Health Facility Assessment	45,000			45,000
Printing for Surveys	1,000		1,250	2,250
Task force meetings	3,900	2,000	2,250	8,150
Monitoring visits with districts (1/month * 3 districts)	3,600	3,800	3,800	11,200
Midterm and Final Evaluation		8,000	10,000	18,000
DOCUMENTATION & DISSEMINATION		5,000	15,000	20,000
				-
TRAVEL				-
International			10,000	10,000
Regional	7,050	2,500		9,550
Local	35,350	35,000	35,000	105,350
				-
EQUIPMENT				-
Implementation equipment	113,390			113,390
				-
				-
Total Budget	**525,690**	**210,575**	**223,400**	**959,665**

Annex 4
Formative Research Report

THE COMMUNITY BASED MATERNAL NEWBORN CARE LEARNING PROGRAMME

~DRAFT~

Formative Study Report

October 2007

INVESTIGATORS

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ACRONYMS

CBMNC	Community Based Maternal and Neonatal Care
DEHO	District Environmental Health Officer
DHO	District Health Officer
DNO	District Nursing Officer
EHP	Essential Health Package
FGD	Focus Group Discussion
HIV	Human immunodeficiency virus
HSA	Health Surveillance Assistant
IMCI	Integrated Management of Childhood Illnesses
LBW	Low Birth Weight
MDG	Millennium Development Goals
MNCH	Maternal and Newborn Care Health
MoH	Ministry of Health
PMTCT	Prevention of Mother to Child Transmission
RHU	Reproductive Health Unit
SWAP	Sector Wider Approach
TBA	Traditional Birth Attendant
TH	Traditional Healer
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Emergency Fund
VAC	Village Aids Committee
VC	Village Counselor
VDC	Village Development Committee
VHC	Village Health Committee
WHO	World Health Organization

EXECUTIVE SUMMARY

The Reproductive Health Unit of the Ministry of Health in partnership with Save the Children Malawi Country office, UNICEF, WHO, UNFPA and other stakeholders, commissioned a formative study whose aim was to inform the development of an integrated community based maternal and newborn care intervention package. This package would be delivered by HSAs linked with community mobilization and health system strengthening, within the ACSD / IMCI and EHP framework of Malawi first in the three learning districts of Chitipa, Dowa and Thyolo.

The objectives of this formative research were:

- To establish practices related to maternal and neonatal care in the 3 learning districts (i.e. Chitipa, Dowa and Thyolo districts).
- To assess gaps in knowledge and practices of essential maternal and neonatal care and how these gaps can be improved.
- To establish acceptability of HSAs in maternal and neonatal care activities and the role they can play within maternal and newborn health.
- To assess distribution of HSAs in relation to population and service catchment areas in-order to establish the workload of these HSAs
- To conduct a mapping exercise that would establish villages' population densities and proximity to health posts / centres and distribution of HSAs in relation to population and service catchment areas.

To address the formative research objectives, data were collected in the three learning districts – Chitipa, Thyolo and Dowa. Qualitative methods in the form of in-depth interviews and focus group discussions (FGD) were used with purposively selected sample groups of key informants and community members respectively. Secondary data in the form of project documents and records from the DEHOs' offices from each district were also utilized.

A total of 99 in-depth interviews, with various categories of key informants such as DHOs, DNOs, DEHOs, HSAs, Chiefs, Midwives, THs, VCs and TBAs, were conducted. In all 36 FGDs involving 8-12 participants were conducted.

SUMMARY OF MAJOR FINDINGS

The findings of this formative research have been conformed into five major categories as follows:

- Antenatal Care Information
- Delivery practices information
- Postnatal Practices information
- Community Practices and HSAs Information
- Mapping Information

ANTENATAL CARE INFORMATION

Under this section the findings are categorised into ten (10) subsections based on their relevance to antenatal care.

Necessity of Seeking Antenatal care

This formative research sought, among other things, to establish whether pregnant women and other members of the community felt it was necessary seeking antenatal care. The following are the major findings:

- All participants approved that seeking antenatal care was necessary and very important.
- Majority of pregnant women make effort at some point to seek antenatal care.
- It is very clear that some women never seek antenatal care at all while many others seek care very late.
- Traditional birth attendants reported that they sometimes assist women who never went to the health centre or to the TBA until they were in labour.
- Although some do not seek care, they believe it is necessary to do so. Different reasons account for the women's laxity to seek care.

Seeking Antenatal Care

The study also looked at practices relating to seeking antenatal care by pregnant mothers and where the care was sought. The formative research found the following:

- Though some women don't seek antenatal care, the majority of pregnant women seek some form of care during pregnancy.
- Most women seek care from both traditional birth attendants (TBA) and health facilities.
- Men indicated that some women seek care from the traditional healers and this option is taken when the health condition of the pregnant woman is poor.
- Sometimes women attend antenatal clinic at the TBA but would choose to deliver at the health facility, while some would attend at a health facility but choose to deliver at the TBA.
- Respondents who felt that many women seek care at health facilities said health centres were preferred because they provide better care.

- They compared the quality of services provided at the TBA and the health facility and said that TBAs did not treat women properly.
- The atmosphere at the TBAs was regarded friendly by those who preferred going to TBAs

Time of Seeking Antenatal Care

Also of interest to this research was the time pregnant mothers considered appropriate to seek antenatal care and the prevailing influencing factors. The following are the major findings:

- Women start to seek care at different phases of pregnancy
- Majority of respondents feel time for seeking care varies between 5 - 7 months
- Many first seek care at 4 months of pregnancy
- Some reported that care is sought as early as three months especially if they are having problems
- Few said as soon as the woman falls pregnant.
- Majority said that care is sought about 5 times during the entire antenatal period. This care may include the normal antenatal health facility of TBA visits as well as visits to carers looking for specific assistance for certain problems
- Number of times antenatal care is sought is usually dependent on the advice from the health workers and also on the problems that the pregnant woman is facing.

Care Provided

The obviously are some differences between care provided by TBAs and what is provided at a health facility.

Care provided by Traditional Birth Attendants

- Women are counselled on how to take care of themselves when pregnant especially on what herbs to take or avoid. They are instructed to avoid taking herbs that are meant to cure conditions such as *mwanamphepo*.
- Women are referred to health centres for HIV testing and get PMTCT drugs should they be HIV positive.
- Women are advised to go to the hospital to get iron supplements if they happen to be HIV positive[1].
- Weighing (done by trained TBAs).
- Examine if the child is in good position.
- Determine the sex of the child.
- Tie the birth canal to prevent miscarriage.
- Change the position of the child if it is breached

[1] Usually TBAs ask women to go for HIV test. Women would report to the TBA about the results or would bring the pill that the women would need to take during delivery to prevent infecting the child. The pill alerts the TBAs that the woman is positive and normally recommends that the women should go to the hospital to get iron supplements

Care provided at Health facility

- Conduct examinations and weighing.
- Provide supplements.
- Tested for HIV.
- Provide fansidar and iron tablets.
- Provide TTV.
- Check baby's position if the baby is too big they refer them to the district hospital to deliver through operation.
- Refer woman who are too weak or sick (malnourished) to the nutrition department.
- Advise women how to live with HIV.
- If HIV positive mothers are given treatment, and aadvised on how they can breastfeed a baby in such a way that it is protected

Pregnancy Danger Signs

Respondents presented a variety of danger signs during pregnancy which included the following:

- Convulsions
- Vaginal bleeding
- Pale eyes
- Vomiting
- Shortness of breath
- Malaria
- Swelling of hands and legs
- Anaemia
- Backaches
- Slimy vaginal discharge
- Abdominal pains

Perceived Causes of Danger Signs

The respondents suggested various factors as the perceived causes of danger signs during pregnancy. The following suggestions were made:

- Husbands having sexual relations with other women
- Dirty household
- Poor nutrition
- Immature implantation
- Menstruating women adding salt to relish
- Mosquito bites
- Taking traditional herbs
- Compromised immunity

Care Seeking for Pregnancy danger Signs

The formative research also aimed at establishing care seeking behaviour in face of danger signs during pregnancy. The following was reported:

- When a pregnant woman experience danger signs, they would usually inform the grandmother or husband and then seek help from an appropriate source.
- Care is sought depending on the nature of the problem.
- The choice or decision on where to seek care would also depend on the ease to access that help.
- Many respondents seemed to know more about the care the women could get from the TBA compared to the health facility.

Preparation for Birth
The study also established what pregnant mothers and families do in preparation for births. The following were suggested:

- Source a plastic paper to lie on to avoid infection
- Purchase razor blades
- Source a clean cloth
- Put aside money to be used for transport

Prevention of Mother to Child Transmission (PMTCT)
The formative research also aimed at assessing the level of awareness and ways to improve women's access to PMTCT. The following were suggested:

- Majority of the women said that they knew about PMTCT while a few were not very sure what it meant or what it was.
- Participants proposed raising awareness on the advantages of PMTCT as one way to encourage women to go for PMTCT.

Family Members' Role during Pregnancy
It was established that the role of family members differ depending on the relationship to the pregnant woman. It was observed that mostly it is the husband, grandmother/mother and other relations that provide assistance. The following roles were mentioned:
Husband
- Help with domestic work
- Remind the woman to go the clinic
- Provide finances for buying the food the woman needs
- Assist in preparation for place of delivery
- Escort the wife to the hospital
- Support the woman to test for HIV

Grandmother/ mother
- Advise the woman on various things related with pregnancy[2]
- Help with domestic work

[2] Women would be advised on what to do when they notice strange things such as discharges, or the heart beating in a strange way, the do's and don'ts such as not to stand for a long period, not to sit with their legs folded or to wear very tight clothes to avoid the child being suffocated.

- Remind the woman to go to the clinic
- Assist with preparations for place of delivery

Other Relatives (Sisters etc)
- Help with domestic work
- Remind the woman to go the clinic

DELIVERY PRACTICES INFORMATION

The formative research also focused on establishing the delivery practices and factors that influence these practices in the communities.

Place of Delivery
It was established that pregnant mothers deliver with either the TBA or at a health facility depending on the prevailing circumstances.

The findings indicate that the majority of the pregnant women deliver at the TBAs as compared to those that deliver at health facilities.
The following reasons were given as influencing mothers to prefer delivering at TBAs than at health facility:

- TBAs are near women's homes
- Labour usually starts at night making it difficult to travel to the hospital
- Bad service (neglecting patients) provided by nurses at the hospital discourage people from going there
- Health facilities (CHAM) are very expensive especially if one has to go to the facility in advance to wait for day of delivery
- Women are shy to go in public because of lack of nice clothes

Decision Making for Place of Delivery
The study also established who makes the decision when it comes to choosing a place for delivery. The following were suggested:

- The pregnant women merely suggests but decision is made by the husband
- Unlike woman, husbands make decisions that are executed.
- The man's decision unlike the woman's is final because he is the head and provider of the family
- Grandmothers too would have an influence in deciding where the woman should deliver.

Delivery Practices
Various practices and beliefs exist attached to delivery of babies. These include:

- Women said that at the hospital they deliver on a clean surface and the room is very hygienic.
- They explained that at the hospital, they make sure that the surface should be

clean to protect the child from infections. Majority mentioned that when they go to the hospital to deliver, they bring along a clean plastic paper and they are covered by their won clean preferably new cloths.

- Majority said that the surface at the TBA is usually rough. They place a plastic paper on the ground. Many described the surface as dirty and unclean.
- TBAs provide strong herbs that are meant to assist the woman to deliver even when the baby is not ready to come out
- The herbs provided by the TBAs induce false labour (labour pains). The pregnant woman would then go to a healthy facility thinking that they are ready to deliver only to find the pains subsidising and they might take another week before delivering

Strategies to encourage facility deliveries

All participants indicated that the best way to encourage women to deliver at facilities was to raise awareness on the advantages of delivering at the health facility and improve service delivery at the health centres.

Birth Companionship

Despite the rough surface and less hygienic atmosphere, majority of the mothers described the atmosphere at a TBA as favourable because delivery is in the presence of relatives and friends which makes the experience less agonising compared to the health facilities where women often times deliver on their own.

Many respondents reported that the atmosphere at the health facilities is not friendly. Stories abound in the communities about how sometimes women are so neglected by the health workers that they deliver without anyone to assist them adequately. Midwives sometimes do not attend to them even when they are told that the child was coming.

Cleanliness Practices during Delivery

The study findings strongly suggest that majority of the TBAs do not wash their hands before delivery. Respondents were sceptical if they were some who consistently washed their hands before delivery. All TBAs do wash hands after delivery and they do so to protect themselves from infections. This is ironic in that they focus on protecting themselves but do not take precautions to protect the baby. All respondents, including TBAs, indicated that it was very important that TBAs and other people assisting during delivery should clean their hands before and after delivery in order to protect the child as well as themselves from infections.

Practices during and immediately after birth

Majority of the participants mentioned that at the hospital, the cord is cut and tied using a pair of scissors while at the TBA most of the time it is tied using a piece of cloth frayed from a old (usually dirty) chitenje (wrap around).

In the communities, especially in emergency cases, a sugarcane peel is used to cut the cord. This happens if the child is born on the way to a health facility or

unexpectedly at home and they don't have a razor blade. All respondents acknowledged this as unhygienic practice.

At the hospital, the nurses dispose off the placenta. At the TBA or home the placenta it is thrown into a pit that is dug.

Handling Delivery Complications
The findings suggest that women experience different kinds of complications. Mainly complications were in the form of child failing to come out because it was too big or was in a breach position.

Other complications occurred after birth and included the child not crying after being born. In this regard a variety of strategies are used to deal with these complications:

- Holding the child by the feet, head facing down and gently hitting it on the back (both at TBA and hospital)
- The TBA would burn a small piece of cloth and put it close to the child's nose so that it should sniff the smell and usually the baby would cry.
- Bath the baby in cold water is a common practice with TBAs.

POSTNATAL PRACTICES INFORMATION

The study also set out to establish postnatal practices in the three districts.

Seeking postnatal care

- The majority of the women that deliver at the hospital seek postnatal care.
- Women reported that they are advised to go back to the hospital for follow-up after three days.
- While some who deliver at home or TBA take the child to a healthy facility for check up, most of them usually seek postnatal care if the child or the mother presents with some problems.
- If the child presents with a problem that could be dealt with at home, then the child would not be taken to the hospital.

Bathing the Newborn

- The findings showed variations regarding bathing the baby.
- Almost half of the respondents indicated that babies are given a bath soon after birth.

However, in contrast to washing the child soon after birth, most of the participants indicated that:

- Sometimes the baby is given a bath when it is a week old.
- Some respondents indicated that the baby is given a bath after the period of *chikuta* (rooming-in period) which varies from 3 to 14 days.

- The first bathing involves bathing the baby in water that contains herbs.
- The majority indicated that grandmothers, who usually accompany or act as guardians to the women giving birth, are the ones given the responsibility of bathing the baby if it is born at home or at the TBA.
- The grandmother is given this responsibility because she is believed to possess experience in washing newborn babies. In some circumstances any elderly woman in the community would be asked to assist. The TBA would bath the baby if there is no one to do it.
- Cold water is used by the majority to bathe the baby. This is done in order to make the child alert and active. The findings suggest that few people use warm water.

Frequency of Bathing the Baby
Majority mentioned that a child is given a bath three times a day, while some said two times a day. Reasons for bathing the child more than once a day included:

- To prevent the child from itching.
- To make the baby comfortable and prevent it from crying.
- To prevent the child from feeling hot and therefore, prevent heat rush.
- To foster the child to sleep more because usually the child sleeps when given a bath therefore the more baths the more sleeps.

Breastfeeding Practices
Majority of the mothers are aware of the need for exclusive breastfeeding. The findings indicate that awareness was very high among women who attend antenatal clinics and most of them try to practice.

However, few mothers were not aware of exclusive breastfeeding. This category of women comprised those that do not attend clinics and are guided by their mothers or grandmothers in newborn or child care.

The study also unearthed a number of practices related to breastfeeding practices. These included the following:

- A newborn cannot be breastfed by another woman when the newborn's mother dies
- A breastfeeding mother who falls pregnant is discouraged from breastfeeding as it is believed the child can get sick.
- It is not recommended that a child should stay for 6 weeks without water because the child's throat would dry
- If the child breastfeeds on the first milk (colostrums) the child can get sick
- When a mother has been away from her child for 2 days or more she should stop breastfeeding because the milk is believed to have gone bad.

Danger Signs
The study also looked at what the communities perceived as danger signs regarding the health status of the baby or mother. The following danger signs were reported:

Danger signs depicting that baby is not well	
• Fever • Cries frequently • Fails to breath • Coughing • Diarrhoea • Has sores in the mouth • Swelling of the cord due to infection • Does not pass stools or urine • When the child has not cried at birth • Weakness of the child • They faint • When the baby is not breastfeeding because of infections like yellow fever or meningitis • When the placenta return inside the womb it means the baby is sick	• When a baby has as head like a bird and a body of a human being that means the child has been bewitched • Puss in the eyes implies that the mother was eating a lot of pepper or sugarcane and so the child gets sick • The baby refuses to breastfeed. This means that the baby should be given a name, if the name is given the baby starts breastfeeding • Weak eyes • Yellow eyes • Convulsions – this means the child is going to die • When the child is not crying. • If the child has 6 fingers

Danger Signs that show a Mother is not well
Respondents mentioned a variety of danger signs that suggests that a mother is not well. The signs include the following:

Danger Signs that show a Mother is not well	
• Heart palpitations • The baby becomes weak • They feel cold • Abdominal pains • Sore in the womb	• Anaemia • Placenta remains inside when the baby is born • Bleeding through the vagina • Foul discharge • Fainting/convulsions

COMMUNITY PRACTICES AND HSA INFORMATION

The formative research also aimed at establishing community practices and HSA information in relation to the roles HSAs play and also their expected responsibilities in the communities.

Roles of HSAs in Community- Maternal and Newborn Care
The study established that HSAs play a number of roles in the community and these include:

- Immunization
- Giving health talks
- Growth monitoring of babies
- Supplementary feeding

- Data collection
- Community mobilization
- Registrations of births and women attending antenatal clinic
- PMTCT awareness talks.

HSAs Training Background
It was reported by HSAs as well as health workers that the training given to HSAs' does not adequately prepare them for the responsibilities they are trained to do in the communities. It was established that HSAs are expected to perform many roles than what they were trained for.

Among the issues highlighted were the shallow content and lack of practical skills in the training curriculum.

Majority of the HSAs mentioned that the course objectives are not explained well making it difficult for them to see the link between what is taught and their job responsibilities.

It also sufficed that the training programme seem to focus on technical issues only at the expense of interpersonal and community dynamics. Some respondents reported that some HSAs had poor interpersonal and community dynamics skills a situation that makes execution of day to day duties difficult in the community.

Despite the poor initial training, no effort is made to strengthen their skills and knowledge through refresher courses. In the words of one HSA *"someone was trained in 1993 and is still using the same knowledge and yet information keep changing everyday"*

HSAs Workload
Majority of the HSAs reported that their workload was very heavy. Although for some this heavy workload was due to their functions or activities, for many it was largely due to some constraints that make their operations less smooth which include the following:

- Long distance between their homes and catchments areas
- Extra or outside their responsibility duties (from NGOs)
- Taking up other workers roles
- Transportation problems

Health workers indicated that they felt that HSAs were overloaded. They felt that most of them are overloaded not with their core responsibilities but with activities brought in by other organizations (NGOs) that bring instant and better honoraria's. Their focus on NGO activities provide a false sense of their being overloaded and make their core responsibilities suffer.

HSAs involvement in Maternal and Newborn Health
Respondents reported various potential benefits for involving HSAs in maternal and newborn health care. Among them included:

- Reduction in maternal deaths
- Reduction of cost of child delivery if trained to deliver children
- Problems will be dealt with before getting complicated

Some community respondents feared that male HSAs in particular would abuse the new role by using it to have affairs with women in the community.

While health workers acknowledged potential advantages, they pointed out a variety of problems or disadvantages that would evolve with HSAs involvement in maternal and newborn health. The following were raised.

- The additional maternal and newborn health responsibilities would further compromise their core functions as well as the new roles.
- The new roles would require new supervisors, thus experts in maternal health. This would make supervision more complicated. Despite the integrated supervision process, the shortage of experts in maternal health would invariably make it difficult for them to supervise adequately. Furthermore, the maternal health experts themselves will be swamped with work.
- There is potential that HSAs would extend their roles to those that they are not expected to perform such as some procedures that are done by midwives in the bid to enhance their 'doctor' image.
- Communities would develop false impression that HSAs would be providing the services that are provided at a health facility therefore no need to go to the facilities.

Perception of having Male HSAs in Maternal and Newborn Health
Half of the male respondents in FGDs and some women especially the grandmothers strongly felt that female HSAs were more suitable for maternal and newborn services. The preference of female HSAs over male HSAs was due to the following:

- Females would eliminate possibilities of infidelity
- Females would provide a better atmosphere that would allow openness between them and the client.
- Women have natural experience with maternal and newborn issues
- Women prefer to be delivered by a fellow woman

The findings reveal that most women as well as some men were comfortable with being assisted by male HSAs *"I have no problem since they are qualified and will be doing their job"*

Constraints faced by HSAs
HSAs reported a variety of constraints that impede their performance. The following constraints were cited:

- Transport
- Inadequate Remuneration
- Poor relationship with VHCs/Village Headman
- Lack of recognition
- Harsh working conditions
- Low education and training
- Unreasonable community expectations
- Lack of skills and knowledge
- Lack of Resources

MAPPING INFORMATION

The formative research had set out as well to locate villages, their population densities and proximity to health posts and the distribution of HSAs in relation to population and service catchment areas in the 3 districts. However the information provided by the respective authorities was very sketchy and in most cases was not available.

However, the following district profiles regarding HSA distribution in the three districts were established:

Thyolo district

Has a total of 290 HSAs
32 employed by the Tea Estates
258 HSAs are distributed in the health centres and communities.

Chitipa district

Has a total of 94 HSAs
The average coverage is five (5) villages per HSA.

Dowa district

- Has a total of 180 HSAs
- 83 females
- 97 male
- The general coverage ranges from 1900 to 2035 households per HAS
- Most HSAs are concentrated in health centres along the main roads (Kasungu and Salima roads) and trading centers.
- About 50% of HSAs stay within their catchment areas

RECOMMENDATIONS

The study revealed that HSAs' workload is heavy largely because of other factors other than their expected core responsibilities such as major constraints like transportation problems and their involvement in activities brought by other non governmental organizations. These constraints as well as the other engagements require that they should plan their time very well in order to prevent their core responsibilities from suffering massively. It is therefore recommended that HSAs training should include time management to assist them manage their time properly.

It is obvious that some duties being undertaken by HSAs could be shared or harmonized with those of the VHCs. VHCs comprised of substantial members with primary education or even retired health workers or other professionals could ably execute some roles currently undertaken by HSAs. It is therefore recommended that small studies should be done in order to assess the VHC potential to undertake particular roles. This could reduce the workload of HSAs.

HSAs could be more efficient at community level if they were endowed with interpersonal and community dynamics skills. It was noted that some HSAs were unable to get the full corporation of their communities because they were unable to understand the dynamics of the community. It is therefore recommended that HSAs should be given interpersonal and community dynamics training in addition to the technical areas they cover.

HSAs are known as doctors in their communities which raises a need within them to present a doctors' persona. This is advantageous in that they are encouraged to work hard and make them willing to be trained and master any skills that would enhance this image. However, this can have negative effects in that they may be tempted to play the doctor in circumstances where they would need to refer the patient to the hospital. It is therefore recommended that HSAs should be reminded of their status and encouraged to work within the boundaries that their training prepares them for.

In order to ensure a steady presence of qualified healthy personnel in the communities, it is recommended that health professionals should carry out community service after qualifying. This could be done in such a way that the worker will have done their internship and is therefore able to be on their own with minimum supervision if at all. The DHO would be available for to conduct monthly debriefing meetings with the professionals. This arrangement would be effective if proper housing and other incentives were made available to the people.

The research reveals that there is information about maternal and newborn health that is misunderstood in the communities. It is therefore recommended that during implementation of the project, studies on specific issues within areas should be conducted to establish the nature of the issues.

Since it was difficult to get information on mapping, it is recommended that a full fledged study with census like elements should be conducted.

Although the HSAs seem to be the best and 'natural' cadre to be trained in maternal and newborn health, it is felt strongly that training of a new cadre of people specifically in this area would be better than the HSAs. This cadre could be people with a minimum of MSCE especially girls who are ready to be trained as community (village) midwives (*as opposed to TBA*)

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1. INTRODUCTION

1.1 INTRODUCTION TO THE REPORT

This report presents the findings of the formative study on maternal and newborn health conducted in Chitipa, Dowa and Thyolo districts from September to October 2007. The formative research was conducted in order to inform the development of an integrated community based maternal and newborn care intervention package to be delivered by Health Surveillance Assistants linked with community mobilization and health system strengthening, within the ACSD/IMCI and Essential Heath Package (EHP) framework of Malawi.

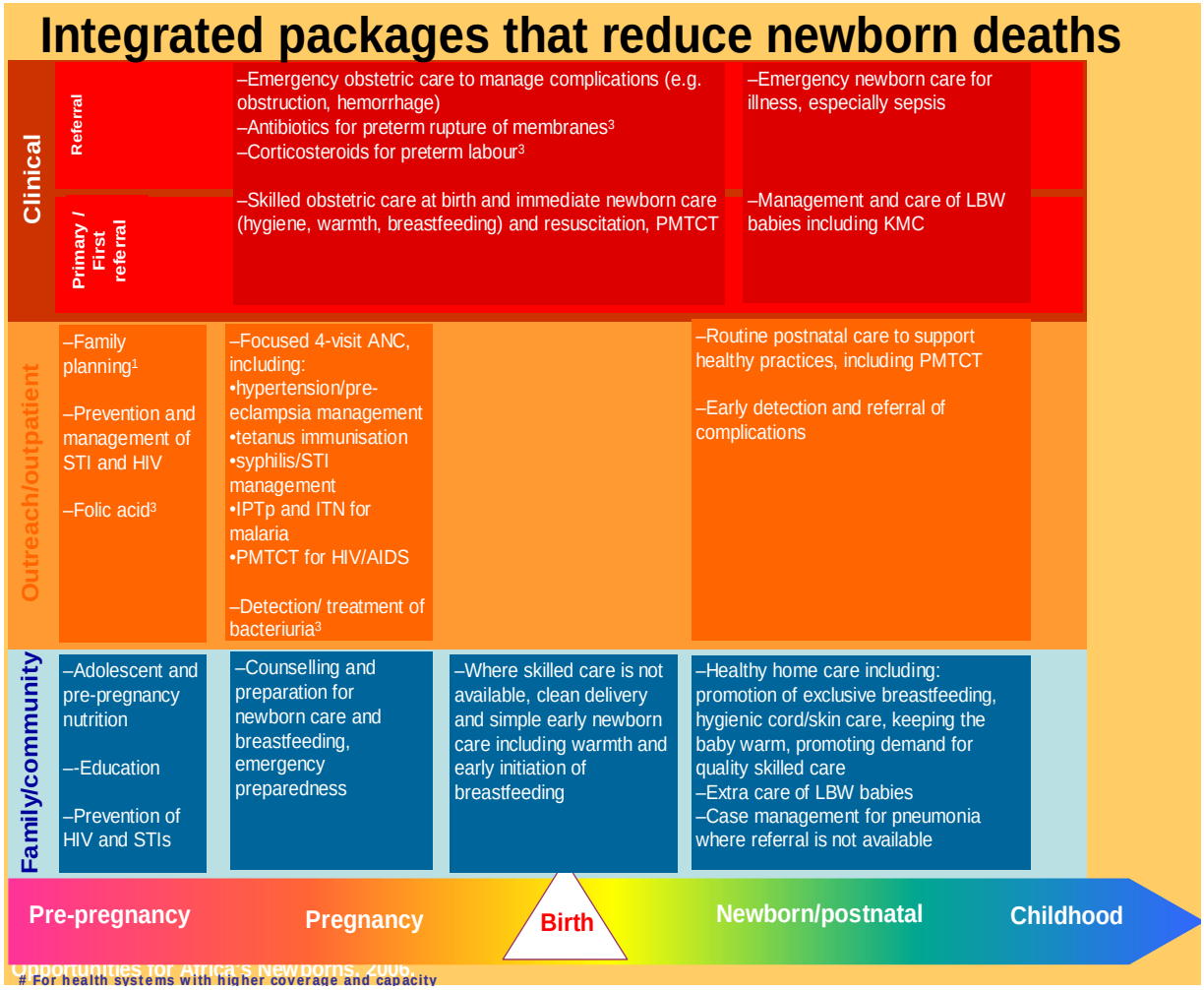
The research was conducted by the Reproductive Health Unit of the Ministry of Health in partnership with Save the Children Malawi country office, UNICEF and other stakeholders as part of an integrated community based maternal and newborn care learning programme. The programme aims at answering questions for scaling up newborn care in Malawi with the overall goal of contributing to the country-wide effort of reducing child and maternal mortality in line with the Millennium development Goals (MDGs). The expected outcome of this programme include developing, implementing and demonstrating practical tools, strategies and approaches for implementation of community-based newborn care delivered by Health Surveillance Assistants (HSAs) with complementary community mobilization and with essential links to and strengthening of facility-based services.

1.2. BACKGROUND

The Ministry of Health in partnership with Save the Children, UNICEF, WHO, UNFPA, planned to scale up community participation in neonatal and maternal health care with an aim of ensuring that MDG 4 and 5 are achieved by year 2015 in Malawi. The Ministry with its partners instituted this formative study to highlight some important factors that have to be taken into consideration when planning the scale up.

Four million babies die each year within the first four weeks of life and 99% of these deaths are in low and middle income countries. Research shows that nearly 3 million of these deaths can be reduced annually by introducing low cost, low-tech interventions that are not currently reaching those in most need (Lancet Neonatal Survival Series Executive Summary, 2005). The fourth Millennium Development Goal (MDG 4) underscores the need to reduce deaths of children under the age of 5 by two-third by 2015. Almost 40% of these deaths occur during the neonatal period.

Fig 1 below shows cost effective continuum of care that can be a means to reducing newborn deaths should this be packaged and linked with other programs in the provision of health care.



There is encouraging evidence from low income countries where newborn mortality has been reduced following the introduction of some of the above noted strategies. Sri Lanka, Indonesia and Botswana for example, reduced neonatal mortality by about half in the 1990s despite low gross national product. Most intriguing are the tested models in South Asia notably the SEARCH program in India. Neonatal mortality was more than 50 / 1000 before the introduction of the program. A home based neonatal care was introduced. This intervention entailed selection by the community of a literate woman to undergo training in provision of neonatal care. After training the home based care workers were expected to undertake pregnancy surveillance, participate in delivery care (including resuscitation), routine post natal visits on days 1,2,3, 5,7, 15, 21 and 28, diagnosis and treatment of sepsis with oral cotrimoxazole and injecting gentamicine at home among other responsibilities. After three years of intervention neonatal mortality decreased by 62% in the 39 intervention villages compared with no reduction at all in the 47 control villages.

The Makwanpur district (Nepal) intervention could also be a case worth citing. NMR was 39 and only 4% of the mothers in the district delivered at health centres. After mobilisation of community facilitators in the community (responsible for identifying maternal newborn health problems and frequencies, planning actions to take and how to involve the broader community) and improvement of health facilities in terms of drugs, equipment etc, there was a 30% reduction in neonatal mortality. There are numerous similar success stories in this region. Worth noting from these success stories is maternal and neonatal mortality can be reduced with community intervention.

1.2.1 Maternal and neonatal situation in Malawi

Maternal mortality rate in Malawi is 984/100,000 live births, and neonatal mortality rate is 31 per 1,000 live births. Only 56 percent of women deliver in a health facility. Post natal care coverage is estimated at 100% for facility births and 9% for home births. An estimated 5,400 mothers and 17,200 newborns die annually in the country. The major causes of neonatal death are infection (29%), asphyxia (23%) and preterm birth (27%). Low birth weight is estimated at 16%.

1.2.2 National Response Initiatives

There is a strong commitment by the government of Malawi to reduce maternal and neonatal mortality. A number of strategies have been set up for this cause. Most notable are the *Road Map for Accelerating the Reduction of Maternal and Neonatal Morbidity and Mortality*, ACSD/IMCI, Essential Health Package and SWAP. Within these strategies key maternal and neonatal priority areas are:

1. *General health system strengthening.* The SWAP includes a human resource plan to increase the numbers of various cadres of health workers, including HSAs, Nurse Midwives, and others. Very few facilities currently have the capacity to deliver the EHP, including supplies, equipment, services, and personnel. Through the Road Map, 50% of health facilities are envisaged to be upgraded to provide BEmOC services by 2010. IMCI will largely be delivered through health centers, and will be implemented through Component 1 to strengthen health worker case management skills and Component 2 to strengthen the availability of essential drugs and supplies. This push to strengthen health systems by increasing human resource numbers and capacity and equipping and upgrading health facilities is a resource intensive effort which will require time and significant resources to become fully functional.

2. *Home/family and community care.* Under ACSD/IMCI, a variety of delivery strategies have been proposed for maternal, neonatal and child health through home/family, community, and facility interventions, with the Health Surveillance Assistant (HSA) figuring predominantly in the delivery of home/family and community care through Component 3 of IMCI. The HSA currently receives 10 weeks of training in child and community health and through ACSD/IMCI will undergo the 5-day IMCI clinical training and 5-day C-IMCI training. There are currently 4,531 HSAs in the country, with the majority

male, although efforts are underway to recruit more females and to recruit locally from communities. It is understood that the HSA will require additional specific training and practical experience in maternal and newborn care in order to take on additional responsibility in this area. It is unlikely HSAs will be recruited to specialize exclusively in maternal and newborn health due to overall resource and staffing constraints in the country.

3. *Community structures and initiatives.* There are several organizing and supportive structures for health at community level in Malawi, including District, Community, and Village Development Committees (VDC), District, Community, and Village AIDS Committees (VACs), and Village Health Committees (VHC). In all instances, Traditional Authorities, including Chiefs and Village Headmen, figure prominently in influence. Several projects and studies have recently demonstrated that women's groups and volunteers in the community appear to substantially and positively influence health care seeking behaviors. While TBAs continue to deliver in many rural communities, there is uncertainty as to their future role. Policy, whether explicit or implicit, discourages TBA training and deliveries. This is applied differently in districts and communities, with some supportive of TBA training in the absence of practical means to ensure skilled attendance, and others having developed incentives to refer to facilities, whether at district or community level.

1.3 OBJECTIVES OF THE CBMC PROGRAMME

The specific objectives of the CBMNC programme include:

1. To improve access, availability and quality of existing facility-based MNCH care in the 3 learning districts by strengthening the existing MNCH packages.

2. To increase access and availability of community-based MNCH care by developing and implementing a package, job aids for home visits and related supply kits for use by HSAs.

3. To increase community knowledge and mobilization for key maternal and newborn health behaviours and demand for care

4. To evaluate the results of the community-based maternal newborn programme in terms of programmatic cost, feasibility and changes in behaviours and coverage of care in order to learn key lessons to maximize accelerated scale up of the package.

1.4 THE FORMATIVE RESEARCH

This research was conducted in order to provide background information towards planned community based maternal and newborn care learning program. The study set out to accomplish the following specific objectives:

1.5 SPECIFIC OBJECTIVES OF THE FORMATIVE RESEARCH

The following were the specific objectives of the study:

1. To establish home and community practices related to maternal and neonatal care in the three learning districts (i.e. Thyolo, Chitipa, and Dowa).

2. To assess gaps in knowledge and practice of essential maternal and neonatal care and how these gaps can be improved.

3. To establish acceptability of HSAs in maternal and neonatal care activities and the role they can play within maternal and newborn health.

2. FORMATIVE RESEARCH METHODOLOGICAL APPROACH

The formative research utilized qualitative methods in the form of In-depth Interviews and Focus Group Discussions (FGDs) with various groups of people as agreed with the MoH and partners. Before the research project relevant documents were reviewed and training of research assistants was undertaken.

Data were collected for three weeks by 10 trained research assistants who were composed of health scientists and social scientists. The in depth interviews provided insightful ideas about the communities as well as technical ideas from professionals. The focus group discussions provided an opportunity for people to discuss and brainstorm on topics that required people to look at things in a different way.

Although a set number of focus groups were set per district, the research had been designed in such a way that the sample size was going to be determined using saturation sampling and therefore the number of FGDs changed. It turned out that the study did more interviews with men as new information kept coming. The same sampling was used for in depth interviews. Interviews were conducted with the following people after getting their written consent:

- 3 in depth Interviews with District nursing officers
- 3 in depth interviews with District health officers
- 3 In depth interviews with District Environmental health officers
- 30 in-depth interviews with health surveillance assistants
- 12 in-depth interviews with chiefs
- 12 in-depth interviews with midwives
- 12 in-depth interviews with traditional healers
- 6 in-depth interviews with village counsellors
- 18 in-depth interviews with traditional birth attendants

A total of 38 Focus group discussions were conducted with the following groups of people:

- 11 FGDs with Pregnant women and mothers with children aged less that 1 year
- 9 FGDs with Men with pregnant partners/wives whose children are aged less that 1 year
- 9 FGDs with Village Health Committees
- 9 FGDs with Grandmothers

Interviews were captured through note taking by an assistant for the FDGs and the interviewer for in depth interviews. A sample of interviews was tape recorded in order to ensure quality. Most of the quotes in the report came from the tape recordings. Interviewers transcribed the FGDs the same day of the interviews before they conducted other interviews. The transcripts were analysed using thematic content analysis.

3. FINDINGS

3.1 ANTENATAL CARE INFORMATION

3.1.1 Necessity of Seeking Antenatal Care

The findings reveal that all participants approved that seeking antenatal care was necessary and very important. Majority of pregnant women make an effort at some point to seek antenatal care. However, it is very clear that some women never seek antenatal care at all while many others seek care very late. Traditional birth attendants reported that they sometimes assist women who never went to the health centre or to the TBA until they were in labour. Although some do not seek care, they believe it is necessary to do so. Different reasons account for the women's laxity to seek care. The table below presents reasons why some women do not seek care:

Table 1: Reasons for not seeking care

Fear of husband

"Women are sometimes afraid to seek antenatal care because their husbands don't want them to go to the hospital where they would be told about their HIV status."

Need for nice clothes

"When you are going to the antenatal clinic, you need to wear nice clothes but if you cannot afford what do you do."

Concealing pregnancy

"if you have many children, or you have one that is very young, you wouldn't people to know that you are pregnant again so you don't go to antenatal clinic so that people should not know."

Financial constraints

"Sometimes women fail to seek care because they don't have money. You need MK200 to pay the TBA for you to start visiting her and it is expensive to go to the hospital because transport is very expensive."

3.1.2 Seeking Antenatal Care

The findings show that the majority of pregnant women seek care during pregnancy. Majority of the respondents indicated that most women seek care from both traditional birth attendants (TBA) and from health facilities. Men indicated that some women seek care from the traditional healers. *"When you know that what your wife is suffering from what might be a spell cast on her by jealousy people, you would advise your wife to see the traditional healer."*

Sometimes women attend antenatal clinic at the TBA but would choose to deliver at the health facility, while some would attend at a health facility but choose to deliver at the TBA.

When asked why majority of the women sought antenatal care from the TBAs, respondents argued that the TBA is a natural choice for most women because they live within their communities. They said that hospitals are very far from their villages. Apart from the health facilities being very far, transport is a problem for many because the roads are not good and few people own cars in their areas that are available for public transport service.
The following comments were made:

"Most women here go to the TBA because the health centre is too far."

"It is advantageous to go to the TBA for antenatal care because if you happen to have any problem, they would be readily available as compared to thinking of making travel arrangements to the hospital."

"The vehicles available here are very old and not pleasant to ride, just imagine a pregnant woman is those vehicles am sure labour would start."

Respondents who felt that many women seek care at health facilities said health centres were preferred because they provide better care. They compared the quality of services provided at the TBA and the health facility and said that TBAs did not treat women properly. During delivery, if a woman is lazy, they would insert their hands in the private parts in a harsh manner. The following comments were made:

"*Most women go to the health centre because care is provided by health workers like doctors while at the TBA it is someone who is not qualified."*

"There is no proper care at the TBA. They do things the way they know themselves. They beat you if you are lazy, some pinch you."

"Whenever there is a problem, they would insert their hands in your private part even without washing their hands, this type of examination leads to your private parts swelling."

"During delivery, TBAs try all sorts of things. The try to insert their hands to enlarge the birth canal when they see that you are tired, they say go and find an oxcart to take you to the hospital."

3.1.3 Time of Seeking Antenatal Care and factors influencing care seeking

Women start to seek care at different phases of pregnancy. Many of the respondents said that women first seek care at 4 months of pregnancy. Some said they start at three months especially if they are having problems.

"Women start seeking antenatal care when they are 3 or 4 months pregnant. They sometimes come to us at 2 or 3 months pregnant. With history of miscarriages, women would come early for antenatal care" ***(TBA* – Dowa)**

Only a few said as soon as the woman falls pregnant. However, majority of the respondent's especially antenatal women indicated that many pregnant women first seek care, as in going to the antenatal clinic or visiting the TBA, usually between 5 - 7 months. This seems to be the general trend as majority of the TBAs said the same. Some TBAs especially in Thyolo said that they often have cases where women come for the first time to seek care when they are 7 or 8 months pregnant. Those who come this late merely do so to establish contact with the TBA so that they should be treated as an old client when they come for delivery.

3.1.4 Frequency of seeking care

Regarding number of times care is sought, the majority said it varies. Respondents reported various frequencies depending on where care is sought. Respondents said the variation in number of times is mainly dictated by the problems that pregnant woman face.

At health facilities, medical personnel may advise the mother to frequent the hospital for proper management if they are experiencing many health related problems. *"The number is usually guided by the health workers. The midwives tell us when the next visit would be"*. The majority said that care is usually sought about 5 times before delivery. Some explained that women would start at three months and attend clinic once a month in the early months of pregnancy and increase to once a week when they are close to the delivery date. For this group of women, they end up visiting the facility more than 8 times. This is substantiated by many who reported that some women attend 7 times. Some reported that women do seek care only two times while some only once. This confirms the reports by the TBA, who said women may see them when they were 8 months pregnant.

Traditional healers indicated that pregnant mothers are advised to come for care only 2 to 3 times during the entire antenatal period.

"The first time we give them traditional medicine so that the baby should be well implanted (mthunzi ukhazikike) and stomach pains should stop. The second or third times we give appropriate medicine that assists in the development of the baby while at the same time giving strength to the mother. After that we advise the pregnant mother to start going to the hospital for proper antenatal care" **(Traditional Healer – Dowa)**

3.1.5 Factors and people influencing care seeking decision

Majority of the participants indicated that the decision to seek care is usually dictated by the health status of the woman. If a pregnant woman is often sick at the beginning of the pregnancy, she is bound to seek care much earlier but if she does not experience problems she may delay to seek care. Majority said that the decision to seek care is usually influenced by the husband or parents of the woman.

"Husbands are the ones that influence the decision this happens a lot because we women are very lazy we need to be pushed to do certain things".
(Pregnant woman in Chitipa)

"Your parents or husband influences the decision because you are reluctant to go to the hospital so they tell you to go." ***(Pregnant woman in Thyolo)***

While the general picture was that women are not so keen to attend antenatal clinics some participants said that some women do seek care very often in order to know how the baby is developing.

"Many women go to the clinics very often so that they should know the position of the child in the womb to receive medicines and immunization as well as to know how they are in their bodies (HIV)."

3.1.6 Type of Care Provided

When respondents were asked to describe what type of care they received from the different sources, they reported that while some services or care were the same, some care at the health facility and the TBA were different. Although not popular, traditional healers in their own capacity also provide maternal and newborn care. However, many TBAs also function as traditional healers. Some of care provided by TBAs is done in their capacity as traditional healers. The specific traditional healer care include treating conditions that are assumed to be witch related as well as deciding sex of a baby.

The table below present the care provided by the two care providers.

Table 2: Care provided at health facilities and TBAs

Traditional Birth Attendants

- Women are instructed to take care of themselves and what herbs to take and to avoid. They are instructed to avoid herbs such as mwanamphepo
- Women are referred to health centres for HIV testing and get PMTCT drugs should they be HIV positive.
- Women are advised to go to the hospital to get iron supplements if they happen to be HIV positive
- Weighing (trained TBAs)
- Examine if the child is in good position
- Determine the sex of the child
- Tie the birth canal to prevent miscarriage
- Change the position of the child if it is breached

Health facility

- Examined and weighed
- They are given supplements
- They are tested for HIV
- They are given fansidar and iron tablets
- They are given TTV
- The babies position is checked
- If the baby is seen to be too big they refer you to the district hospital to deliver through 'operation' (caesarean section)
- If the woman is too weak or sick (malnourished) she is referred to the nutrition department
- If positive, they are advised to avoid having multiple partners and to use condoms when having sex with their partner
- If positive the mother is given treatment
- Advised on how they can breastfeed a child when they are positive

3.1.7 Pregnancy Danger signs

When asked to mention the danger signs during pregnancy, respondents mentioned a variety of danger signs. The following were mentioned:

- Convulsions
- Vaginal bleeding
- Pale eyes
- Vomiting
- Shortness of breath

- Malaria
- Swelling of hands and legs
- Anaemia
- Backaches
- Slimy vaginal discharge
- Abdominal pains

3.1.8 Perceived Causes of Danger Signs

A variety of causes for the danger signs were presented. The table below presents reported causes of danger signs

Table 3: Perceived Causes of Danger Signs in Pregnancy

Husbands having sexual relations with other women

"When a man has sexual relations with other women while the wife is pregnant he takes blood from the woman she is cheating with and mixes it with the pregnancy."

Dirty household

"When the households surrounding is not hygienic it leads to many diseases because germs bleed within the household."

Poor nutrition

"A woman is supposed to eat balanced diet during pregnancy, if not the thing[3] (baby) does not develop very well."

Immature implantation

"Problems experienced in the first days are usually because the pregnancy is still not well implanted (mimba siinakhazikike)."

Menstruating women adding salt to relish

"Women sometimes may have problems because they ate food that a woman who is menstruating has put salt in."

Mosquito bite

"A woman gets malaria if she does not sleep under a mosquito net."

Taking traditional herbs

"Sometimes women have convulsions when they take herbs (mwanamphepo) which open the birth canal and slimy vaginal discharges are released."

Compromised immunity

"When an individuals immunity goes down, the woman experience many health problems."

[3] An unborn child is referred to as a thing because no one knows whether the 'thing' inside is indeed a person or not. Besides no one knows whether 'it' will be born alive or not

"It is important that women should be encouraged to test for HIV and make them realise that there are more advantages when a pregnant women knows her status because the child's life is protected and can be assisted with the problems they face during pregnancy due to HIV."

3.1.9 Care Seeking For Pregnancy Danger Signs

When a pregnant woman experience danger signs, they would usually inform the grandmother or husband and then seek help from an appropriate source. Women would decide where to seek care depending on the nature of the problem. The choice or decision would also depend on the ease to access that help. The findings show that many respondents seemed to know more about the care the women could get from the TBA compared to the health facility. Many commented in this manner:

"When a woman is experiencing heart palpitations, she would go to the TBA who would make a wreath that would stop the heart from racing."
"TBAs would provide herbs that would ensure that the woman should not miscarry."

3.1.10 Preparation for Birth

A range of activities were reportedly are done in preparation for birth. The following were mentioned

- Source a plastic paper to lie on to avoid infection
- Source razor blades
- Source clean cloth
- Put money aside to be used for transport

Birth kit

The findings revealed that majority of the respondents had an idea of what a birth kit comprised of. They explained that a birth kit consist of a set of clean cloths, new razor blade, gloves and thread.

Women in particular were excited about possibilities of accessing the birth kits. The following comments were made:

"If there is a program to assist us access birth kits, then it better start now, we cannot wait because of the women are unable to purchase the required things."

"It is better to have birth kits because only few people afford to buy the birth kits."

"The birth kits should be secretly distributed at the hospital or at the TBAs."

3.1.11 Prevention of Mother to Child Transmission (PMTCT)

Majority of the women reported that they knew about PMTCT while a few were not very sure what it meant. Respondents explained:

"It is when a pregnant woman has HIV."

"It is women who are pregnant and have a virus that leads to AIDS."

"Women are advised to visit the hospital often and encourage that having the virus does not mean her end."

"Women are told to breastfeed for 6 months only and are given more health education and they take medicines towards the days of delivery."

"Women are advised to attend clinic to be weighed and examined frequently."

"Women are advised to wear gloves when handling the baby and during birth, they make sure that the baby does not ingest the mother's blood."

Many women indicated that PMTCT had advantages such as protecting the unborn child from being infected. However they also pointed out that PMTCT program had disadvantages too. The following disadvantages were mentioned:

Table 4: Disadvantages of PMTCT
Can lead to divorce "*Pregnant women who test for HIV, risk losing their husband if they test positive and they disclose the results to the husband."* Can lead to being discriminated against *"If known to the public the women are discriminated against."*

Access to PMTCT could be improved through various ways. The following suggestions were made:

Table 5: Ways to improve women's access to PMTCT
• Raise awareness of the advantages of PMTCT *"Women should be made aware of the advantages of knowing their HIV status so that the unborn child should be protected* • Women should be encouraged to seek antenatal care at the hospital *"Women would easily access PMTCT services they are encouraged to attend antenatal clinic at the hospital as opposed to the TBA"*

3.1.12 Role of Family Members

The findings suggest that family members play a pivotal role in various issues related to the pregnancy. The important players in this context are the grandmothers or mothers of the pregnant women, the husband and some relatives. The grandmothers take a great role in decision making and monitoring the progress of the pregnancy. The husband is supposed to support the wife by ensuring that she has necessary things to allow her to go to public places and to eat balanced food.

The table below summarizes the various roles:

Table 6: Family members Role during Pregnancy

Husband

- Help with domestic work
- Remind the woman to go the clinic

  "Husbands encourage women go to the hospital but sometimes there are traditional beliefs/practices prevent them from intervening more."
- Provide finances for buying the food the woman needs
- Assist in preparation for place of delivery
- Escort the wife to the hospital
- Support the woman to test for HIV

  "Most of the times women keep it a secret(HIV test)because they are afraid of husbands and it is very difficult to know such people until they stop breastfeeding the baby that is when we suspect that the mother is HIV positive."

Grandmother/ mother

- Advise the woman on various things
- Help with domestic work
- Remind the woman to go the clinic
- Assist in preparation for place of delivery

Other Relatives (Sisters etc)

- Help with domestic work
- Remind the woman to go the clinic

3.2 DELIVERY PRACTICES INFORMATION

3.2.1 Place of Delivery

The findings point to the fact that majority of the women deliver at traditional birth attendants. Participants compared the number of women who delivered at the hospital to those who went to TBAs or at their homes and concluded that more women delivered at the TBA.

"If we compare those women who deliver at the hospital and those who go to the TBA I think many go to the TBA."

"Many women in this area deliver at the TBA compared to those who go to the hospital because the hospital is too far from here."

A variety of reasons were given why many women delivered at the TBA. The following table presents these reasons.

Table 7: Reasons for Delivering at TBA or Home
TBAs are near women's homes *"Many go to the TBA and a few to the clinic because the health centres are very far."* "*Many women go to the TBA because the hospital is too far so they just say its better that I go to the TBA."*
Labour usually starts at night making it difficult to go to the hospital *"When labour starts at night, it is difficult for us to travel to the hospital it would be very expensive even if one was to hire a car if one was available."*
Bad service provided by nurses at the hospital *"At the health centre, nurses just chat among themselves and therefore we don't see any advantage for going there."*
Health centres (mission) are very expensive *"People opt to go to the TBA because they are cheap. The hospitals are very expensive for many poor people."*
Women are shy to go the public because of lack of nice clothes *"Sometimes women because they are very poor and they are afraid that other women would laugh at them."*

Majority of the mothers indicated that when a decision has to be made as to where they would need to deliver, it usually made in the 8th to 9th months, very close to the delivery day.

3.2.2 Decision Making for Place of Delivery

The findings suggest pregnant women merely suggest or propose where they would want to go and deliver but the actual decision is made by other people. or deny the pregnant woman's proposal or suggestion. The husband or the elderly women would endorse that decision or not. Unlike the woman, husbands can make the decision and it would be followed …"*because his decision is made depending on how his pocket is*". The man's decision unlike the woman's is final because he is "*the cause of all this.*" Grandmothers too would have an influence in deciding where the woman should deliver.

There was variation on the cost of delivering at the various possible places. Majority indicated that it was cheaper to deliver at the TBA compared to the hospital mainly because of going to the hospital requires money for transport and some to use days before and after delivery. The cost become very high if the woman has to go to the hospital to wait for the day of delivery. Sometimes it happens that one might wait for too long before delivering. One commented:

> *"Sometimes you can go to the health centre to wait for your day, even if you were told that it would be very close to the day that you go, sometimes it takes so many days before the child is born and you end up spending more money."*

If the woman goes to a private hospital it is even more expensive. Even more expensive if the woman stays at the hospital more days. One commented:

> *"If you go to a private hospital and unluckily you have many complications you pay more, sometimes more than MK 1,000."*

Many women as well said it was cheaper at the hospital because they don't pay unlike at the TBA where they are supposed to pay MK500 and sometimes the TBA demands a chitenje (wrap around) as well.

3.3.2 Strategies to encourage facility deliveries

Respondents presented a variety of strategies that could encourage women to deliver at healthy facilities. The strategies were

- Raise awareness on the advantages of delivering at the health facility
- IEC awareness campaigns to sensitize the communities on the benefits of utilizing health facility for delivery to be mounted in all the villages
- Sensitize the pregnant mothers on the dangers of not accessing the antenatal care
- Traditional leaders should be encouraged to reprimand families that send their pregnant mothers to alternative places other than health facilities for delivery.
- With the assistance of the HSAs, the chiefs should register all pregnant women in the village and register them at the heath facility for antenatal care and subsequent delivery.
- Improve service delivery at health facilities

3.2.4 Delivery Practices

Women said that at the hospital they deliver on a clean surface and the room is very hygienic. They explained that at the hospital, they make sure that the surface should be clean to protect the child from infections. Majority mentioned that when they go to the hospital to deliver, they bring along a clean plastic paper and they are covered by their clean preferably new cloths.

Majority said that the surface at the TBA is usually rough. They place a plastic paper on the ground. Many described the surface as dirty and unclean. The following comments were made:

> *"At the TBA, the surface is dirty. You put the plastic paper on a dirty ground."*

> *"At the TBA the room is not swept and it is very dirty."*

TBAs provide strong herbs that are meant to assist the woman to deliver even when the baby is not ready to come out

The herbs provided by the TBAs induce false labour (labour pains). The pregnant woman would then go to a healthy facility thinking that they are ready to deliver only to find the pains subsidising and they might take another week before delivering

3.2.5 Birth Companionship

Despite the dirty and rough surface at the TBAs, majority of the women described the atmosphere as better. They said that at the TBA, they deliver in the presence of friends, their grandmother and the TBA herself which makes it easier. In contrast they described the atmosphere at the hospital as less friendly. They sometimes deliver without anyone to assist them adequately. They said nurses sometimes do not attend to them even when they are told that the child was coming.

It was also reported that the people who are present during delivery at the TBA play different roles. There would be an individual usually the TBA who receives the child while the other people would be rubbing her on the back to alleviate the pain. Some people would hold the woman's legs while some people would prepare porridge and water for the woman to bath after giving birth.

3.2.6 Cleanliness Practices during Delivery

The study findings strongly suggest that majority of the TBAs do not wash their hands before delivery and some do but not always. They explained:

> *"Many TBAs don't wash their hands. They just wear their protective wear and would wash her hands after birth of the child with soap because she wants to get rid of germs and keep her hands clean."*

> *"They don't wash their hands when delivering the child; they don't wash hands until the child is born."*

All participants indicated that it was very important that TBAs and other people assisting should clean their hands in order to protect the child as well as themselves from infections.

3.2.7 Practices Immediately After Birth

Majority of the participants mentioned that at the hospital, the cord is cut and tied using a pair of scissors while at the TBA it is tied using a piece of cloth frayed from a dirty chitenje. In emergency cases, a sugarcane peel is used to cut the cord. This happens if the child is born on the way to the hospital or at home and they don't have a razor blade. Participants acknowledged this as a bad unhygienic practice.

At the hospital, the nurses dispose off the placenta. At the TBA it is thrown in a pit that is dug.

3.2.8 Handling Delivery Complications

The findings suggest that women experience different kinds of complications. Reported complications were mainly when a child is failing to come out of the womb because it was too big or was in a breach position. Other complications mentioned were when a child could not cry after birth.

A variety of strategies are used to deal with these complications. The table below summarise these strategies:

Table 8: Child not crying after birth
• Holding the child by the feet, head facing down and is gently hit on the back (both at TBA and hospital). • The TBA would burn a small piece of cloth and put it close to the child's nose so that it should sniff the smell and usually the baby would cry. • Bath the child in cold water (at the TBA)

It was reported that if a baby is born at home or at a TBAs, sometimes the women would take it to the hospital after three or four days so that the child is given immunization and the health workers can inspect the cord as well as weigh the child.

3.3 POSTNATAL PRACTICES INFORMATION

3.3.1 Seeking postnatal care

Respondents indicated that many women seek some form of postnatal care either from a health facility or the TBA/traditional healers. In terms of seeking professional care, majority of those who deliver at a health facility usually go back to the facility because they are advised to do so by the health workers. Women reported that they are advised to go back to the hospital for follow up after three days. While some who deliver at home or TBA take the child to a healthy facility for check up, most of them usually seek care if the child or the mother presents with some problems. If the child presents with a problem that could be dealt with at home, then the child would not be taken to the hospital.

3.3.2 Bathing the Newborn Child

The findings showed variations regarding bathing the baby. Almost half of the respondents indicated that babies are given a bath soon after birth. Various reasons were given for bathing the child immediately.

> *"The child is bathed to remove the dirt and make it look beautiful" "The child is bathed to remove the dirt he/she was born with."*

In contrast to washing the child soon after birth, some people bath the child on the same day but after sometime elapses. Other people wash the baby a day later.

> *"The baby is given a bath a day after delivery to protect it from developing pneumonia."*

Sometimes the baby is given a bath when it is a week old. Some respondents indicated that the baby is given a bath after the period of *chikuta* (rooming in period) which varies from 3 to 14 days. The first bathing involves bathing the baby in water that contains herbs. Majority indicated that the grandmothers, who usually accompany or act as a guardian to the woman giving birth, is the one given the responsibility of bathing the baby if it is born at home or at the TBA. The grandmother is given this responsibility because she is believed to possess experience in washing newborn babies. In some circumstances any elderly woman in the community would be asked to assist. The TBA would bath the baby if there is no one to do it.

Cold water is used by the majority to bathe the baby. This is done in order to make the child alert and active. The findings suggest that few people use warm water. Commenting on the use of cold water several grandmothers said:

> *"Our elders used to advise us to use cold water to make the child alert and active."*

> *"We use cold water from a pot (mtsuko) because we want the child to be awake."*

For those who use lukewarm water they do so to avoid chilling the baby. From the responses, it is evident that majority of the grandmothers were used to using cold water and probably prefer it. The following points to this fact

> *"Nowadays you teach us that we should not bath the baby because we are going to chill, it but previously, we used to bath them immediately after birth."*

> *"At first we used cold water but now we are using warm water to prevent the child from having pneumonia."*

While the baby is given a cold bathe, the woman who has just given birth use warm water to clean herself in order to avoid infection of the reproductive area (puerperal sepsis).

3.3.2.1 Frequency of Bathing the Baby

Majority mentioned that a child is given a bath three times a day, while some said two times a day. Reasons for bathing the child more than once a day included:

- To prevent the child from itching.
- To make the baby comfortable and prevent it from crying.
- To prevent the child from feeling hot (kutentha) and therefore, prevent heat rush.
- To foster the child to sleep more because usually the child sleep when given a birth therefore the more baths the more sleeps.

3.3.2.2 Keeping the Newborn Warm

Various methods to keep the child warm were mentioned. The table below summarizes:

Table 9: Methods of keeping the child warm
• Keeping the child indoors • Make a fire to keep the room warm • Cover the child at least with two clothes, • Wrap the child in blankets • Use warm shawl • Clothes the child well using socks (boots) and a baby hat and then wrap it in shawls.

Grandmothers said that there are new ways of caring for newborns that are taught nowadays. Responding as to whether they could reduce number of baths given to the child. Majority said it was possible to do so.

3.3.3 Cord Care

All grandmothers acknowledged that they make effort to care for the cord. Various strategies are used to ensure proper care. The following are the various ways.

Table 10: Cord care strategies
• Apply Vaseline blue seal on the cord to soften it • Use salt to speed healing • Apply baby powder • Remove dirt from a pestle and apply it on the cord • Apply "banana gum" (utomoni) to the cord • Apply castor oil msatsi

- Apply pumpkin flower (chiluwe)
- Apply goat and cattle and dung
- Wash it to remove dirt to avoid infection
- Don't apply anything just lie the child on the side so that when the cord falls down should not be between the legs to avoid it becoming barren.

3.3.4 Premature Children

Responding as to what they do when a child is premature, various strategies were mentioned. Majority said that nowadays they take the child to the hospital wrapped in warm blanket. The following table presents all the other strategies.

Table 11: Care Strategies for Premature Child

- Cover the baby in warm clothes and make fire in the house to keep it ward in seclusion until the child reaches "9 months."
- Use a charcoal heater once the child is born and take it to the hospital.
- Use traditional drugs for the baby to grow fast.
- Cover the child with warm clothes and place a hot water bottle close to the child.
- Keep the child covered with ward clothes in the house until it grows.
- Feed the child to speed up its growth.

"We give the food, usually porridge so that they should grow fast."

"We give them porridge although they usually end up having a distended abdomen (kamimba njoo!).

3.3.4.1 Low Birth Weight Children

Low birth weight babies are usually taken to the hospital. Other methods of dealing with the situation include:

- The child is breastfed frequently for it to gain weight.
- Introduce food as early as first months for the child to gain weight.
- Wrap the child in warm clothes and breastfeed frequently.

It was explained by some grandmothers that the child is regarded as of low weight when the mother finds the child to be of smaller weight compared to previous babies born to her.

The decision or choice of type of information is influenced mostly by the elders based on their assessment of the child's condition. Sometimes parents of the child would influence the decision.

3.3.5 Breastfeeding

Babies are first breastfed after the mother and the baby have been allowed to rest. The time between birth and the first breastfeeding is based on several factors which include whether the child is showing signs of being hungry or not and whether the child is crying or not. The following quotes explain:

> *"When the child wants to breastfeed we let the child rest and the mother bath so when the child cries we give it the breast."*
>
> *"We give it (breast) when the child cries even if it is soon after birth."*
>
> *"The blood during birth is very dirt so we allow the mother to bath before breastfeeding. It is unhygienic to breastfeed before bathing."*
>
> *"When a mother has not had a bath for sometime then the child breastfeeds late, sometimes the child sleeps for a long time after birth then we wait until it wakes up."*
>
> *"The child can be breastfeed late if the mother is weak."*
>
> *"We wait until the mother and baby rest, then the mother goes to bath, then the mother gets porridge and afterwards breastfeed the baby."*

3.3.5.1 Colostrums

Majority of the respondents indicated that they regard the first milk good and nutritious. They think it is fine to allow the child to feed on this milk. The following comments were made:

> *"We have no problems with the first milk; in fact we let the mother feed the baby so that the child gets real milk (kaka denizen)."*
>
> *"We let the mother to feed the child the first milk because it is good."*

They pointed out several reasons as advantages of feeding the child with colostrums which included:

> *"It is good because when the child is fed it sleeps comfortably"*
>
> *"It opens the real milk."*
>
> *"It has cream that strengthens the body."*
>
> *"It has vitamins and is nutritious."*
>
> *"We don't throw away the first milk because doctors advised us not to throw it away."*

Although majority of respondents regard colostrums as good many other respondents acknowledged that they think that is not good. They said that colostrums are very dirt and it has to be expressed and thrown away before the child breastfeeds.

> *"I tell my daughter to express it on the floor because the milk is bad and can cause diarrhea."*

When asked if there were any barriers to adopt breastfeeding the child colostrums, respondents indicated that they did not see any barriers. However, one participant said that diseases (HIV) could be a barrier.

> *"I don't see any barrier unless because of the diseases nowadays that could be passed on to the child."*

When asked when water is introduced various responses were given. Majority said that they introduce water anytime after birth or soon after birth.

> *"We introduce water any time just a little on a teaspoon to soften the child's throat."*

> *"We give them little water by dropping a finger in water and add a drop of water anytime the child moves the lips."*

The foods given to the children included phala, nsima, cassava, fruits. These foods are given in order to enhance the child's weight and sometimes because the child is asking for the food.

3.3.6 Danger Signs that Shows a Baby is not Well

Mothers and grandmothers highlighted a number of dangers signs that a baby shows when he/she is sick. These include:

Table 12: Baby's Danger Signs

• Fever • Cries frequently • Fails to breath • Coughing • Diarrhoea • Has sores in the mouth • Swelling of the cord due to infection • Does not pass stools or urine • When the child has not cried at birth	• When the placenta return inside the womb it means the baby is sick • If the child has 6 fingers • When a baby has as head like a bird and a body of a human being that means the child has been bewitched • Puss in the eyes implies that the mother was eating a lot of pepper or sugarcane and so the child gets sick • The baby refuses to breastfeed. This means that the baby should be given a name, if the name is given the baby starts breastfeeding

• Weakness of the child • They faint • When the baby is not breastfeeding because of infections like yellow fever or meningitis	• Weak eyes • Yellow eyes • Convulsions – this means the child is going to die • When the child is not crying.

3.3.6.1 When Care is Sought

Respondents indicated that ideally care is sought immediately after they see danger signs. However, most acknowledged that it is not always the case that they would do so. Usually people wait to see whether the signs are going to get serious or they are going to go away on their own. Unless the problem presents very strongly at the outset, especially when convulsions are involved then care will be sought immediately, otherwise they wait.

3.3.6.2 Where Care is Sought

Respondents reported that many factors dictate where the care will be sought. For many serious conditions, the healthy facility was the most mentioned place. In some instances, if a traditional healer exists renowned for curing certain conditions then the traditional healer would be the first choice. *"We go to the traditional healer so that what is causing the disease should come out."* The traditional healer or TBA[4] would be chosen if the health facility is very far or in the absence or reliable transport, the problem is experienced at night. *"We go for traditional healer when the hospital is too far."* Many respondents reported that in many cases, care would be sought from the health facility as well as the traditional healers or TBA.

3.3.6.3 Influences on the Decision to Seek Care

Respondents indicated that grandmothers mainly influence the decision to seek care. Some said the husband and others said the mother herself who influences this decision. The perceived state of the child or mother usually dictates the decision to seek care.

> *"When the infant shows serious danger signs we are compelled to go the hospital"*
>
> *"Is the child is very sick and we fear that the baby will die, we don't waste time but to find someone who can assist"*
>
> *"The condition of the child influences the decision to seek care"*

3.3.7 Danger Signs that show a Mother is not Well

Mothers and grandmothers highlighted a number of danger signs that a baby shows when he/she is sick. These include:

- Heart palpitations

[4] Many TBA are also traditional healers, therefore many services provided by the traditional healers can also be provided by them. In some cases, the specialized traditional healers would provide a service that an ordinary TBA who is also Traditional healer cannot provide

- The baby becomes weak
- They feel cold
- Abdominal pains
- Sore in the womb
- Anaemia
- Placenta remains inside when the baby is born
- Bleeding through the vagina
- Foul discharge
- Fainting/convulsions

> *"A lot of deaths are due to retained placenta in this area because usually some women stay very far from hospital and they die from it. This is common here we have lost a lot of women due to this."*

> *"If a woman convulses, it means she slept with so many men. We wait for her to reveal before going to the hospital. If she says no we call the husband to say something (if he has had many women). When the husband does not reveal, usually the wife dies."*

3. 4 COMMUNITY PRACTICES AND HSA INFORMATION

3.4.1 Roles of HSAs in Community Relating to Maternal and Newborn Care

When HSAs were asked to mention what their roles or duties were, many seemed to be fully conversant with their roles. The responses did not come spontaneously suggesting that they are not always conscious of their roles. Furthermore, they mentioned very few at the beginning and added more as the interviews progressed in response to certain questions. All HSAs explained that their duties were in two categories thus static (health centre duties) and mobile (community duties).

Table 13: HSA roles related with maternal and newborn health

- Immunization
  - Provide BCG, Vitamin A supplements to women
- Give health talks
  - Talks on breastfeeding,
- Growth monitoring
  - Weigh children
  - Screen malnourished children
- Supplementary feeding
  - Assist in supplementary feeding programs
- Data collection
  - Collect information on information associated with M&N health
- Community mobilization
  - Mobilize women for various maternal and newborn activities
- Registrations
  - Births
  - Women attending antenatal clinic

- PMTCT
  - give talks on the importance of mothers knowing their status
  -

3.4.1.1 Training Background in Relation to Job Description

HSAs indicated that they feel that their training does not prepare them well for the duties that they are expected to carry out. This was confirmed by all health workers, who reported that the training for HSAs is not well programmed and organized to adequately prepare them for their job responsibilities. HSAS feel that the training does not prepare them adequately for the duties that they are expected to carry out in the communities. They indicated that the topics covered in their training could be relevant, except that the depths at which they are covered make it difficult for them to benefit fully. The training has various faults that render it less valuable to the HSAs. A variety of reasons were mentioned that makes their background inadequate compared to the roles they are expected to carry out.

Table 14: Reasons for poor quality of training

Training not taken seriously both by trainers and trainees

> *"May be both sides (employer and employee) do not take the training seriously. This is because we are trained after being employed unlike when employment depends on whether you are trained or not"*

Trainings does not involve practical skills

> *"My training was relevant to what I am doing, except hat the duration was not adequate. Some lecturers just gave us notes to write without teaching."*

The content is shallow.

> *"I find it difficult to cope with some situations in the field like when I meet a retired medical person who don't want to be convinced on issues concerning health preventive and medical service simply because they are mostly are knowledgeable than myself."*

Course objectives not well explained at the beginning making difficult for them to see the link between what is taught and their job responsibilities

> *"I feel the things that are taught could be relevant but when they are teaching, they do not tell us why we should know what they are teaching us."*

3.4.1.2 HSAs Workload

The findings show variations in reported work loads of the HSAs. While majority expressed that their workload was very heavy, they qualified it by saying that it was not necessarily more in terms of the activities that they are required to perform but rather due to the constraints that make their operations less smooth. Without those constraints, they said their work load was reasonable. Many others said that that the workload was manageable. Various reasons were given for deeming the workload as heavy. The table below presents the reasons:

Table 15: Factors contributing to making HSAs workload heavy
Long distance between their home and catchments areas *"My workload is very heavy because of the distance between where I am staying and my catchments area. I have one village only but it takes me 3 hours to cycle one why."* Extra or outside their responsibility duties (NGOs) *"Duties that we were not initially to carry out make the workload heavy, for instance ARV counseling duties were given to us later yet they never promoted us."* Taking up other workers roles *"I can say hat my workload is heavy especially the work concerning the ARV clinic. This is because of the shortage of nurses we do most of the work otherwise, this is not part of my job description."* Transportation problems *"My workload is very heavy due to transport problems. I have only one village that I visit and 262 households but I don't stay in that village. I have to cycle for 10 km to reach my catchments area"* *"Cycling in that area is very difficult, it's a hilly place, most of the time I push the bicycle."*

Health workers indicated that they felt that HSAs were overloaded. They felt that most of them are overloaded not with their core responsibilities but with activities brought in by other organizations (NGOs) that bring instant and better honoraria's. Their focus on NGO activities provide a false sense of their being overloaded and make their core responsibilities suffer.

3.4.1.3 Spread of their Duties

When asked to explain how their duties were spread in a week, variations were noticed. However, all HSAs are guided by monthly work plans that most of them acknowledged were not religiously followed. In many instances, they were unable to follow them because of the intricacies of working with communities. For instance when there was a funeral in a community that they were supposed to work in, the work plan is disturbed. Their duties are categorized into routine and irregular duties. Their work plans are as well largely disrupted by the irregular duties. The following table presents selected patterns spreads for individuals HSAs:

Table 16: Various Spreads of HSA Duties
• 1 day for immunization • 2 days for community awareness (public meetings) • 2 days for medical help • 1 day for village inspection
• 3 days at a health centre (immunization) • 2 days field visits
• 2 – 3 times a week village visits (usually in the afternoons for 5 hours)
• 2 days VCT • 1 day village visit • 1 day growth monitoring • 1 day antenatal clinic • 1 day visit volunteers
• 2 days in the field • 3 days at health centre (vaccines, immunizations)
• 3 days in the community • 2 days at the clinics (usually in the morning, in the … go to villages
• 1 day or 2 days – VCT (clinic) • 1 day in the village • 1 day – growth monitoring

Commenting on the way their time is spread between the community and clinic or health facility, many HSAs said that they were supposed to spend three quarters (¾) of their time in the community and the remainder at health facilities. However the vice versa happens. A HSA commented:

> *"I sometimes visit the communities 4 times only in a month, because the work at the clinic is too much."*

HSA supervisors had different spread of time. In many cases they have on top of their supervising role their own catchments areas. This overstretches their time and makes it difficult for them to be available for their communities. One supervisor indicated the following spread:

- Tuesday - checking the plans for subordinate HSAs
- Mondays – sterilize specimen slides (TB)
- Wednesday – growth monitoring clinic, TB program, report writing

- Thursday – Nutrition clinics (fortnightly)
- Friday – sterilize specimen slides

This spread suggests that this supervisor has two days only for his community.

3.4.2 Community Perspective of Qualities of HSAs to be involved in Maternal and Newborn Health

Any person who is qualified to competently carry out the designated duties and has good manners was the most desired HSA. Respondents said they would expect the HSA to be an individual who is ready to work with the community, friendly and respectful.

Majority of the female respondents indicated that they did not mind the gender and ethnicity of the HSA. Few females as well as half of the male respondents indicated that they would be comfortable with people from any ethnic back group but preferred female HSAs compared to male. The following were comments
Comments from those who did not mind

> *"We don't care whether male or female provided they help us."*
>
> *"We don't mind if he/she comes from other tribes as long as he/she assists in the village."*
>
> *"He can come from other communities as long as he/she frequently visits (at least 2 times a week)."*

Comments from those preferring female HAS and maturity

> *"If the HSA is a female, she would know what their fellow woman is going through."*
> *"They should be mature enough, at least 30 years above."*
>
> *"I don't thing those not educated can assist, we need educated ones."*
>
> *"Should be mature enough and someone who has been trained so that he should teach us the right things."*

3.4.2.1 Perception of having HSAs trained in maternal and Newborn Health

The overwhelming impression of the respondents was that HSAs would be very valuable in the area of maternal and newborn health. Many said they did not see *"any problem"* and that *"It is good"* and *"The community will be happy with them visiting the community"* since *"They are our doctors so we cannot be shy with them because we want to be assisted."*

Respondents said that they saw many benefits with an arrangement where HSAs are involved in maternal and newborn health. The table below summarizes the benefits:

Table 17: Benefits for Engaging HSAs in Maternal and Newborn Health
Reduction in maternal deaths *"Maternal deaths will be reduced."* *"The HSAs will be right in the village and can assist in bringing the women to the hospital."* Would reduce the cost of child delivery if trained to deliver children *"They should be taught to deliver women so that they help during emergencies prevent people from using so much money going to the hospital."* *"They will see us at home without us looking for transport."* Problems will be dealt with before getting complicated *"Problems of women will be identified earlier since they are near to us."*

While health workers acknowledged potential advantages, they pointed out a variety of problems or disadvantages that would evolve with HSAs involvement in maternal and newborn health. The following were raised.

- The additional maternal and newborn health responsibilities would further compromise their core functions as well as the new roles.
- The new roles would require new supervisors, thus experts in maternal health. This would make supervision more complicated. Despite the integrated supervision process, the shortage of experts in maternal health would invariably make it difficult for them to supervise adequately. Furthermore, the maternal health experts themselves will be swamped with work.
- There is potential that HSAs would extend their roles to those that they are not expected to perform such some procedures that are done by midwives in the bid to enhance their 'doctor' image.
- Communities would develop false impression that HSAs would be providing the services that are provided at a health facility therefore no need to go to the facilities.

Potential disadvantages as presented by the grandmothers were that giving them this role would mean asking HSAs to *"assist the people even more when they assist quite a lot already"*, and that *"people would think that they are coming to the women on other issues not their job."*

3.4.2.2 Perception of having Male HSAs involved in Maternal and Newborn Health

Half of the male respondents as well as some women were of the view that female HSAs would be best suited to doing maternal and newborn health work. Various reasons were given for this preference. The box below summaries the reasons:

Table 18: Reasons for female HSA preference

Eliminate possibilities of infidelity

"It is good for women HSAs to visit these women than male HSAs because we cannot put a rat together with ground nuts" (Siungaike khoswe pamodzi ndi ntedza)

For a better atmosphere that would allow openness

"It is easy for the woman to open up to a fellow woman because a woman may be free with a fellow woman than a man"

Better performance

"Even if men were trained, they may not help properly because naturally women may do the work better than an untrained woman"

Women have natural experience with maternal and newborn issues

"Men do not have experience about what it means to be pregnant but a woman will understand better what a woman is going through"

Women prefer to be delivered by a fellow woman

"Here people are not happy even when a male nurse assists them during delivery. They want women"

Half of male respondents and majority of the female respondents indicated that they did not mind the gender of the HSA as long as the person could do the job. The box below summarizes their comments:

Table 19: Reasons for no gender preference

"There is no difference between male and female HSAs since all provide a service to the community"

"In sickness it doesn't matter whether it is a man or a woman. The woman wants to be helped so it doesn't matter as long as the person knows his/her job"

"It doesn't matter whether it is man or woman as long as the person is loving"

"It doesn't matter as long as the person is educated"

"Male HSAs are ok as long as they don't count waist beads"

3.4.3 HSAs Involvement in Community Activities

HSAs indicated that they are involved in various community activities. Apart from their duties, sometimes the community requests them to assist in developmental activities such as sunplat casting, writing proposals to government and NGOs asking for assistance. All HSAs indicated that they work directly with village health committees. However they are also in close contact with chiefs, work with TBAs and volunteers. Most of their activities are done with women.

3.4.3.1 HSAs Relationship with Community

The findings demonstrate that majority of the HSAs have good working and personal relationship with their communities. The communities receive them with great hospitality and respect them. The following are some comments made by HSAs in relation to this:

> *"The community receives me very well, when I arrive, they sometimes prepare nsima for me. When going home they give me chickens, sugarcane and firewood."*

> *"They receive me very well. When exhibit good manners, the community give back what you are giving them, thus respect."*

> *"They community respect me and call me a doctor. They expect me to provide preventive and curative services."*

> *"The relationship is very good, we work together and the community is convinced by the work that I do."*

> *"They respect us; they consider us good people who are there to help them, a doctor."*

The communities indicated that they had good relationship with their HSA. However some were not happy that the HSAs stay outside their village and they are unable to meet them more often. Few people indicated that there were some HSAs who were not well mannered and had bad reputation with the community. The main concerns were HSAs who had sexual relationships in the community especially if the were married and having extra marital affairs or had affairs with married women.

A few indicated that the relationship was not good. They said that their people are not cooperative. The following comments explain:

> *"Our relationship is not very good as people don't want voluntary jobs they want something out of every job."*

3.4.3.2 Communities' Expectations of HSAs

HSAs indicated that communities have various expectations that include:

Table 20: Communities' Expectations of HSAs
Be instrumental in reduction of health related problems *"Expect that my presence would reduce their health problems."* *"Expect me to give immunization to their children."* *"They expect that their health problems would be resolved when they forward them to me."* To be a source of health information *"Health committees expect me to advise them on health issues."* *"Expect me to provide health talk and encourage them to protect themselves from AIDS."* To provide services instantly *"The community expect me to assist them 'right there and then' by giving them medications."* *"Sometimes communities expect us to do things that we cannot manage such as to provide boreholes and clinics. Things that they themselves are supposed to source."* Provide curative services provided by doctors *"The communities' expectations of us are such that they expect us to do what real doctors do. Things like curing diseases."* *"Communities are not contented with what we do and find us not as useful. They don't want us to ask them to do sanitation activities but cure diseases as real doctors do."*

3.4.3.3 Home Visits

All respondents thought that home visits would be a good idea saying that HSAs would assist to reduce the problems that women and children face in their communities. When asked about possible benefits of the visits, many respondents mentioned that women's maternal as well as newborn problems will be identified very early. Simple problems will be solved in the communities thereby assisting people to save money as well as time spent when going to the hospital.

HSAs found the idea interesting and easy to fit into their activities since they already visit the communities regularly when the follow-up patients, e.g., TB cases to see if they are taking drugs or improving, inspect houses – sanitation, encourage and discuss issues related to family planning, hear peoples views are unable to talk in public (meetings), identify health problems of the people and their needs, collecting data e.g. pregnant mothers and under five children, conduct nutrition clinic follow-ups, disease surveillance (diarrhea and TB) for early diagnosis and to encourage people on hygiene

3.4.3.4 HSAs Views on Conducting Maternal and Newborn Visits

All HSAs indicated that they would be willing and comfortable to visit mothers and their newborn babies within the first days and week after delivery. A variety of reasons were given for their willingness. The box below shows these reasons:

Table 21: HSAs Reasons for willing to do Maternal and Newborn Visits

Responding to expressed community needs

"I would do this comfortably because some mothers have sometimes consulted us about such issues."

Enhance their professional image

"It would be good because it would enhance our picture as a doctor."

"I would look like an expert (ndioneka ngati shasha) as I feel frustrated to be referring patients every time even for things that I would deal with."

"It will be good because I would gain new skills from the training."

Provide an opportunity to intervene

"It will be good as we would be able to observe the dangerous cultural practices and we would be able to stop them."

"My work would be improved. With the training I would stop things women do. I hear that they use unclean things from a pestle to put on the child's umbilicus. So I would as an expert stop them."

The program would assist to increase their salary

"I would be happy to do this only that it would also be good for our salaries to be increased."

3.4.3.5 Constraints faced by HSAs

HSAs face many constraints as they deliver their services to the communities and health centers. The table below summarizes the constraints

Table 22: Constraints faced by HSAs

- Transport

  "Bicycles are faulty and lead to accidents"

  "Unable to use them many times because of lack of spare parts"

  "During rainy season, roads, rivers are impassable"

- Inadequate Remuneration

  "They are not paid enough money compared to what they do"

  "Difficult to claim allowances"

"They say they can not raise our salaries because we are not educated"

"No incentives spare parts for bicycles"

- Poor relationship with VHCs/Village Headman

  "They say we are working for him (HSA) when he is paid."

  "Some village headmen lack commitment."

- Lack of recognition

  "Many bosses do not respect us."

  "Bosses don't support or encourage us in our work."

- Harsh working conditions

  "During rainy season, they are not provided with facilities like rain coats and gumboots"

  "Poor housing facilities"
  "Geographical terrain (Chitipa) makes it difficult for them to ride bicycles"

- Low education and training

  "Our low education and training prevent us from participating in some activities"

  "Its unfortunate that there is no difference between MSCE and JCE in salaries"

- Unreasonable community expectations

  "Communities expect them to provide certain services that they cannot provide such as treating diseases"

  "I feel inadequate when all I can do is to refer patients to a health facility when what they expect from me is to treat them"

- Lack of skills and knowledge

  "Because of lack of refresher courses and trainings to update us on current knowledge on certain things, we feel inadequate"

- Lack of Resources

  "HSAs lack money and feel inadequate when they cannot assist people with simple things like assisting orphans with some money"

- Lack of Recognition

  "We are not considered as part of the health system but as ward attendants."

  "We are not supported as employees by the DHO, I lost a mother but no one supported me."

"Ward attendants are promoted from S3 to SE1 while as we are never promoted."

3.4.3.6 HSA Supervision

Both Health workers and HSAs reported that the supervision given to HSAs is not adequate. Officially, HSAs are supervised by HSA Supervisors, who can be HSAs or health assistants in their work stations on weekly basis. At times the Zone Supervisor, who is based at the zone, supervises them on monthly basis. The overall in-charge is the DEHO who is based at the district and he is also responsible for supervising HSAs on a monthly basis. The research also established that DNO, DEHO and AEHO have monthly meetings with the Zone and Senior HAS Supervisors. Majority of HSAs located at a health facility are supported by colleagues almost on a daily basis while those based in the communities are usually supervised once a month because the supervisors cannot manage to see them more often. Few HSAs reported being supervised twice a month. Sometimes HSAs are supervised more often if there is a particular activity taking place. In this case they might be supervised by NGO staff if the activity is conducted by NGO. HSAs based at health facility indicated that they receive constructive feedback, usually face to face.

*"They don't do fault finding, they tell us the things we can do to improve on what we do."(*HSA in Chitipa)

Majority of the HSAs based in the community reported that they do not receive supportive feedback. Some said that their supervisors do not explain to them what they are doing well or not.

*"I only see my supervisor come and take the data I collect but say nothing to me."**(HSA Thyolo)***

Most health workers confirmed that although a supervision schedule exist, usually it is not adhered to due to a number of factors:

"HSA Supervisors are not adequate to cover all HSAs."

"Distances to the communities where HSAs are operating is prohibitive."

"Workload of HAS Supervisors due to too many programmes operating in the communities"

Health workers reported that a supervision tool or checklist exist for supervising HSAs. However, only few senior HSAs were oriented on how to use this checklist. This bottleneck enhances unsystematic process of supervision.

3.4.3.7 Strategies to Improve Performance

When asked what could be done to improve the HSAs performance, a variety of ideas came up. The following things were suggested:

Table 23: Ways to improve HSA performance
• Resources should be made available (e.g., vaccines). • Improve transport (provide motorcycles). • Provide trainings on regular basis (short courses). • Increase number of HSAs so that they can concentrate on smaller numbers of households. • Increase there pay. • Provide incentives (promotions and better career paths). • Give them feedback. • Managers should support them emotionally. • Create career development paths that would allow people with JCEs to advance professionally. • Government should build better houses for them in the communities. • Spare parts should be provided for there bicycles • They should be given uniforms preferably several pairs as well as other things like rain coats, gumboots. • When hey work extra hours, they should be paid just like the ward attendants (LOCUM).

3.4.4 Care for the Mothers and Newborn

Women who attend antenatal clinics usually seek care for themselves and the newborn regardless of where they delivered. After delivering at home or at the TBA because they were unable to go to the hospital for reasons such as a child being born days before the expected date of delivery, the mothers would go to the hospital to have the baby given BCG and polio vaccine and for themselves to receive vitamin A. On the other hand, mothers who do not attend antenatal clinics at all and majority of those who attended at a TBA and end up delivering at home or TBA usually do not go to the hospital in the first days especially if the child or mothers do not experience major health problems.

3.4.4.1 Role of Traditional Healers, TBA, Chiefs in Antenatal and Intra Partum and Postnatal Care

Respondents indicated that traditional healers, TBAs and community leaders had a role to play in maternal and newborn health issues. Traditional healers' roles could be categorized into two, advisory and curative. Respondents said Traditional healers roles could include advising women to go for HIV test when they have health problems that could be HIV related. They could also advise women on various lifestyle issues that could assist them to attain a better health status. The curative role involves traditional healers managing cases that they are capable of managing. They can deal with conditions associated with witchcraft and other areas like influencing sex of the unborn child.

The TBA's roles were similar to those of the traditional healer given that some TBAs perform dual services, including that of traditional healer. However, TBA had additional roles that included identifying pregnant women to be referred to the HAS, encouraging women to go for VCT, sending women who would require health facility delivery on time and other services like weighing pregnant women.

Chiefs as well as other respondents indicated that they have a role to play in solving health problems in their community. Chiefs saw their roles in as advisory and managerial. Below are the common roles mentioned:

Table 24: Chiefs Roles

- Appointing people to assist the communities in times of emergencies.
- Appoint people in the community to find ways of solving the various problems that communities face.
- Organise transport to take people to the hospital.
- Make requests for health care support through ADC
- Encourage their people to go to the hospital or seek health.
- Encourage the community to implement or observe all health messages that they get from different sources

3.4.5 Exclusive Breastfeeding Practices

The findings show that majority of the mothers are aware of the need for exclusive breastfeeding. This knowledge is very high among women who attend antenatal clinics and most of them usually try to practice what they are taught by health workers. However, women who don't attend clinics and those that are guided by their mothers or grandmothers in newborn or child care do not follow the instructions given by the health workers.

> *"In this community people express the first milk (colostrum) and throw it away as they believe it is bad milk (sour)."*

They do this because this is the general belief by the elderly people. In terms of duration of exclusive breastfeeding, HSAs said that mother's breastfeed for 4 months at most and very few if at all do it for 6 months. This information was supported by mothers and grandmothers. Women fail to breastfeed exclusively for 6 months because they feel that the child does not get enough food (milk) when it is growing up.

Regarding breastfeeding practices, the table below summarizes all practices associated:

Table 25: Breastfeeding Practices

- A newborn cannot be breastfeed by another woman when its mother dies.
- A breastfeeding mother who falls pregnant is discouraged from breastfeeding as the child can get sick.
- It is not recommended that a child should stay for 6 weeks without water because the child's throat would dry.
- If the child breastfeeds on the first milk (colostrums) the child can get sick (amadwala chikasu)
- When a mother has been away from the child for 2 days or more she should stop breastfeeding because the milk is believed to have gone bad.

3.4.5.1 Promotion of Exclusive Breastfeeding

In order to promote exclusive breastfeeding practices various suggestions were made which included.

- Husbands should be taught on the advantages of exclusive breastfeeding since they would be the best people to teach and encourage their wives.
- Teach women the importance of colostrums.
- Volunteers should be encouraged to stress on the advantages of breastfeeding.
- Communities should be encouraged to police on breastfeeding mothers breastfeeding practices.
- Grandmothers should be taught on modern ways of caring for children as they usually insist on old practices like throwing away colostrums.

3.4.6 Communal Schemes to Assist In Maternal and Newborn Issues

The findings point to the fact that majority of the communities do not have transport plans or money saving schemes to assist in preparations for birth and to respond to maternal and newborn complications. However some chiefs or TBAs keep bicycle ambulances. Many indicated that communities use bicycles or locally made stretchers to carry their patients to the hospital.

Regarding referral system, HSAs are usually able to refer patients identified in the communities to health centres. At times they are able to use the health centre communication facilities to call for ambulance. Some HSAs indicated that under some circumstances they refer patients to TBAs.

Case A
An HSA was duty. The community brought an expectant woman who was about to deliver. The midwife was not available at the clinic. The people were happy that at least him was available and was going to assist in delivering the child.

Since the situation was critical, he called the district hospital to request for an ambulance. He was told that the ambulance was not available.

He then decided to invite the TBA who is close to the health centre to assist. The TBA came and assisted the woman. Fortunately the delivery was without complications.

3.4.6.1 Maternal and Newborn Information Conveyed to Women

A variety of information is conveyed to women by HSAs about maternal and newborn health.

- Personal hygiene
  "We tell women that they should clean themselves after delivery"
- Importance of health seeking
  "We advised that they should attend clinics"
- Importance of delivering at the right place
  "We tell women that they should always plan to deliver at the hospital and we tell them the dangers of delivering at home"
- Cord care
  "Women are advised on how to care for the cord"
- Family planning
  "In our health talks, we emphasize the important of having few children. We tell them that they should not have too many children if they are to remain healthy, preferably 3 and not more than 5 children.

3.4.6.2 Clean Birth and Clean Cord Practices

Half of the HSAs participating in this study indicated that they know about clean birth and clean cord practices. These were the ones who reported that they relayed this type of information to women. These practices are aimed at reducing morbidity through unhygienic conditions. The other half indicated that they knew nothing about clean birth and clean cord practices. Those who knew explained that clean birth and clean cord practices include the following:

- The place where the woman is delivering should be clean, mopped with chlorine and should be covered with a plastic paper.
- The cloth used should be clean.
- No water on the cold until it gets dry
- Washing the cord with spirit.
- Use of clean and new equipments like razor blades and cloth for the cord.
- Use of placenta pit and gloves.

3.4.7 Cultural Practices, Beliefs at Antenatal and Delivery Periods

The information from various respondent groups shows that various cultural practices and beliefs exist that are observed at antenatal and delivery periods. However, some groups downplayed theses practices and beliefs as ancient practices that are no longer observed. However, the information from the grandmother's mostly suggests that these practices and beliefs still exist and are observed. While majority of the chiefs acknowledged that the cultural practices are still observed some said they were not and majority said that not all practices known are observed. Few chiefs claimed that no practices were observed at all *"There used to be some cultural practices but as of now there are no such things because people have acquired knowledge on these ideas."*

The table below present all practices mentioned by various respondent groups:

Table 26: Delivery and Newborn cultural practices
• Relatives of the women who have given birth would abstain from sexual relations during the first few days. • The child is bathed with medicinal water when the umbilicus falls to make the child's eyes clear. • Put herbs on the head (liwombo). • Tie a medicinal rope round the neck. • After the cord falls the child's hair is cut.

Respondents reported that the practices have both advantages and disadvantages. The table below presents the advantages and disadvantages:

Table 27: Advantages and disadvantages of delivery and newborn practices	
Advantages	**Disadvantages**
• Abstinence protects the man from being harmed as well as the women from conceiving while the baby is too young. • Bathing the child in herbs cleanses the child from 'filthy'. • The hair is cut to make the child's head clean, therefore it is hygienic. • The herbs put on the head helps the anterior frontanelle to harden up. • The string helps the neck to be strong.	Harmful or Disadvantages included: • The herbs on the anterior frontanelle can kill the child. • The rooming in (chilowero) practice prevents the woman or child to go to the hospital. • Children die because they are not taken to the hospital based on the beliefs.

3.4.8 Identification of Pregnancies and Deliveries at Village Level

Respondents were asked to suggest ways on how best pregnant women could be identified for HSAs to visit in the communities. A variety of ideas were presented by the different respondent groups. Majority of the chiefs and TBAs indicated that the

best way to identify pregnant women to be visited by the HSA would be through the TBAs, thus they would give names of all pregnant women who had visited them to the HSA. VHC members were also mentioned as people who would identify the women and inform the TBA who would in turn inform the HSA. On the other hand, majority of the men (husbands) indicated that it should be the responsibility of the pregnant woman to report to the HSA through the clinic that they are pregnant. *"The woman should go to the under five clinic to register that she is pregnant or that she has a new baby and the HSA should use the register to identify the pregnant women"*. Some husbands suggested that it should be the responsibility of the entire community to inform the about women who are pregnant in the community *'people from the village should tell the HSA that there is a newborn or that a certain woman is pregnant"*. Few husbands suggested that HSAs themselves should identify the pregnant women in the community.

The grandmothers and mothers gave the most varying ideas on how to identify pregnant women for HSAs to visit. The table below summarises these suggestions:

Table 28: Ways to identify pregnant women in the community

Identified by HSAs during village inspections *"The HSA can identify pregnant women when he is visiting the community"*
Identified through surveys conducted by HSAs *"HSAs should do surveys to find out who is pregnant in the community"*
Identified by the chief through the VHC *"The chief should identify all the pregnant women through the VHC"*
Registers *"There should be a register of all those who are pregnant or just delivered"* *"HSAs can use the register at the hospital and go to the women"*
HSAs consult TBAs *"The HSA can check with the TBA"*

From the various suggestions, it seems the most prominent and feasible method is the use of Traditional birth attendants as well as registers to identify the pregnant women. These methods would be effective especially if implemented together after proper community sensitization.

3.4.9 Best Time for Post-Natal Home Visits

Respondents indicated that it would not be appropriate to put a specific time for the postnatal visits. Many argued that if the visits are to be done to address a specific need, then anytime that the need arise, would be the best time. On the other hand if the visits were routine without any emergency reasons then it would be necessary to visit the woman in the first few days after delivery because this is when many

women or the newborn could experience grave problems. VHCs specifically indicated that it would be good that HSAs should visit soon after delivery or ideally during the first week of delivery.

> *"The HSA should visit when the woman has just given birth because at this time the woman may be sick" (VHC member)*

> *"HSAs should come during the first week to advice women on what needs to be done"*

> *"After the woman has just been discharged from the hospital, before they go for check-ups at the hospital because they may be well when they are at the hospital and things may change when they get back home"*

Some respondents felt that it would be appropriate for the HSA to visit a week after birth in conformity with the culture. They felt it was necessary for the rooming inn period to be observed.

> *"Due to our culture a baby is visited after 1 week"*

3.4.9.1 Best Place for Home Visit

Majority of the Respondents indicated that they would prefer the visits to occur in an open place so that relatives or neighbors can see what is going on.

> *"They should be outside the home to avoid people getting suspicious"*

> *"They should be outside because some HSAs are promiscuous"*

Despite this preference, most of these respondents were flexible about where the visit should be held citing situations where the mother or the newborn could not leave the room. Under such circumstances, they said it would be appreciated that the HSAs should enter the room together with someone and upon invitation. Many others indicated as well that the visits should be held inside the house especially if there is enough space as they would be able to talk more freely.

> *"The HSA will just be doing her/his job it doesn't matter where they are meeting, it could be inside or outside on the veranda"*

Very in common suggestions included that the HSAs should meeting the women at the clinic and that all the postnatal mothers could be called to assemble at the chief's place where they could meet the HSAs.

3.4.9.2 Duration of the visits

Majority of the respondents felt that the visits should last as long as the needs of the visit require. *"The HSA should work until he/she finishes his/her job. No need for restrictions, the length of the visit should depend on the problem."*

Considerably many others said the visits should not last more than 30 minutes to prevent the HSA spending more time on person and therefore deprive other people of the services. Others felt it would good for the visits not to last long to avoid husbands becoming suspicious.

> *"They should not meet for more than 30 minutes because if they stay longer they may start doing other things other that their job and therefore they may not be able to visit other people"*

> *"Men are different, some may be jealousy and there may be problems in the family if the HSA takes longer"*

3.4.9.3 Involvement of other people in the visits

Respondents were asked if they thought it would be necessary for some people to be present during the HSAs visits. Most of the VHCs suggested that whenever possible, husbands should be present during the visits. Another common response was that relatives could be present although some respondents expressed misgiving with the idea arguing that sometimes relatives would not keep secrets. Respondents particularly recommended that the relative should be a woman so that they are free to talk. Some potential people to be present included the chief, community volunteers, the committee members so that they can follow-up properly and be there as evidence.

However other respondents strongly felt that the visits should not involve other people. They argued that both the HSA and the women would be free if they are left alone. Some said the woman should choose whether to be alone or to have someone else around.

3.5 MAPPING INFORMATION

The study also aimed at determining the distribution of HSAs in relation to population and service catchment areas in each target district. Also considered was the location of villages, population densities and proximity to health posts. During data collection it was established that districts do not have detailed information on this. However to establish this, it would require a full fledged exercise with census related elements.

In terms of distribution of HSAs, Thyolo district has a total of 290 HSAs. Of these 32 are employed by the Tea Estates and 258 HSAs are distributed in the health centres and communities.

On the other hand, Chitipa has a total of 94 HSAs. Regarding coverage, Chitipa has an average coverage of five (5) villages per an HSA.

Dowa district has a total of 180 HSAs. On gander, 83 HSAs are females while 87 are male. The average coverage ranges from 1900 to 2035 households per HSA. Most of the HSAs are concentrated in Health centre along the main roads (Kasungu and

Salima roads) and trading centres. About 50% of the HSAs in Dowa district stay within their catchment areas. However, most female HSAs are mostly found around the trading centres as they claim to follow husbands.

4. DISCUSSION AND RECOMMENDATION

The research has revealed various home and community practices related to maternal and neonatal care. Communities are very keen to improve their quality of life through good health. The findings point to the fact that families are aware of the need to seek care. However, the circumstances at household level restrict them from seeking and accessing care. Main constraints at household level to seeking care include the rampant poverty that make it extremely challenging at times to seek care when they can only do so if they have certain resources. Compounding the picture are the practices at community level that ideally evolved as coping strategies when they had no other means of dealing with the problems. Some practices such as chilowero are interesting in that they provide time for the mother and baby to bond, excluding the father. However, chilowero means the baby is not supposed to go out of the house before a certain period elapses. This period range from 4 to 14 days. During this period, the baby might be denied medical attention as it would be difficult to take it to the health facility. Another practice closely related to this is cleansing of a mother who has been unable to deliver the placenta. The woman is supposed to remain indoors for several days and treated with herbs before she can be taken to the hospital. The study shows that these practices are still practiced and therefore it is recommended that the project should conduct some in depth studies as part of the program to establish how these practices can be dealt with.

The study also reveals that men are very influential in maternal and newborn health than it is perhaps imagined. Men decide places of delivery as well as whether a newborn child can be taken to a healthy or not. It is apparent that men are instrumental in the decision making process because usually the decision made would have financial implications and ideally the men finances the activities decided. The study shows that men do not see themselves as active players in the delivery or new born care process. It is also clear that men are not conversant with maternal and newborn health issues. It would therefore be important that any interventions should have a strong component looking at men's involvement in maternal and newborn health.

This research concludes that huge gaps in knowledge and practice of essential maternal and neonatal care exist among people in the three districts. It was clear that some information on various things was reaching some people but still there are more people who are not aware of the new things. Some respondents in FGDs were surprised when their colleagues said things that they did not know. For instance many grandmothers were surprised to hear that babies should not be given a bath immediately and that warm water should be used. There is therefore a huge need to fill these gaps through intensive community campaigns. This could be done by

inviting women and grandmothers as well as men to homogenous meetings where they could be taught.

The findings strongly suggest that communities find HSAs role in the communities very important. HSAs involvement in maternal and newborn care was perceived positively in that they would strengthen the maternal and newborn health activities in the community. It is encouraging that HSAs already take part in activities associated with especially maternal health and there initiation into newborn health activities would not be perceived by the communities as a complete new role. HSAs themselves welcome the idea as they see it enhancing their health workers image in the community. If trained they feel that they would be able to confidently deal with maternal and newborn health issues that are common in their catchment areas but at the moment they are unable to do anything that makes them feel inadequate and exposed as not 'doctor' enough an image that the community have about them. HSAs ably pointed out how they would assist in addressing some of the morbidity problems in maternal and the newborn if they were involved. It is therefore very clear that both HSAs and the communities would work together maternal and newborn health activities. Probably one of the most important finding is that these activities would easily be integrated into their routine activities. For instance they would visit the pregnant women when they go to do community inspection and therefore the new role would not necessarily burgeon their workload.

In order to make this initiative successful, it would be very important for some of the HSAs' concerns to be addressed. Some of the concerns raised were lack of recognition by the health system of their role. They feel that even when they have been instrumental in the success of certain projects they are not acknowledged. In many cases credit for the success is given to other health professionals and not them. It is therefore recommended that efforts should be made to recognise their work. This could be achieved by among other things, revisiting their career paths to create more professional growth space. HSAs would be motivated if they were able to rise through a certain professional hierarchy based on performance and experience. It would also be helpful if their salaries were revisited and their status in the community uplifted by constructing modest government houses for them. It is further recommended that HSAs should be given enough resources inform of uniforms at least two pairs as well as other essential things like gumboots and raincoats to be used during rainy season.

One of the main constraints to HSAs work is transport. The findings point to the fact that HSAs struggle to maintain their bicycles. It is clear that the bicycles were given to them to alleviate transport problems whereby they could use them both for personal as well as job related activities and that it was expected that they would incur the costs for maintenance. From the research it was clear that HSAs find it difficult to maintain these bicycles. It is therefore recommended that ways of assisting them in bicycle maintenance should be explored.

Although generally accepted and positively perceived in their communities, it is apparent that some HSAs have poor relationship with their communities and are nor highly regarded because they lack interpersonal skills, knowledge of community dynamics and other important social and organizational skills such as time management. It was observed that although HSAs have time tables and activity plans, they would be more effective if the had time management skills as well as conflict management skills. Apart from these skills being handy in doing their health related activities, communities consider them high functioning people *'doctors'* and see them as change agents. They are therefore consulted in social and behavioural dynamical issues. It is therefore recommended that HSAs should be offered periodical or regular refresher courses to keep them abreast with new developments in different health areas.

HSAs are regarded as reference persons on health matters in the communities. However they are unable to assist other people when their knowledge proves inadequate. It would be very important as well that HSAs should attend most, if not all health trainings offered to various groups such as TBAs in their communities. This is because, most TBAs are preliterate and they are unable to remember some of the things they learn in such trainings. When they forget, they consult the *doctor* (HSA). However HSAs reported embarrassing situation when they tried to assist only to be told that what they were saying was discarded method but there were new ways of doing things.

It is apparent that generally health workers find that the involvement of HSAs in maternal and newborn health would have some positive results. However the study also revealed that although they accept the idea, many health workers have reservations. There seems to exist a feeling among them that the HSAs would try to take over the responsibilities of nurses or midwives and expose women to various dangers. They also see the possibilities of maternal and newborn health services being compromised if communities became dependent on the HSAs in the community and gave less attention to seeking care form the health facilities. This is possible in that even those who could have gone to health facilities would be compelled to remain in the community given the false impression that the 'doctor' is within their community. With these reservations, it is possible that health workers may not support the program entirely. It is therefore recommended that effort should be made to encourage health workers to open up and freely express their reservations about the project. It is further recommended that they should express their true feelings related to the program and their professional guidance of the nature of the program.

The fears expressed by the health workers such as assuming a 'doctor' role in the community are no unfounded. It would therefore be important that HSAs should be fully aware of their roles and limits in the various roles. It is therefore recommended that deliberate effort should be made to encourage them to accept who they are than to lurk in the false image of a doctor that brings pressure on them to act like one.

Since this would predispose them to making healthy related mistakes in the community.

4.1 SUMMARY OF RECOMMENDATIONS

The study revealed that HSAs' workload is heavy largely because of other factors other than their expected core responsibilities such as major constraints like transportation problems and their involvement in activities brought by other non governmental organizations. These constraints as well as the other engagements require that they should plan their time very well in order to prevent their core responsibilities from suffering massively. It is therefore recommended that HSAs training should include time management to assist them manage their time properly.

It is obvious that some duties being undertaken by HSAs could be shared or harmonized with those of the VHCs. VHCs comprised of substantial members with primary education or even retired health workers or other professionals could ably execute some roles currently undertaken by HSAs. It is therefore recommended that small studies should be done in order to assess the VHC potential to undertake particular roles. This could reduce the workload of HSAs.

HSAs could be more efficient at community level if they were endowed with interpersonal and community dynamics skills. It was noted that some HSAs were unable to get the full corporation of their communities because they were unable to understand the dynamics of the community. It is therefore recommended that HSAs should be given interpersonal and community dynamics training in addition to the technical areas they cover.

HSAs are known as doctors in their communities which raises a need within them to present a doctors' persona. This is advantageous in that they are encouraged to work hard and make them willing to be trained and master any skills that would enhance this image. However, this can have negative effects in that they may be tempted to play the doctor in circumstances where they would need to refer the patient to the hospital. It is therefore recommended that HSAs should be reminded of their status and encouraged to work within the boundaries that their training prepares them for.

In order to ensure a steady presence of qualified healthy personnel in the communities, it is recommended that health professionals should carry out community service after qualifying. This could be done in such a way that the worker will have done their internship and is therefore able to be on their own with minimum supervision if at all. The DHO would be available for to conduct monthly debriefing meetings with the professionals. This arrangement would be effective if proper housing and other incentives were made available to the people.

The research reveals that there is information about maternal and newborn health that is misunderstood in the communities. It is therefore recommended that during

implementation of the project, studies on specific issues within areas should be conducted to establish the nature of the issues.

Since it was difficult to get information on mapping, it is recommended that a full fledged study with census like elements should be conducted.

It is therefore recommended that effort should be made to encourage health workers to open up and freely express their reservations about the project. It is further recommended that they should express their true feelings related to the program and their professional guidance of the nature of the program.

It is therefore recommended that deliberate effort should be made to encourage them to accept who they are than to lurk in the false image of a doctor that brings pressure on them to act like one. Since this would predispose them to making healthy related mistakes in the community.

Although the HSA seem the best and natural cadre to be trained in maternal and newborn care, the challenges noted ought to be taken seriously. Assuming hiring a new cadre is complicated it is recommended that involvement of HSAs' in maternal and newborn health should not end up overloading them, starving other activities that they are involved in or creating conflicts or animosity with other health personnel and communities at large.

Annex 5

Retrospective Evaluation of Kangaroo Mother Care Practices in Malawian Hospitals

~DRAFT~

July – August 2007

Ministry of Health

Report compiled by
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ACRONYMS

ACCESS	Access to Clinical and Community Maternal, Neonatal and Women's Health Services
BCC	Behaviour change communication
CHAM	Christian Health Association of Malawi
DHO	District Health Officer
DNO	District Nursing Officer
EBM	Expressed breast milk
ENC	Essential newborn care
EU	European Union
HSA	Health Surveillance Assistant
IMCI	Integrated Management of Childhood Illnesses
KMC	Kangaroo mother care
LBW	Low birth weight
MoH	Ministry of Health
NGO	Non-governmental organisation
NGT	Nasogastric tube
PEP	Perinatal Education Progamme
PHC	Primary health care
PPT	Powerpoint
QECH	Queen Elizabeth Central Hospital
RHU	Reproductive Health Unit
SNL	Saving Newborn Lives (a Save the Children global programme funded by the Bill & Melinda Gates Foundation)
SWAp	Sector-wide approach
TAK	Trotro An-Koditra (Madagascar)
TBA	Traditional birth attendant
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WHO	World Health Organization

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The report contains the views of the authors and does not necessarily reflect those of the donors or the government of Malawi.

KEY MESSAGES

1. Preterm birth is the leading cause of the world's four million newborn deaths. ***Kangaroo mother care (KMC) is an evidence-based, feasible solution*** that helps keep the newborn warm, promotes breastfeeding and reduces infections, yet is still at very low coverage in Africa and could be integrated into existing maternal and child health programmes.

2. This retrospective assessment of KMC was undertaken ***to inform the scale-up of KMC in Malawi and more widely in Africa.*** Malawi is one of the few low-income countries in Africa with almost 60% deliveries in facilities, essential newborn care and KMC included as part of pre-service and in-service training, and a national KMC policy. Seven hospitals with a two-to-five year history of KMC implementation and support from Saving Newborn Lives/Save the Children were assessed and five were found to be implementing KMC successfully and sustainably. Other findings and also missed opportunities are described in detail in the report, and the findings of each visit are given in the appendix.

3. ***Scaling up of KMC is achievable.*** KMC could be practised in all facilities where women give birth. It does not require special beds or equipment, but it does require staff who are skilled in KMC, as well as ongoing supervision and policy support. Training for KMC can be condensed into two days for clinical and implementation skills as long as follow up on-site facilitation is provided. Clinical skills for KMC alone can be taught in half a day if the other essential newborn care skills have been acquired. If modular training materials are adapted from existing materials integration with other training courses would be possible. Community ownership and materials to help families understand and practise KMC are also important. A suggested approach to modular implementation and training materials is laid out.

4. ***A health systems approach to newborn care and KMC*** is important in order to provide quality care for the highest number of families and produce sustainable results. Either a "big bang" or a phased-in approach could be adopted. Links between the public and private sector (e.g. CHAM) and between levels of care need to be considered, as well as the human resource questions regarding who can do what and which tasks could be delegated, and how supervision and on-site facilitation can be achieved until the process is institutionalised. Ideas are outlined for scaling up within the Malawian context.

EXECUTIVE SUMMARY

Background

Globally 4 million babies die in the first month of life and 27% of these deaths are directly caused by preterm birth. In addition, preterm birth is a major risk factor for babies dying of other causes, especially infections. Most preterm babies who die are moderately preterm (33 to 36.9 weeks of gestation) and could be saved without intensive care. In Malawi preterm birth is the leading cause of newborn deaths. Keeping these babies warm, feeding them regularly and preventing infections are key elements in improved survival, in conjunction with the timely recognition and management of complications such as respiratory distress syndrome, infections and jaundice.

Kangaroo mother care (KMC) is a method of care for newborns, especially those born preterm, whereby a baby is strapped skin-to-skin to the mother's chest. It contributes to thermal regulation, the reduction of infections, better breastfeeding, and improved infant growth. This low-cost method, initiated with the support and supervision of the health care staff, empowers the mother to become her baby's primary caregiver.

> *"Kangaroo-Mother Care should be a basic right of the newborn, and should be an integral part of the management of low birth weight and full-term newborns, in all settings and at all levels of care and in all countries".* (Bogotá Declaration, 1998)

A challenge for KMC is the scaling up of implementation to all health care facilities providing care at the time of birth. Malawi was one of the first countries in Africa to take on this challenge. Between 2002 and 2004, Save the Children's Saving Newborn Lives program funded by the Bill & Melinda Gates Foundation, collaborated with the Malawian Ministry of Health (MoH) to develop an Essential Newborn Care (ENC) package. In addition, seven hospitals were assisted by Save the Children to complete intensive KMC training at Zomba Central Hospital (ZCH) and also received support for implementation.

Purpose

The purpose of this evaluation was to undertake a retrospective assessment of the status and quality of KMC implementation in Malawian hospitals, with a view to making recommendations based on lessons learned for sustainable scaling up to more sites including health centres. In addition, the available education and training materials on KMC were reviewed in order to develop a KMC action kit including less intensive, modular training that could be used in Malawi and other African countries wishing to take KMC to scale.

This report contains three main sections:

- Findings from the visits to the hospitals and opportunities for immediate action
- A review of existing materials used in KMC
- Ideas for the way forward in scaling-up KMC

Findings from the visits to the hospitals

Malawi has a national KMC policy that has been developed under the auspices of the Malawi Ministry of Health. There also appears to be substantial awareness of the importance of ENC and KMC principles among health workers in general and in health care facilities that were not part of the original group of hospitals earmarked for implementation. ENC and KMC have also been included in the relevant pre-service curricula of different health worker cadres.

The study team visited six hospitals that received assistance from Save the Children and conducted a telephone conference with the seventh. In addition, one mission hospital, one community hospital, and one health centre that had not received Save the Children support were also visited. Of the seven hospitals supported, five have implemented KMC successfully and sustainably. The other two have KMC wards, but appear to have challenges in achieving long-term sustainability. Good use is being made of posters and counselling cards for KMC; and the KMC register provided by Save the Children is being used in at least six of the hospitals, and even in other sites although without systematic implementation. The quality of record keeping varies greatly; and there is also some variance in the discharge criteria used. The fact that facilities that had not received Save the Children assistance also made attempts at implementing KMC, using existing resources, demonstrates the demand for and do-ability of KMC. The presence of a "guardian" (usually a relative) to assist the mother while in hospital is one of the strengths in the Malawi health system.

Staff shortages are one of the main challenges in ensuring sufficient training in KMC and the establishment of sustainable KMC practices. As a result of these shortages there is insufficient nursing and clinical supervision in some units. Staff rotations also result in the loss of staff with skills in KMC, which becomes critical when new staff members are not orientated adequately. Despite these hardships, the dedication of staff did not go unnoticed.

Another primary challenge is the fragile follow-up system of preterm babies after discharge. There are very few means of ensuring that mothers return to the hospital or go to the nearest health centre for review. Giving incentives to mothers is not sustainable in the long run. The main reasons for mothers' failing to return to the hospital for follow-up care are transport difficulties (no transport available at night or the cost of transport) and the death of the baby. Different reporting lines between central, district and mission hospitals and health centres contribute to the weakness of the referral links between some of the facilities.

Opportunities for immediate action

Three missed opportunities were identified that could receive immediate attention without any additional costs to the health services apart from training and awareness raising:

1. *Systematic introduction of intermittent KMC* for stable babies who are still in a neonatal unit or in a heated "transit" nursery
2. *Strengthening of current feeding practices for preterm babies* by using a standardised job aid for calculating volume of feeds, by introducing proper record keeping of volumes and numbers of feeds per day for each baby, and by providing better support and guidance to mothers regarding feeding times and the volume of feeds required
3. *Transporting babies from home to facilities or between facilities in the skin-to-skin position,* which could help prevent the potentially lethal condition of hypothermia

Review of existing materials on kangaroo mother care

Malawian and South African KMC training materials, guidelines and reports were listed and reviewed, target audiences for KMC orientation and training were identified, and a draft training programme for core and comprehensive skills training was created. Proposals were developed for a KMC action kit that would contain the different training materials needed for scale-up.

There are many relevant materials with similar principles that can be adapted and combined into a modular approach to local settings. With regard to family and health worker visual materials, the poster developed in Malawi is widely used and displayed, in addition to the set of counselling cards. Some of the posters used in South Africa were also observed in Malawi KMC units and postnatal wards. With regard to training and implementation materials, the Malawi KMC training manual and ENC materials, as well as the South African KMC implementation workbook, contain sections that could form the basis of revised training and implementation guidelines. Other useful materials are the World Health Organization (WHO) ENC training course and the Integrated Management of Childhood Illnesses (IMCI) algorithms used in Malawi. Furthermore, there are multiple protocols and job aids available for many aspects of newborn care, including ENC, KMC and the care of small and ill newborns.

The main recommendations are that materials and training should include principles for implementation as well as clinical care, that training in KMC should be shortened to two days off-site training for key role-players only, and that on-site facilitation of the implementation process should be an ongoing activity for two to three years.

Feasibility of scale up of KMC

All the facilities visited were positive about KMC and the potential for scaling up in Malawi. It appears that scaling up is feasible and sustainable within current health system constraints, if crucial conditions such as the following are addressed appropriately during the planning and implementation phases:

- Active support and involvement by management at all levels
- A trained and experienced person to drive the process under the auspices of the Ministry of Health
- Good communication and consultative participation at all levels
- Selecting the right people for training and providing ongoing support after training
- Strengthening current lines of communication between different levels of care
- Sensitisation of community structures like health surveillance assistants (HSAs) and local leaders to promote good communication and support, especially after the babies' discharge
- The integration of KMC services into the general system of a facility right from the beginning, thus avoiding KMC implementation being viewed as a project
- Establishment of a community follow-up system that is integrated into the maternal and child health program

The following are a number of shifts in thinking about the planning and execution of a scale-up process that have proved to be effective in other countries:

- The process should be integrated into the health care system and other programmes and packages and should not be driven vertically.

- Leadership should be by the Ministry of Health and local officials and not by NGOs, expatriates and outside consultants.
- Implementation should be according to a locally adapted and owned model, starting with whatever resources are available.
- Babies should not be discharged directly from tertiary care to home, but should move through a continuum of care. KMC starts with messages in antenatal care. It is practised in obstetric care with skin-to-skin contact and breastfeeding immediately after birth and continued in neonatal care with intermittent and continuous KMC, ultimately linking to postnatal care for referral and follow-up.
- Off-site training that takes health workers out of the system for five or more days at a time is not practical, but short, off-site training for selected leaders followed by on-site facilitations by a central trainer who devolves responsibility to local supervisors may be more effective.
- Continuous monitoring of quality through on-site facilitation, supervision and moral support is essential.

Ideas for KMC scaling up within a health systems context

The first decision that confronts any Ministry of Health wishing to scale up any innovation is the choice between two main approaches: the "big bang" approach (scaling up to all facilities at the same time) or the "staggered" approach (scaling up in a phased manner over a period of a few years). A detailed three-year timeline for initial implementation, using the "big bang" approach, is proposed. This includes three to nine months for awareness and sensitisation (advocacy), three to six months for initial training of key role-players, six to nine months for multiple facilitation visits to the individual health care facilities targeted for implementation, six to nine months for progress monitoring, three months for the summative evaluation, ending with a 12-month period of sustainability support. Responsibilities to be taken up at national, district and facility levels are also elaborated.

A model for monitoring progress with the implementation of KMC is proposed, with three phases (pre-implementation, implementation and institutionalisation) and six steps (creating awareness, commitment to implement, preparation to implement, evidence of practice, integration into routine practice, and sustainable practice). Some important principles for KMC implementation include the identification of drivers of the process who should be held accountable for progress, KMC as a fixed point on the agenda at meetings during the implementation process, continuous support for implementation until KMC has been institutionalised, inclusion of KMC responsibilities in the job descriptions of health workers, multidisciplinary team work (with strong involvement of medical and clinical officers), flexible adaptation of existing structures, and a belief that people can do it.

In conclusion, KMC could be implemented in a sustainable manner in Malawi health care facilities without many additional resources. Supervisory measures should, however, be strengthened for mothers and babies to receive adequate quality care.

1 INTRODUCTION

1.1 Background

1.1.1 Saving newborn lives through kangaroo mother care

Globally 4 million babies die in the first month of life and 27% of these deaths are directly caused by low birth weight (LBW) and/or preterm birth.[1] In addition, preterm birth is a major risk factor for babies dying of other causes, especially infections.[2] Most preterm babies who die are moderately preterm (33 to 36.9 weeks of gestation) and could be saved without intensive care. Keeping these babies warm, feeding them regularly and preventing infections are key elements in improved survival, in conjunction with the timely recognition and management of complications such as respiratory distress syndrome, infections and jaundice.[3]

Kangaroo mother care (KMC) is a well-known method of caring for babies, especially those that are preterm. It is a low-cost and feasible method of caring for LBW and preterm babies at all levels of care and in all settings.[4] The baby is strapped to the mother's chest, skin-to-skin, to provide warmth and promote regular breastfeeding. Infections are reduced, as the baby is colonised by the mother's skin commensals instead of pathogenic bacteria and is protected by the antibodies in breast milk.[5-6] KMC has also been shown to increase breastfeeding rates and duration, and weight gain.[7-9] While practising KMC, and with the support of the health care staff, the mother is empowered to become her baby's primary caregiver, which increases the baby's chances of survival at home.[10] A number of studies have shown a significant reduction of in-hospital mortality with KMC, including mortality in low-resource settings. [7,11-15] The implementation of KMC in low-resource settings is also feasible and acceptable.[16]

The Bogotá Declaration of 1998 contains the following statement on KMC: *"Kangaroo-Mother Care should be a basic right of the newborn, and should be an integral part of the management of low birth weight and full-term newborns, in all settings and at all levels of care and in all countries."*[17] This is an important message for any country that is in the process of scaling up care to save newborn lives and achieve the United Nations' Millennium Development Goal (MDG) 4, which is to reduce child mortality.[18] The implementation of KMC should be considered a basic right and also a key strategy in saving lives at low cost.

1.1.2 Scaling up experiences in kangaroo mother care elsewhere in Africa

The feasibility of the extensive implementation of KMC has been demonstrated in at least four provinces in South Africa. The South African Medical Research Council's Unit for Maternal and Infant Health Care Strategies (MRC Unit) – in collaboration with the University of Pretoria and Kalafong Hospital – has a long-term research programme on the implementation of KMC and the use of different outreach strategies in scaling-up processes. Quality and sustainability improved through the use of on-site facilitation.[19] The Unit also developed an implementation kit for use in scaling up, as well as a scale for assessing implementation.[19-21]

In Madagascar KMC or Trotro An-Koditra (TAK) was implemented in the Befelatanana Hospital in Antananarivo in 2003. The TAK programme was expanded nation-wide to include health workers from central and district hospitals and health centres. It also included the training of traditional birth attendants. A curriculum and training and information materials were developed and adapted for the training.[22-23] In Nigeria three KMC training workshops were held between 2004 and 2005. Senior paediatricians and neonatal nurses from public tertiary and secondary hospitals were involved in a KMC training workshop in 2004. Another two

workshops were conducted subsequently where doctors and nurses practising in secondary and primary health facilities in the southern part of Nigeria were trained. The outcomes of this initiative are unknown.[24] In other African countries there are individual hospitals, mostly tertiary institutions, that have a KMC programme, but there seems to be no other evidence of the large-scale implementation of KMC in any other country.

1.1.3 Essential newborn care and kangaroo mother care in Malawi

Between 2002 and 2004, Save the Children was working with the Malawian Ministry of Health (MoH) to develop an Essential Newborn Care (ENC) course, which included a brief introduction to KMC. The ENC course was widely implemented in Malawi and incorporated into pre-service training at the College of Nursing. At the same time KMC was introduced and implemented in seven hospitals in Malawi. KMC training was offered separately at Zomba Central Hospital (ZCH), taking the form of a five-day workshop. In 2005 the Government of Malawi developed a national policy for KMC (see Appendix III).[25]

Malawi has made remarkable progress in reducing mortality in infants under the age of five, but during the same period there has been very little reduction in neonatal deaths. Addressing maternal and neonatal deaths is a key MoH priority. In terms of the Road Map for Maternal and Newborn Health[26] and linked to the national Essential Health Package, the MoH is now aiming to scale up the implementation of KMC and ENC to district level. A number of partners and donors are working with the Government of Malawi to advance this aim. At the same time the MoH and partners are acutely aware of the heavy burden of training, which at times exacerbates the human resource crisis in the country by withdrawing available workers so that they can attend multiple in-service training courses. Training courses on maternal, newborn and child health are currently being reviewed and the goal is to harmonise all these courses into one modular package.

2 PURPOSE OF THE EVALUATION

Many other African countries are also ready to introduce and scale up KMC and ENC and the partners will be working with some of these countries, using Malawi and South Africa as learning resource countries. In order to be able to inform both moving to scale at district level in Malawi and the same process in other countries, it was necessary to first assess carefully what had worked in Malawi and what had not. Different materials have been developed and utilised for the training of health care workers in Malawi and South Africa. It was necessary to revise the existing KMC training materials to ensure the inclusion of adequate clinical and operational guidelines, as well as guidelines for adaptation to various settings and countries.

Two consultants from the South African Medical Research Council's Unit for Maternal and Infant Health Care Strategies (MRC Unit) and the University of Pretoria with experience in provincial-wide implementation of KMC in South Africa, Dr Anne-Marie Bergh and Dr Elise van Rooyen, were requested to assist with this review, which took place over the period 23 July to 4 August 2007. They were joined by Dr Joy Lawn, Senior Policy and Research Adviser for Save the Children's Saving Newborn Lives, and the following members of Save the Children Malawi Country Office Newborn Health Programme team: Ms Evelyn Zimba, Newborn Health Programme Manager; Mr Edward Chigwedere, Research and Evaluation Manager; Mr George Chiundu, Monitoring and Evaluation Officer, and Mr Reuben Ligowe, Program Officer. The Reproductive Health Unit at the MoH was involved in the planning of the assessment and hosted the debriefing session, in which UNICEF/Malawi also participated.

The review activities included the following:

	Scope of work	Purpose / Objective
1.	A retrospective assessment of the state of KMC in Malawian hospitals that had received support for the implementation of KMC	• To identify (a) achievements, strengths and challenges experienced during the implementation of KMC (b) potential barriers to quality implementation and sustainability in preparation for effective integration and scale-up to district level in Malawi • To make recommendations for an efficient and effective approach to scale-up of KMC in Malawi within the context of a resource-constrained environment with widespread shortages of health workers and with attention to physical infrastructure and supply requirements (fixed and recurrent costs)
2.	Review of education and training materials and processes used in Malawi and South Africa	• To make recommendations for sustainable training approaches/packages to be integrated with other maternal and newborn care training • To develop an overview for a KMC action kit containing education and modular training materials that could also be adapted for use in Malawi, as well as other African countries wishing to scale up KMC

3 VISITS TO HEALTH CARE FACILITIES

3.1 Methodology

A variety of hospitals and one health care centre were visited to gain first-hand insight into the running of facilities in Malawi and to identify opportunities and challenges for scaling up KMC into a continuum of care in and referrals between hospitals, health centres, communities and homes. Six hospitals that had received assistance from Save the Children from 2002 to 2004 were visited, as well as a mission hospital, a community hospital and a health centre that had not been part of the assistance. One hospital was too distant to visit and a telephone conference was held to obtain more information. Table 1 lists the facilities visited and the people who were involved. Appendices I.1 to 1.10 contain detailed summaries of the discussions held at individual hospitals.

A qualitative approach was followed during all the visits and the interactions were approached in a narrative format instead of taking the form of a series of specific questions. Nurseries, KMC facilities and postnatal wards were also visited to observe practices. Specifics probed during conversations and observations included the "story" of how KMC was implemented, important role-players, staffing, staff rotation policies, staff training and on-the-job orientation of new staff, record keeping, KMC admission criteria, feeding, discharge criteria, follow-up, general strengths, challenges and special initiatives, and lessons that other facilities could learn from the experience of the hospitals visited. Many of these aspects are included in the KMC progress-monitoring

checklist used in South Africa and the possibility of adapting this tool for Malawi was investigated (see also section 5).[27] Some of the points probed during the visit are summarised in Table 2.

Table 1. Facilities visited

#	Hospital / Health Centre	Level	Date visited	Date KMC implemented	People involved
1	Zomba Central Hospital*	Tertiary Government	26 July 2007	Nov 1999	Anne-Marie Bergh, George Chiundu, Reuben Ligowe
2	Ekwendeni Mission Hospital*	Secondary CHAM	3 Aug 2007 (Tel call)	Sept 2003	Anne-Marie Bergh, Elise van Rooyen, Reuben Ligowe
3	Queen Elizabeth Central Hospital*	Tertiary Government	24 July 2007	Nov 2003	Anne-Marie Bergh, George Chiundu, Reuben Ligowe
4	Bwaila Central Hospital*	Tertiary Government	28 July 2007	Feb 2004	Anne-Marie Bergh, Elise van Rooyen, Joy Lawn, Evelyn Zimba, Edward Chigwedere
7	St Luke's Mission Hospital*	Secondary CHAM	26 July 2007	Feb 2004	Anne-Marie Bergh, George Chiundu, Reuben Ligowe
5	Mangochi District Hospital*	Secondary Government	27 July 2007	May 2004	Anne-Marie Bergh, George Chiundu, Reuben Ligowe
6	Mulanje Mission Hospital*	Secondary CHAM	25 July 2007	March 2005	Anne-Marie Bergh, George Chiundu, Reuben Ligowe
8	Mitundu Community Hospital	Primary Government	30 July 2007	Training in 2004	Anne-Marie Bergh, Elise van Rooyen, Joy Lawn, Evelyn Zimba
9	Nkhoma Mission Hospital	Secondary CHAM	30 July 2007	2006	Anne-Marie Bergh, Elise van Rooyen, Joy Lawn, Evelyn Zimba
10	Lirangwe Health Centre	Primary Government	24 July 2007	N/A	Anne-Marie Bergh, George Chiundu, Reuben Ligowe

* Hospitals supported by Save the Children in the past.

Table 2. Summary of KMC practices in health care facilities visited

#	Hospital /Health Centre	When started	KMC ward	No of KMC beds	Total no of staff for KMC	No of staff /shift for KMC	Staff rotations	No of KMC dyads present	Type of KMC@	Follow-up	Type of beds#	KMC posters display-ed	Records seen$
1	Zomba Central Hospital*	1999	YES	12	Not probed	Not probed	YES	12	Cont	At hospital	Special	SNL Ukugona	KMC register Discharge sheet
2	Ekwendeni Mission Hospital*(1)	2003	YES	10	2 nurses (12 maternity)	1 nurse	SOME	6	Cont Intermitt	At hospital	Special	SNL Zomba	N/A
3	Queen Elizabeth Central Hospital*	2003	YES	9 (16 in new unit)	Not probed	Not probed	YES	9	Cont	At hospital	Special	SNL	Not probed
4	Bwaila Central Hospital*	2004	YES	8	Not probed	1 doctor (part-time) 2 nurses 1 pt att	YES	6	Cont	At hospital	Special	SNL Ukugona	KMC register Patient notes
5	St Luke's Mission Hospital*	2004	YES	3	Not probed	Not probed	Not probed	0	Cont	At hospital	Special	SNL	KMC register
6	Mangochi District Hospital*	2004	YES	4 (formerly 10)	Not probed	Not probed	YES	4	Cont	At hospital	Special	SNL Zomba	KMC register Patient notes
7	Mulanje Mission Hospital*	2005	YES	7	Not probed	Not probed	YES	1	Cont	At hospital	Special	SNL Own paintings	KMC register Patient notes

#	Hospital /Health Centre	When started	KMC ward	No of KMC beds	Total no of staff for KMC	No of staff /shift for KMC	Staff rotations	No of KMC dyads present	Type of KMC@	Follow-up	Type of beds#	KMC posters display-ed	Records seen$
8	Mitundu Community Hospital	Train-ed 2004	In nursery	1	Not probed	Not probed	YES	0	Not probed	At hospital	Special	SNL	Not probed
9	Nkhoma Mission Hospital	2006	Corner in postnatal ward	Flexible, according to need	Not probed	Not probed	YES	0	Not probed	At hospital	Normal	Groote Schuur	Not probed
10	Lirangwe Health Centre	N/A	Postnatal ward available	Could be available, dependin g on need	Not probed	Not probed	N/A	N/A	N/A	N/A	Normal	N/A	Admissions book

* Hospitals supported by Save the Children in the past
@ Practised systematically – some hospitals have the occasional baby receiving intermittent KMC as well
# Special surgical beds with a reclining head end
$ Records not probed in a systematic way – varying quality of records
(1) Telephone conference

3.2 General findings

3.2.1 State of implementation and training

Of the seven hospitals supported in one way or another by Save the Children in the past, one hospital (Zomba Central Hospital-ZCH) had implemented KMC before the start of the project and had been developed as a training centre for the other hospitals as part of the Saving Newborn Lives program. Staff members from the other six hospitals received training at ZCH. Five of the hospitals managed to implement KMC successfully and sustainably. Three of these are central hospitals and two are mission hospitals. The other two hospitals have KMC wards, but appear to have many problems achieving long-term sustainability. In all but one of the hospitals, expatriates were instrumental in assisting with institutionalising KMC. One hospital with an impressive KMC programme and evidence of ownership (Queen Elizabeth Central Hospital-QECH) was not originally targeted, but later requested and received training support from the program. With the severe shortages of nursing and medical staff in Malawi, the long training period of the program was an obstacle for the hospitals that were scheduled to implement KMC. It was not always feasible for them to send the staff required for KMC for the necessary training.

Three hospitals, namely ZCH, QECH and Ekwendeni Mission Hospital, have trained people from other hospitals. Such training has also taken place as an outreach activity at a particular facility. The length of training has varied between one and two weeks. One hospital emphasised the importance of the hands-on, more practical part of the training and felt that two to three weeks of on-the-job training would be ideal.

Two hospitals and one health centre that did not receive Save the Children support were visited in order to become familiar with conditions in what were presumably "non-KMC" facilities. In both hospitals some form of KMC was being practised, in one after ENC training and in the other as a result of a quality improvement project by two students from the Netherlands. There appears to be substantial awareness of the importance of KMC in other health care facilities that were not part of the original group of hospitals earmarked for implementation. This general awareness, also through training in ENC, is an important development for considering alternative, more cost-efficient training and facilitation models to assist with an accelerated scaling up of KMC. As a practice, KMC also seems to be acceptable to mothers and guardians, although in some places community members may find the sight of babies being carried in front in the skin-to-skin position strange and unfamiliar. A few informants also related instances of mothers refusing to do KMC after a baby had died while in the KMC position.

Several people indicated that they had received training in KMC as part of the ENC outreach. Although there is a trickle-down effect of this training, as was evident from the greater awareness that was observed, it is not clear to what extent messages are further shared on the ground – as a result people may have "some idea" of KMC but may not have enough information to practise it safely and efficiently.

3.2.2 The practice of newborn and kangaroo mother care

3.2.2.1 Initial care

Incubators (even new ones) are seldom used in the facilities visited, with the exception of some of the central hospitals. At a number of the hospitals a shortage of equipment and regular supplies, for example antibiotics and gloves, was a problem. All hospitals followed a practice of

keeping babies in a warm "transit" room in the nursery for a few days before being transferred to a KMC room for continuous KMC. Sometimes babies are kept in this transit room for a longer period if the KMC ward is full. Intermittent KMC (also called "interrupted KMC" in Malawi) is not normally practised while the baby is in an incubator or during the waiting time in the "transit" room (except at one hospital). No intermittent KMC was observed in any of the nurseries visited, either due to fear of infection (noted by one or two hospitals) or lack of motivation (noted by one hospital). Others noted that mothers had not yet been counselled on whether they would be willing to practise KMC. In most hospitals babies on nasogastric or orogastric tube feeding are not put into continuous, 24-hour KMC (also called "exclusive KMC" in Malawi). The ideal would be for intermittent and continuous KMC to be the norm for all stable preterm babies, and for those mothers choosing not to do this to be required to sign a form indicating such.

The way in which the "transit" rooms in the nursery are organised varies. At some hospitals all babies are placed in the same room. At other hospitals babies born before arrival are put in a separate room. Others even have a separate isolation room for those with infections. Regimes for the use of antibiotics in preterm newborns also vary. At one hospital every premature baby received a five-day course of antibiotics, whereas at others only babies with possible infection received treatment. The availability of drug supplies in some facilities is unreliable.

3.2.2.2 Care in the KMC unit

In the facilities visited there was a fairly rigid approach to kangaroo mother care – KMC is only practised in a separate ward in a heated environment with surgical beds that allow the mothers to sleep at a 45º angle. The *chitenje* is used in most places to tie the baby to the mother, either as the only method or as a wrap over a triangular cloth that ties the baby, with a special blouse covering the mother and baby. The high hospital beds do not encourage movement and in some of the facilities mothers do not appear to walk around much, an important activity conducive to the vestibular development of babies.[28-29] All hospitals that had received Save the Children support in the past used the standard KMC register. The quality of records and recordkeeping varies. Two hospitals produce summaries of monthly statistics. At one hospital the recording sheets for the daily monitoring of the baby contained no notes on the baby's condition or feeding, except the occasional weight every few days. (section 4.1 on missed opportunities discusses feeding further).

3.2.2.3 Discharge

Although most hospitals listed more or less the same general discharge criteria (e.g. regaining birth weight, gaining 10g per day for three days, ability to feed, readiness of mother to go home), there were variations in terms of the discharge weight of the baby, which ranges between 1.3 and 2 kg. The decision of whether a baby is ready for discharge may rest with different people in different facilities – in some cases it is the medical or clinical officer who decides, in other cases it is the nurse or patient attendant, and in more complex cases there is consultation between the various health care workers before a final decision is made jointly. In order to ensure sound decision-making, a differential guideline could be put in place, namely that the decision whether to discharge smaller babies (e.g. <1.5 kg) who have not been in a unit for very long should be a joint one. The National Guidelines for KMC[25] should be brought to the attention of professionals working in KMC.

3.2.2.4 Follow-up

In most countries, the follow-up of premature babies after discharge presents many challenges. In Malawi, too, the follow-up system is fragile. In most cases follow-up is passive, with few or no means of ensuring that mothers return to the hospital or go to the nearest health centre for review. The main reasons for mothers failing to return to the hospital for follow-up are transport difficulties (no transport available at night or the cost of transport) and the death of the baby. At two or three of the hospitals mothers were offered incentives to return for review, in the form of either remuneration for transport or a small gift. These measures were usually linked to a specific outside project and funding and were thus not sustainable.

The health system and referral routes make follow-up difficult in some districts. The different reporting lines between central hospitals and health centres contribute to the weakness of the link between the two types of facilities. A central hospital may not make a direct referral to a health centre – the request has to be processed through the district health office. Therefore hospitals send their discharged patients straight home instead of via the health centre. This practice does not allow health surveillance assistants (HSAs) to check on how babies who have been discharged from the hospital. In some cases referrals between CHAM hospitals and government health centres also appear to be difficult. The use of referral letters passed on from the hospital via the mother or guardian to the local health centre or community volunteer seems to be working well for groups of patients in other types of programmes.

3.2.3 Staffing

The staffing arrangements in the KMC units visited varied greatly. In some units only nurses were allocated, in others only patient attendants supervised by clinical or medical officers and in yet others there was a mix of patient attendants, nurses and clinicians. Sometimes KMC services are paralysed as a result of staff shortages or the lack of appropriate planning for appropriate coverage of KMC care, for example at one hospital a cleaner looks after the KMC ward when the nurse is on leave. Many of the health workers interviewed said that their perception was that newborn care was not a priority in the health system and that staff allocations for newborn care were not taken seriously. Despite the difficult conditions under which members of staff have to perform their duties, the commitment of some of these members has to be commended – in the words of one nurse, "We do what we can in response to the crisis." However, it is crucial that all hospitals have a system of care that includes sufficient nursing and clinical supervision of babies in KMC at all times.

The practice of regular staff rotation is not conducive to the provision of quality care, as staff trained in KMC are replaced by staff with very little or no experience. In-service training and on-the-job orientation are done thoroughly in some of the units, whereas in others there is an impression that insufficient knowledge and skills are passed on to newcomers to the KMC ward. For the implementation of KMC it is essential that key people and drivers of the process at all levels should be kept in the same position for the duration of the implementation or until KMC has become fully institutionalised.

Appendix II gives a summary of the total staffing in the maternity and paediatric sections of the health care facilities visited. It was unfortunately not possible to obtain a breakdown of the number of staff members who are available for KMC on each shift.

4 EVALUATION OF THE CURRENT SITUATION

Table 3 summarises the achievements, strengths and challenges of hospitals that have implemented KMC with the support of Save the Children's Saving Newborn Lives program.

Table 3. Achievements, strengths and challenges in KMC

ACHIEVEMENTS AND STRENGTHS	CHALLENGES
Nationally: • Malawi has a national KMC policy. • There is a high degree of awareness of ENC and KMC in the facilities visited and they are both included in the national pre-service training for nurses. *In the facilities visited:* • All hospitals supported have a KMC unit. • Some other sites where KMC was not started with Save the Children support also have KMC units, showing a demand for KMC and its application. • Dedication of staff despite hardships. • Presence of guardian to assist the mother. • Good use of visual materials (posters and cards). • KMC register is available and being used in at least 6 of the sites. *General:* • Awareness of KMC in other health facilities	*Human resources – management and perceptions:* • Perception of health care workers that newborn care is not a priority in the health system. • Insufficient nursing and clinical supervision in some units • Staff shortages • Staff rotations resulting in loss of staff with skills in KMC • Long off-site training, and limited on-site follow-up, especially if started in "project mode" • Limited orientation of new health care staff *Implementation and follow-up:* • Perceived need of special unit, special beds and heaters • Lack of simple job aids to work out volumes for giving expressed breast milk, or for recording that milk has been given • Variation in quality of records – lack of proper documentation on feeds and other important information • Variation in discharge criteria • Lack of appropriate follow-up systems • Transportation of babies to and between health facilities in the KMC position

4.1 Missed opportunities for immediate attention

Three missed opportunities were identified that could receive immediate attention without any additional costs to the health services apart from training and awareness raising:

- Practising intermittent KMC
- Optimising feeding practices
- Transporting babies from home or between facilities in the KMC position

4.1.1 Practising intermittent KMC

During the visits to the different health facilities it was observed that intermittent KMC (interrupted KMC) was very seldom practised in the nursery. Babies who are stable but have not yet been moved to the KMC unit lie in cots and are handled only for feeding. The Malawi National Guidelines for KMC stipulate that babies who have problems at birth may start KMC as soon as they are stable. Intermittent care should be practised until the babies are fully stable.[25]

According to World Health Organization (WHO) literature, intermittent KMC can be started while a baby is still recovering from an illness and when a baby still requires medical treatment (IV fluids, low concentration of additional oxygen, antibiotics and even phototherapy). As long as the baby does not have severe respiratory distress (respiratory rate > 60/minute with in-drawing and nasal flaring) while on oxygen therapy and does not have any other danger signs, the mother can hold her baby skin-to-skin for short periods of time (1-3 hours at a time), and then progress to full-time KMC.[30-31]

Research has shown that infants who are not stable enough to receive continuous KMC but are able to receive intermittent care will gain many of the benefits of KMC while being cared for in nurseries or incubators.[32] These benefits include cardio-respiratory stabilisation with a reduction in apnoea,[33-34] efficient thermal regulation with prevention and treatment of hypothermia,[35] exclusive breastfeeding resulting in improved function of the gastro-intestinal tract with less vomiting caused by gastro-oesophageal reflux,[6] and consistent weight gain even in very low birth weight infants.[7,36] KMC is known to reduce stress in infants, which results in earlier suckling, organised brain activity and sleep cycles that are mature in nature.[37-38] Infections are reduced, as the baby is colonised by the mother's skin commensals instead of pathogenic bacteria and is protected by the antibodies in breast milk.[5-6]

Intermittent KMC can be implemented immediately in a facility without having to identify a special space or equipment. The only requirement is that there should be a chair or bench in the nursery where the mother can sit with her baby in the KMC position. The most convenient time to practise intermittent KMC is when the mother comes to feed her baby. It is not absolutely necessary for the baby to be tied in the skin-to-skin position, because the mother will not be moving around with her baby. If the mother will be doing intermittent KMC for a long period of time it may be more comfortable for her to have her baby tied in the KMC position.

It may be helpful if the Malawi National Guidelines for KMC[25] were revised to describe the practice of intermittent KMC in more detail, along with the criteria for determining when intermittent KMC is safe and beneficial to the baby. One way to address mothers' resistance to intermittent KMC would be to educate all women attending ANC clinics about KMC, how it is practised and how beneficial it is for small babies to receive this care.

4.1.2 Optimising feeding practices

During the assessment visits it was found that the feeding of infants in the nurseries and KMC units varied very much between facilities. There was a lack of proper documentation of the volume and number of feeds. Some units did not have any feeding charts. In some of the nurseries there were no scheduled times when mothers should come and feed their babies. Some of the nursing staff understood that babies should be fed on demand and not according to a time schedule. In some units the mothers received little support and guidance from the staff in the nursery regarding feeding times and the required volume of feeds. Some members of the nursing staff seem to confuse the term "exclusive breast feeding" with the term "feeding on demand" and they used the terms interchangeably. Further, some did not understand that feeding infants expressed breast milk is included in the definition of exclusive breastfeeding.

Feeding of neonates and especially LBW and/or preterm babies is very important because these babies do not have reserves of energy to fall back on. They need regular feeds to prevent low blood sugar and allow them to have a satisfactory growth rate. Premature infants may have a poor sucking reflex, make little attempt to suck and become fatigued easily, which is why they need small, scheduled feeds at regular intervals.[31]

Nursing staff need to understand that feeding on demand is only feasible in healthy newborn infants who room in with their mothers. Babies who are kept in a nursery where the mother is not constantly present need to be fed on a specific schedule in order to provide optimum nutrition and prevent episodes of hypoglycaemia from occurring. This is even more important when caring for preterm infants.

The 2005 Malawi National Guidelines on KMC contain no clear outline of how preterm and ill neonates should be fed.[25] The guidelines advise that infants in KMC should be fed on demand. How to calculate feeds and the approximate amount of food needed per feed by birth weight and age are included in the guidelines as an appendix, but the function of this job aid is not clearly explained. It is recommended that this section of the National Guidelines be reviewed. The KMC training manual also requires additional information on feeding preterm infants. While the manual explains how to feed infants with a cup and a nasogastric tube, it also needs to emphasise that preterm and ill babies should be fed at set periods.

4.1.3 Transporting babies from home or between facilities in the KMC position

All the health facilities practising KMC were asked how newborn babies were transported to the hospital. Very few recognised that the skin-to-skin position should be standard practice. Newborn infants and especially LBW and preterm babies are very prone to hypothermia. Transporting babies in the KMC position can help avoid this potentially lethal condition and more infants would arrive warm and alive at the health facility.[39-40] Communities and health care workers working in the community need to be educated about transporting all newborn infants in the KMC position. Although this is not addressed in the Malawi National Guidelines for KMC, the KMC training manual states: "Every LBW and preterm baby or sick newborn referred to the hospital should be transported in the KMC position; transporting in this position can avoid hypothermia of the baby."[41]

4.2 Potential for scaling up KMC

All the facilities visited were positive about KMC and saw possibilities for scaling it up. Staff members at both ZCH and QECH indicated that they were keen to be part of any scaling-up

process. Both Lirangwe Health Centre and Mangochi District Hospital were positive that a referral system for mothers in KMC could work in their context, with a mother and baby being referred back to the health centre before being discharged home.

It appears as if scaling up could be feasible and sustainable within current health system constraints. A number of factors are crucial to the sustainability of scaling up:

- The active support and involvement of management at all levels
- A trained and experienced person to drive the process under the auspices of the Ministry of Health (This is essential for integrating KMC into the health system.)
- Good communication and consultative participation at all levels
- Selecting the right people for training and providing ongoing support after training
- Strengthening of current lines of communication between levels of care
- Sensitisation of community structures like HSAs and local leaders to promote good communication and support, especially after the babies' discharge
- The integration of KMC services in the facility system right from the beginning (It is important to avoid looking at KMC as a project.)
- The need to establish a community follow-up system that is integrated into the maternal and child health care programme

If KMC is to be taken to scale some shifts in approach may be needed in order to devise a cost-efficient programme that would enable KMC to become an integral part of the continuum of neonatal care and not be treated as a vertical project that ends when external funding ends. The shift in approaches is summarised in the next section.

4.3 Possible shifts to accelerate the scaling up of kangaroo mother care

To promote the effective scaling up of KMC at a district level and counteract potential threats, a number of shifts in the planning and execution of a scale-up process have been conceptualised. These shifts, which have proved to be effective in other countries, are summarised in Table 4.

Table 4. Shifts to accelerate the scaling up of kangaroo mother care

	WHERE WE WERE →	WHERE WE WANT TO BE
HEALTH SYSTEM PLANNING	**Who drives the process?**	
	Project Vertical (silo)	Integrated in health system Integrated with other programmes and training packages
	Leadership by NGOs and expatriates, outside consultants	Leadership by Ministry of Health and local officials, locally adapted and owned
	Waiting for funding	Starting with what is available
	Where in the health system?	
	Care in tertiary hospital and discharged to home	Household to hospital continuum of care with approach tailored to health system level
	Need special newborn care before KMC can be started	Continuum of care approach: *Antenatal* messages to families, *Obstetric care* with immediate skin-to-skin contact and breastfeeding, KMC at each level of care linking to *postnatal* care for referral and follow-up
	Training and tracking	
	Off-site training – long course (e.g. 5 days) as once-off	Short off-site training for selected leaders followed by on-site facilitation by a central trainer who then devolves responsibility to the local supervisors
	End-of project assessment	Continuous monitoring of quality through on-site facilitation, supervision and moral support

	WHERE WE WERE →	WHERE WE WANT TO BE
HEALTH CARE DELIVERY	**How?**	
	Rigid recipes, same everywhere	Flexible guidelines adapted to local context and existing protocols, use of job aids, modular training with implementation content as well as clinical care
	Who "owns" the baby?	
	KMC as medical/nursing intervention	KMC as a vehicle to empower mothers All the staff have a role to play and with the human resource crisis, delegation is key (e.g. to patient attendants)
	Who gets KMC?	
	Preterm babies of certain weights without any problems	All babies benefit from being skin to skin at least for the first few days. All preterm babies benefit from KMC unless they are medically unstable (e.g. breathing difficulties) Babies, including term babies, who are ill and are being transported to a referral centre can travel on mother's or guardian's/father's chest
	Where?	
	Need a special KMC room, surgical beds with 45^0 angle and heating	Can start with ordinary beds in the corner of the postnatal ward, or the mothers can provide intermittent KMC in the sick baby unit. In the absence of a reliable heat supply, KMC is the best method of keeping the baby warm
	When?	
	Only to be done if a full 24 hours a day can be achieved (continuous KMC)	KMC can be intermittent (e.g. babies who are still unwell but are stable can be held in the KMC position for a few hours at a time)
	What is KMC?	
	Focus all on KMC position and warmth	Importance of feeding often and enough and recording this while the baby is still an in-patient

5 REVIEW OF RELEVANT MATERIALS AND TRAINING

The brief with regard to KMC training materials was to:

- review visual materials for promoting KMC and ENC for families and health care workers (posters, leaflets, flipcharts)
- review and help revise the current KMC manual used to train health care staff in Malawi in order to:
  - optimise the clinical content of the materials, including necessary simplifications for a shorter training period and for simpler implementation at district level
  - add suitable content with regard to the implementation process, the audit and the enabling of sustainable scale-up of KMC
- adapt the material in such a way that it would also be useful in other African countries and settings

5.1 The process

The following process was used to review the materials:

- Listing and appraisal of the Malawian training materials, guidelines and reports on the process of implementation
- Listing and appraisal of the South African materials used in the scaling up of KMC in several provinces
- Identification of the different target groups that would need training or orientation in KMC
- List of training materials needed for different target groups
- Creating draft training programmes for core skills and comprehensive skills training (Appendix IV contains a proposal of what a training programme could include.)
- Tabulating the selected training materials under the following headings: description of each item; target audience for which it would be useful; why it should be included in the training; options for input; what needs to be done and who would be responsible for what.
- Developing proposals for a KMC action kit that will contain the different training materials for scale up:
  - poster, cards, information leaflets
  - a KMC manual in modular form that includes information on KMC, benefits, practice and implementation aspects
  - a CD-Rom with a collection of reference materials, PowerPoint talks, examples of guidelines, protocols and job aids (An outline of possible training materials to include in a scale-up KMC action kit is set out in Table 5)

5.2 Relevant existing materials

5.2.1 Family and health-worker visual materials

A very popular poster which had been developed in Malawi was widely displayed in facilities. The flash cards for ENC and KMC were also on display on the walls of several units or were being used as flipcharts for health talks. A number of posters are used in South Africa, and some of these were also to be seen in Malawi KMC units. The Malawi materials are now out of stock and the MoH and partners, including Save the Children, plan to review and reprint. Overall, only minimal changes seem to be necessary.

5.2.2 Relevant training and implementation materials

5.2.2.1 The Malawi KMC training manual

This manual[41] was developed in 2005 and used to train health care workers. The training took place at Zomba Central Hospital over a period of five days. The 195-page manual includes clinical care, discharge and follow-up but less material on the implementation of KMC, scale up and tracking. There is a chapter with very detailed information on the identification, characteristics and problems of LBW and/or preterm infants plus a chapter on hypothermia, its causes and how it should be treated. There is a short section on cup and nasogastric tube (NGT) feeding for LBW babies. The manual also contains several useful job aids, including referral letters.

5.2.2.2 The South African implementation workbook for KMC

This manual was published in 2002 under the auspices of the MRC Unit for Maternal and Infant Health Care Strategies.[42] It focuses on the adaptation of the health systems, local ownership and a sustainable KMC implementation process. The manual was part of the training materials provided to health workers attending two-day KMC training workshops in South Africa. The training materials were placed in a box that included the workbook, a reader (a collection of research articles on the practice and implementation of KMC as well as units from a training manual of the Perinatal Education Programme), a KMC poster, two KMC videos, a wrap for tying babies and examples of protocols, guidelines and job aids. Depending on the size of the facility, each facility planning to scale up KMC had to select two to five people to attend the two-day training course. After the training in both implementation and clinical practice, participants went back with a plan of action they had developed themselves and then received two to three follow-up support visits before the progress made with implementation was formally assessed.[20,27]

5.2.2.3 Malawi ENC materials

With funding from the Bill & Melinda Gates Foundation, Save the Children, in collaboration with the Ministry of Health, developed an ENC course and manual that was widely implemented and incorporated into pre-service training at the College of Nursing. ENC/KMC materials were also developed for use by partners who were supported to implement ENC and establish KMC units with the agreement that the Ministry of Health would later reproduce these materials for national use. The posters were used in health facilities to sensitise the community on ENC/KMC and management of newborn danger signs while the brochures were distributed to mothers during motivational talks either at antenatal care or in the postnatal ward or KMC unit. Counselling cards were developed for community health workers (i.e. HSAs, community health nurses) to counsel women on essential newborn care, identification and management of danger signs and KMC.

5.2.2.4 WHO ENC training course

The WHO ENC course is a stand-alone, five-day workshop with training in the principles of ENC (warmth, breastfeeding, cleanliness), as well as neonatal resuscitation. It includes good grounding in skin-to-skin care and two hours on the clinical practice of KMC. Breastfeeding counselling is covered, but limited time is spent on special feeding support for preterm babies.[30]

5.2.2.5 Care of ill newborns

The Integrated Management of Childhood Illnesses (IMCI) algorithms used in Malawi have been adapted to include the WHO Young Infant algorithm, so it now screens for illness in the neonatal period. Any baby who is very small or who has any one of eight danger signs listed is considered to fall into the category of "Very severe disease" and should be taken to referral level for treatment. Other IMCI conditions (malaria, pneumonia and diarrhoea) can be treated at primary care level. The two guides for the care of ill babies at hospital level that are both from the WHO, but do not seem to be well known or used even in the teaching hospital are *Managing Newborn Problems*[31] and *The Pocket Book of Hospital Care for Sick Children*.[43]

5.2.3 Multiple protocols and job aids for ENC, KMC and care of ill newborns

There are multiple protocols and job aids for many aspects of newborn care including ENC, KMC and care of small and sick newborns. These can be adapted to the local setting but the principles such as discharge criteria or feeding volumes by birth weight and age are similar. It is proposed to collect useful examples and provide these on a CD-Rom in an editable text format, for easy adaptation, printing and display or use in the records.

5.3 Recommendations with regard to materials

All the above materials have strengths and limitations. For local ownership and sustainability and based on the experiences of scale-up in South Africa, the materials and training should include principles for implementation as well as a clinical care component. Ongoing facilitation is essential. Selected aspects could be added from the South African manual to reinforce this.

In order to move to district level it is clear that the five-day, stand-alone off-site training for KMC alone will not be feasible for wide-scale implementation. It is recommended that training in KMC be shortened to two days of off-site training, to include a clinical and practical component, as well as guidelines on implementation. Appendix IV contains a proposed outline for this two-day training schedule. As this is modular it would be possible for the half day of competency training in KMC to be used as a modular add-in to the WHO ENC course to ensure that everyone trained in ENC to this level is also competent in KMC.

An outline of possible training materials to include in a scale-up KMC action kit is set out in Table 5. The intention is to have a draft ready for review by the end of October.

Table 5: Overview of proposed action kit for integration and scale-up of KMC

SECTION	WHAT	WHO FOR?	OPTIONS FOR INPUT/STATUS
A	Supporting behaviour change communication (BCC) and visual materials: - Posters - Cards - Leaflets	Mothers, families and aids for health care providers	Good materials exist in Malawi and South Africa
B	Modular manual in file with sections derived from Malawi KMC manual and South African KMC implementation workbook on: 1. Introduction – Why KMC? What is KMC? "How to" principles 2. Planning and implementing scale-up 3. Practising KMC (split by core and comprehensive) 4. Progress tracking Annex: Diagrams to adapt for section 1 Curricula for core skills and comprehensive Copies of job aids and ward records for adaptation/use Possible list of contents for KMC action kit	Different sections for different audiences	Planning/implementation: - the South African workbook has good inputs that can be adapted - Need proposed scale-up plan over 2 years Practising KMC - Malawi manual - PEP manual - Protocols from Kalafong Hospital - Curriculum for 2-day training
C	CD-ROM with the manual, job aids and more information, including other background reading and Powerpoints (PPTs) for advocacy and training	Planners/implementers and healthcare providers who require more information PPTs: One or more per section of the manual	A lot of materials exist
D	KMC action kit - possible items to be discussed but could include modular manual, job aids, BCC materials and poster, DVD of KMC for training, examples of KMC wraps etc	Action box and may differ according to levels – e.g. health centre more simple, central hospitals and national coordinator more comprehensive	

6 PROCESS FOR SCALING UP KANGAROO MOTHER CARE – LESSONS FROM ELSEWHERE

6.1 Approaches to scaling up design

The first decision that needs to be taken by any MoH that wants to scale up KMC is the approach: a "big bang" approach, which involves scaling up to all facilities at the same time, or a "staggered" approach, which involves scaling up in a phased manner over a period of a few years. A comparison of the advantages and disadvantages of each is summarized in Table 6. The decision will be influenced by funding and human resources. For an endeavour like this to succeed careful consideration and planning are very important in the initial stages. There should be political commitment by the MoH to implement KMC within the existing constraints and the will among health workers to take it on as part of their normal duties, without expecting additional incentives. Participatory management, transparency in decision-making and good communication strategies are needed from the start to ensure a climate that facilitates commitment and ownership of the implementation process.

Table 6. Approaches to scaling up – advantages and disadvantages

	"BIG BANG" APPROACH	"STAGGERED" APPROACH
ADVANTAGES	• Higher level policy makers and politicians often like immediate results. • Intensity of the messages that go out can help with sustainability. • The role-players who have to implement are more aware of the initiative due to public awareness and publicity. • Mothers and babies will benefit sooner because all facilities will implement the intervention at the same time.	• Momentum and demand can build as people see success at other sites and learn from their implementation experiences – as time goes by more people become sensitised to the process and implementation becomes easier. • Lessons from early experience can improve subsequent implementation. • Costs are spread out over a longer period. • Hospitals can benchmark at facilities that have implemented KMC successfully. • Integration of KMC into newborn services will occur in those hospitals that have implemented first and will spread to others.
DISADVANTAGES	• The initiative ends sooner than with a "staggered" approach and long-term sustainability may be compromised if there is not sufficient ownership. • More difficult to sustain momentum during implementation "dips". • More difficult to integrate KMC into newborn services. • Immediate cost is high. • More qualified and experienced trainers needed, which could increase the cost. • Quality of training in areas may suffer if experienced trainers are not available.	• Could unravel if there is a change in driver or trainer in the middle of the process. • It takes longer for the intervention to be implemented and longer for mothers and babies to benefit from the intervention.

The South African MRC Unit developed a model for monitoring progress with the implementation of KMC, which is depicted in figure 1.[19] It is based on three phases: pre-implementation, implementation and institutionalisation. For each phase there are two "steps" that need to be monitored very carefully. Together, the six steps are summarised as creating awareness, commitment to implementation, preparing to implement, implementation, integration into routine practice and sustaining of new practices. It the initial pre-implementation steps are omitted and logistics planning is not done in very much detail, the rest of the scaling-up process may be in jeopardy and the sustainability of the KMC programme could be compromised.

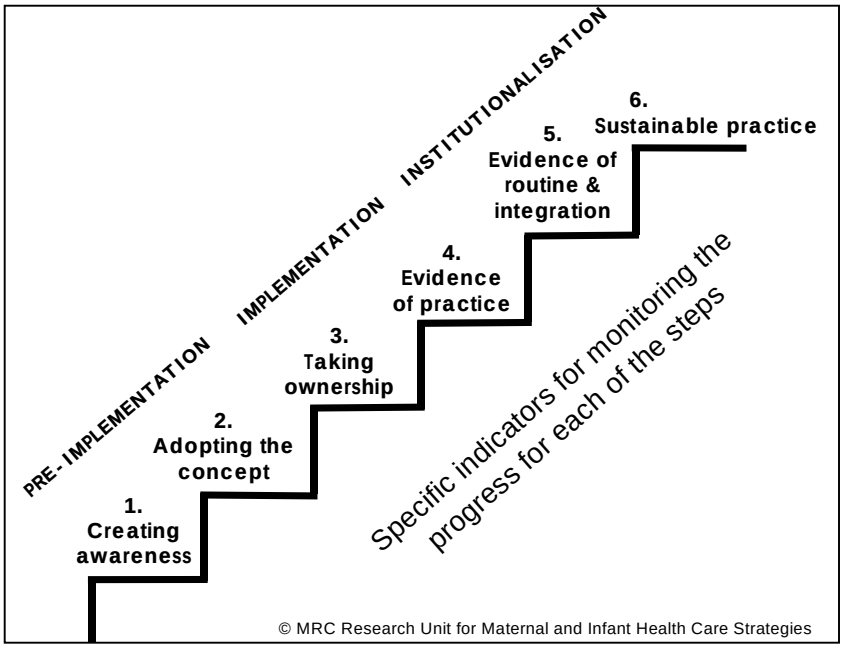

Figure 1. A model for monitoring the progress of KMC implementation

The following example described in sections 6.2 to 6.6 was derived from experience in South Africa in the scaling up of KMC in three provinces.[19-21] Figure 2 gives a graphic representation of a possible timeline for scaling up, using the "big bang" approach.

6.2 Principles

- A driver of the process in the Ministry of Health and a driver in each district office (e.g. national and district coordinators) are essential for successful implementation.
- "If it's not on the agenda it is not there" – for the period of implementation KMC is placed as a fixed point on the agenda (for progress reports) at as many different meetings on as many different levels of the health care system as possible.
- Continuous support for implementation until KMC has been institutionalised is essential. In such a context a training model that places the emphasis on continuous on-site facilitation instead of detailed clinical training may be more practical and sustainable. It is essential initially to have an experienced national trainer(s) in KMC until KMC has been integrated into the continuum of newborn care. This usually takes about two to three years.
- The implementation and practice of KMC become part of the normal job description of all health care workers and each one is accountable for fulfilling the responsibilities and executing the tasks allocated to her/him.

- Implementation of KMC at all levels is a team effort and not the project of one individual. The strong involvement of medical and clinical officers seems to make a difference in getting KMC implemented. "Multidisciplinary team work is one of the cornerstones of a successful KMC programme."[42]
- No special equipment or structural facilities are needed for implementing KMC. Flexible adaptation of existing structures is preferable until upgrading can take place. If heating is unavailable or the supply is unreliable, keeping the baby warm in the KMC position is the ideal option. Intermittent KMC could also be practised, while babies are in cribs in heated nurseries. A district hospital with a properly functioning KMC programme might well benefit from investing in a digital scale.
- The drivers of implementation need to believe that people can do it.

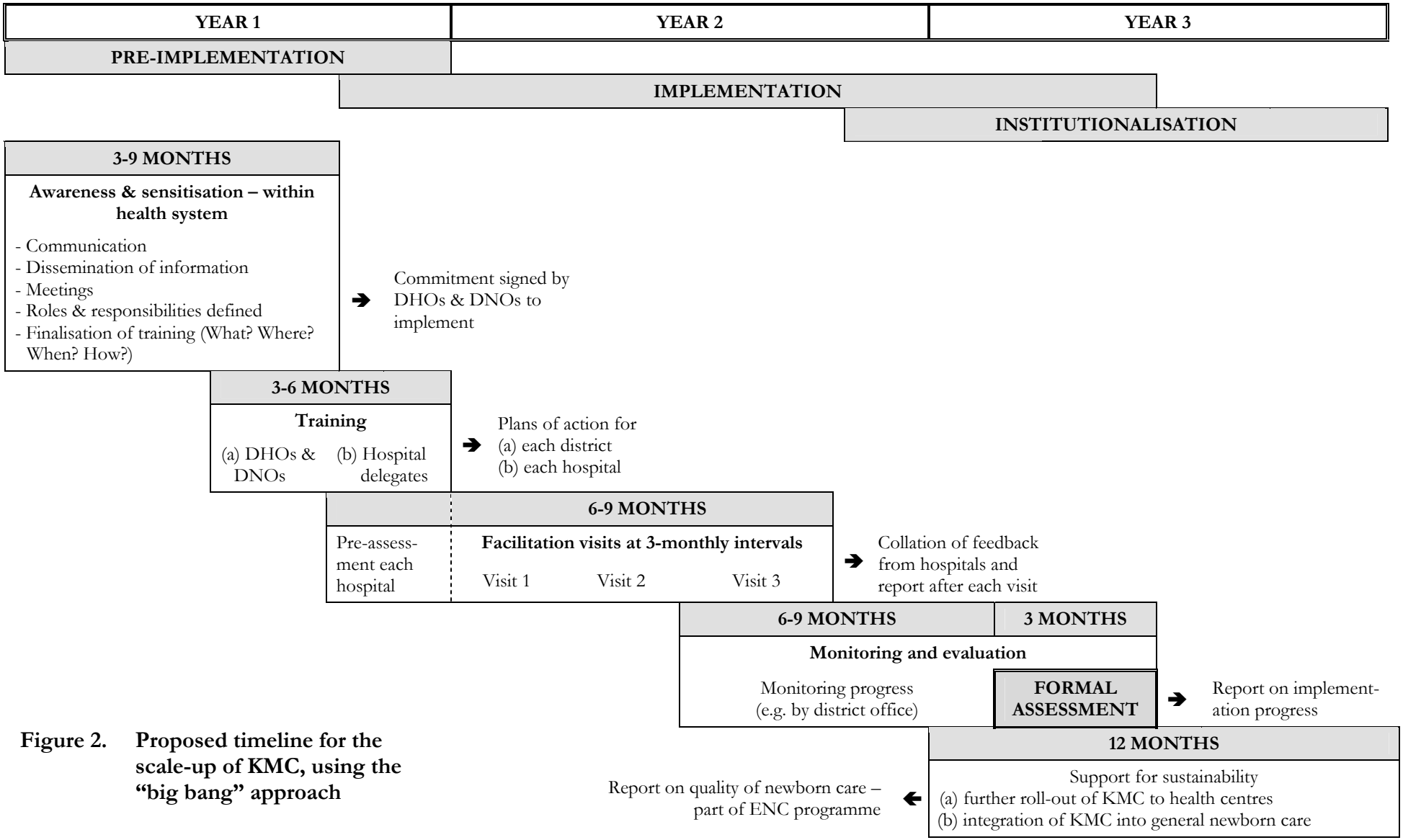

Figure 2. Proposed timeline for the scale-up of KMC, using the "big bang" approach

6.3 Awareness and sensitisation period (advocacy)

- A publicity campaign lasting at least three to six months is required to inform and negotiate with all stakeholders and local leaders – use existing statistics on neonatal deaths and prematurity figures to ”sell” the concept of KMC.
- Use existing meeting structures to make short presentations to obtain “buy-in”.
- Work on provisional roles and responsibilities at various levels of the health system – if necessary get a few people together for an intensive brainstorming session.
- Define basic requirements for staffing. These should not be additional posts funded from outside project funds, but staff on the normal payroll of the Ministry of Health. It seems that a minimum of one clinician, one nurse and one patient attendant (who could also have other duties in other wards) would be needed for the appropriate daily supervision of babies in KMC. At least one person should be available to assist mothers day or night if a problem arises. Too many staff rotations may jeopardise the long-term quality of care.
- Devising a proper record-keeping system is essential. Preferably, existing records should be used or adapted. In the case of bigger hospitals with a separate KMC unit, a KMC admissions book like the one currently used in Malawi could be very useful.
- Some form of media campaign to ”sell” the concept of carrying babies in front, in the skin-to-skin position, could help persuade mothers and guardians to accept and practise KMC.
- Do a survey on the various pre-service curricula of the different health cadres to determine where the curricula are presented and what they include. Work on inclusion and expansion in cases where there is no or insufficient instruction in KMC could be done by the national coordinator/ trainer.

6.4 Preparation for implementation

Figure 3 gives an overview of the potential referral routes for babies in KMC. The darkest lines indicate the routes and facilities that would be most affected by a scale-up to district level.

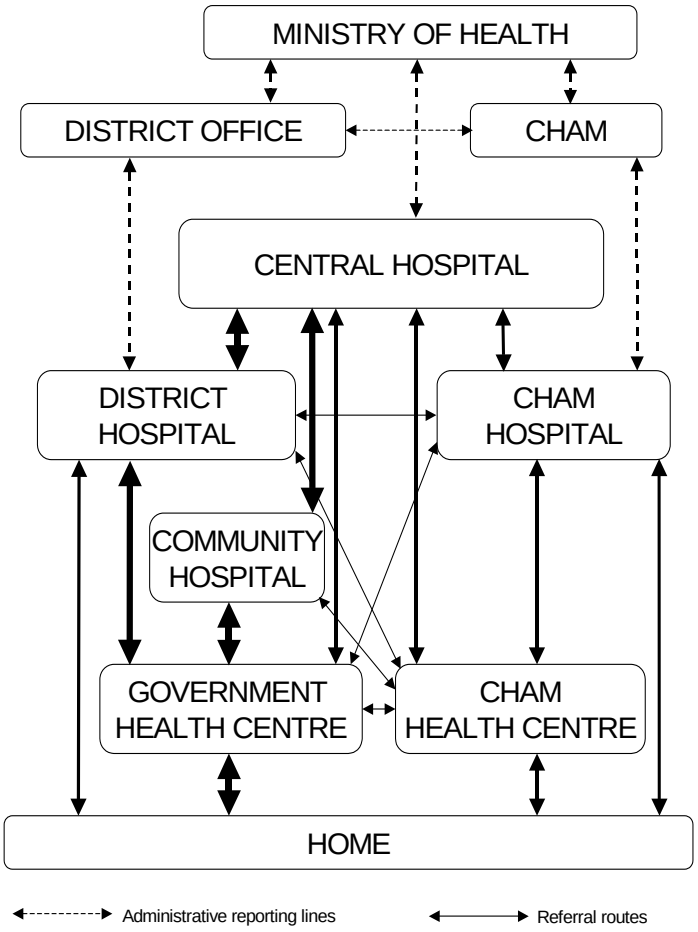

Figure 3. Potential KMC referral routes

6.4.1 District level

- One-day workshops with district officials (e.g. district health officers [DHOs] and district nursing officers [DNOs]) to work out how the scale-up will take place in each district – this could be done by zones or regions or they could piggy-back with existing meeting schedules.
- Clarification of roles and responsibilities of different officials (e.g. DHO will take charge of the hospital implementation and the DNO of health centres).
- Each district works out its own plan of action – this should include at least the following:
  - information on the consultation process that will be followed within health structures and with community stakeholders (e.g. chiefs, churches, volunteers, etc)
  - information on the existing meeting structures that could be used to facilitate the process and for regular report back sessions
  - timelines and responsibilities
  - appropriate referral and follow-up systems that will ensure that a baby will get the continuum of care needed until it is discharged home

- The persons who will be responsible for assisting the health centres (e.g. DNOs) collaborate with the trainer on a programme of sensitisation and basic on-site training.

6.4.2 Facility level

- A pre-assessment visit by the national trainer or coordinator to each district hospital to familiarise herself or himself with conditions on the ground and to feed useful information into the planning of training.
- Initial two-day workshop for two staff members from each district hospital who will be intimately involved in the implementation process (preferably a clinician and a nurse – nomination of delegates by DHO could be done in consultation with the chief medical/clinical officer).
- The DHO of each district would have communicated with the two members nominated for training on what had been planned at district level.
- Each hospital to work out a plan of action with timelines and names allocated to each identified task.

6.5 Implementation

6.5.1 District hospitals

- The DHO and the two trained members (and possibly the chief medical/clinical officer) form a core group to take the implementation forward – they meet as needed or according to a specific schedule to discuss progress and problems.
- Each facility starts implementing according to its own plan of action.
- The national trainer does regular on-site facilitation visits (e.g. three times, once every three months) to monitor progress and assist in solving problems.
- Meetings between the DHO and health centre managers have KMC as a fixed point on the agenda for at least two to three years.
- Benchmark at hospitals with existing KMC units or spaces.
- All ambulance drivers and HSAs get a basic orientation in the transport of all referred babies in the KMC position.

6.5.2 Health centres

- The national trainer and the person responsible for rolling out KMC at health centres (e.g. the DNO) liaise on the following:
  - visiting one or two health centres where she or he models the principles and process of on-site facilitation (at the same time as the first facilitation visit to the district hospital)
  - the DNO continues at other health centres as part of regular visits – with a deadline for having visited all health centres at least once
  - means of communication should the roll-out person (e.g. the DNO) require assistance with any problems that may arise

6.6 Monitoring and evaluation

When planning for the tracking, monitoring and evaluation of the implementation of KMC there are two foci to attend to, an immediate focus and a long-term focus. The immediate focus is the question whether (and how) KMC has been implemented. The long-term focus concerns the

question whether KMC practices, in the context of ENC, are being maintained and sustained. Figure 4 graphically depicts the different foci in terms of implementation and sustainability.

The following are a number of aspects that any Ministry of Health needs to take into account when planning their follow-up of the implementation of a new intervention:

- At the end of a specified period a walk-through visit is done at each district hospital by the national trainer and, if possible, by an independent assessor as well, using a progress-monitoring tool to check the progress of implementation and the potential for sustainability.
- A sample of health centres should be visited to qualitatively assess the uptake of KMC at health centre level and to check some records.
- There should be some form of certification for hospitals and health centres that have successfully implemented KMC and shown evidence of sustainability.
- A plan should be developed at health systems level to include KMC as part of other tracking and assessment mechanisms of the quality of newborn care (e.g. it should be included in SWAp).

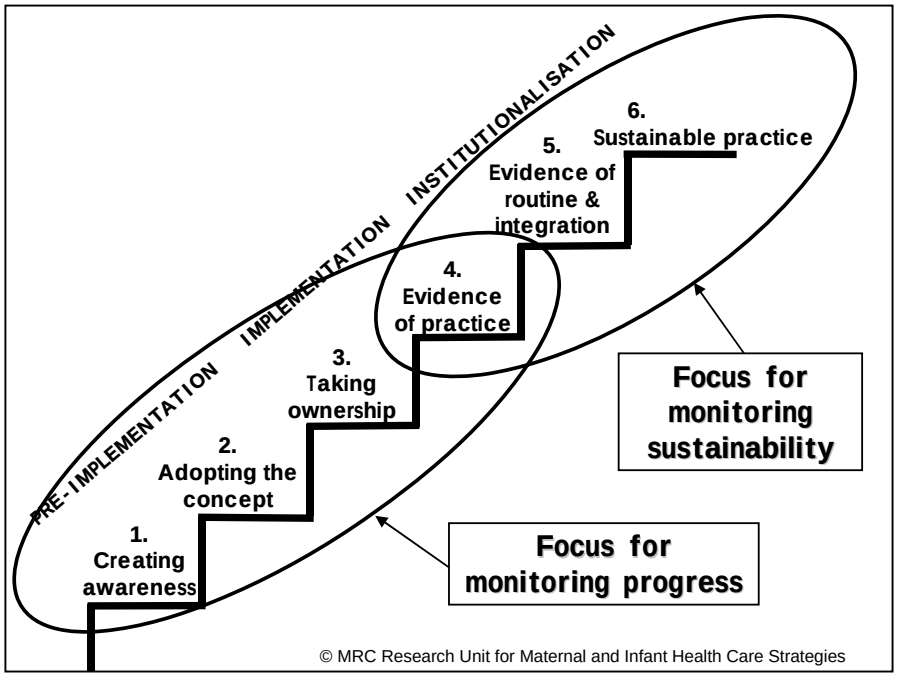

Figure 4. Monitoring of implementation and sustainability of KMC practices

7 CONCLUSION

Kangaroo mother care has already been shown to work in Malawi and could be scaled up further in a sustainable manner in the Malawi health system with moderate additional resources and linking to the Essential Health Package. Available space in, say, the postnatal ward could be earmarked for mothers practising continuous KMC. Special beds and special wraps are not prerequisites for KMC. Measures should, however, be devised to allow KMC babies and their mothers to receive adequate care by ensuring that the care and supervision of these patients are included in the tasks of all health care workers working in maternity and neonatal units. Ward rounds by clinicians should also include these babies. In order to be feasible, training for health workers should take place mainly on site, initially with appropriate support from the Ministry of Health through the provision of a national KMC trainer/coordinator, district coordinators and short workshops for key role-players in each facility.

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APPENDIX I

SUMMARIES OF FEEDBACK FROM INDIVIDUAL HOSPITALS

I.1 ZOMBA CENTRAL HOSPITAL – SUMMARY OF DIRECT FEEDBACK

In a meeting with the Head of Paediatrics, Dr Charlotte Adamcsick, she expressed her satisfaction with the status of the health facility and referred to the experienced and dedicated staff, especially the quality of the nurses in comparison with those at other health care facilities in Malawi. There is nevertheless a shortage of nurses. Although there are more incubators and two resuscitators have recently been received, more are required. The hospital has received funding for buildings and now has facilities for KMC, and for training. Nursing staff receive continuous training in KMC application as part of ongoing improvement. There is also a good statistical system with the aid of which a monthly report is compiled. The latest KMC statistics were also shared with the team: From January to June 2007 there were 129 admissions to the KMC unit. Of these, 116 (90%) were discharged alive (there were no proper records for 10% of the admissions). Seventy four (64%) came for the first review and 52 (45%) for the second review.

The KMC centre was officially opened in Zomba in November 1999 in response to the high number of neonatal deaths due to hypothermia. The paediatrician was invited to an international KMC conference in Bogotá, Colombia, at that time and realised that the same problems existed, namely inadequate incubators, maintenance problems, more than one baby in one incubator, cross infections and difficulty in regulating temperatures for different ages and weights. Infrastructure and staff development were investigated. Funding was received from the European Union (EU) to reconstruct the nursery. Staff development was needed to get the new mindset of low-cost care accepted. A delegation of 4 people (2 nurses, 1 clinician and 1 patient attendant) was sent to Zimbabwe for a 2-week orientation. Then one nurse and one clinician were sent to Bogotá for one month's training. This increased the confidence of the staff in KMC. Some of the nurses who were originally trained still work at the centre.

Since then things have been going very well. The KMC unit is a 12-bed unit in the neonatal ward. It is staffed by five nurses and three patient attendants, all of them trained in KMC. Nurses take the leading role in KMC and do both KMC and general nursing, as KMC has been made an integral part of neonatal care. Through the years there has been a turnover of staff, as a result of rotations and redeployment of staff, but also because members of staff have moved away from Zomba. New patient attendants have had to be taken in, although on the nursing side there has been more continuity, with the retention of some of the experienced nurses. Patient attendants play a very important role in looking after the social and emotional well-being of the mothers.

In 2002 the KMC unit became a training centre with the assistance of Save the Children through Saving Newborn Lives. A KMC coordinator and trainer were appointed to train the members of staff who did not go to Harare and Bogotá. Training material was developed and trainees' training fees and accommodation costs were covered.[1] Theoretical training was done at the Zomba School of Nursing and practicals were done in the KMC Unit. Save the Children supported the training centre by donating equipment (e.g. computers) and educational materials (e.g. videos from other countries to show clients that KMC was also being practised elsewhere).[2]

[1] The training manual is available from the Save the Children Office in Malawi.
[2] Zomba Central Hospital was the first hospital to have videos for patients in the whole of Malawi.

Follow-up visits were another challenge. To ensure attendance, mothers were reimbursed for transportation. This was not sustainable in the long run. A central hospital does not have control over the health centres. This was perceived as an obstacle with regard to referral back from the hospital to the health centres. Another referral dilemma from health centre to hospital is perceived to be the policy of only treating maternal emergencies as ambulance emergencies and not those of newborns in distress. As a result, many of the infants are hypothermic when they arrive at the hospital. In talks between the hospital and the district head office one of the proposals was to have one nurse trained in KMC at each health facility to assist with follow up. Traditional birth attendants also favoured the practice of putting babies who had to go to Zomba on the chest.

The nursery and the labour ward are separated from each other. Babies are not brought from the labour ward to the nursery in the skin-to-skin position, as they are often brought without their mothers, who are still recovering from the birth. (Mothers are given one hour's resting time.) Although there is no policy preventing the baby from being carried in a skin-to-skin position, there does not seem to be adequate motivation. All babies are started on an incubator for about 2 days or until they have been stabilised. Mothers express breast milk or else the baby is taken to the mother. Babies are not given formula to prevent hypoglycaemia. Not all babies are on antibiotics. Intermittent KMC is not routinely practised while the babies are in the incubator, although it has occasionally been prescribed. The mother's ability to do KMC is seen as being related to her level of literacy. Routine intermittent KMC would be possible if things were more organised. After two days, when the mother has recovered, she is sent to the nursery with the baby. The baby is admitted to a transit room until the child is stable and the mother is doing well. There pre-counselling takes place. The mother should be willing and child well before KMC is started. Health education is given to mothers and guardians. They are taught how to position their babies, how to position the mother on the bed, how to express milk and feed it by nasogastric tube and cup, how to recognise danger signs in newborns and how to resuscitate them. Mothers are also urged to take good care of their babies, so that they can gain weight faster and be ready for discharge earlier.

Babies are discharged if they have attained at least birth weight, have gained a minimum of 10g per day for three days, are taking their feeds well (cup feeding or feeding directly from the breast) and when their general condition is stable. There is a weight demarcation of a minimum of 1500 g (previously it was 1300 g but this was changed, as the smaller infants were not doing so well at home). The clinician, in consultation with the nurses, makes the final decision on when to discharge. A discharge scoring sheet such as the one used in Colombia is not used.

On discharge guardians should have ensured that certain things have been done at home, for example covering open windows, preparing a pillow or bag of sand for the mother to rest against, and redoing the mud floor to minimise infection. Babies discharged at <1.8 kg are reviewed every week and those at >1.8 kg every two weeks. It has not been established how long mothers continue to practise continuous KMC when at home or how many deaths occur while the baby is still in continuous KMC. This is evident from the fact that not all babies arrive in the KMC position for the first and second review. A mother's resumption of household chores such as collecting firewood can also influence the "weaning" from KMC. The involvement of the husband in caring for a baby in KMC seems to be minimal. The husbands do not seem to take a turn at carrying the baby.

The staff members present at the discussion felt that the training period for KMC should be two to three weeks full time. Currently KMC training at Zomba takes five to six days -- two days for theory and then the rest for practical experience in the ward. The theory is also integrated with

the practical work. Although this shorter training period is not perceived to be ideal, it is done as a compromise, as it is not possible to take too many staff away from their work for long periods. Being in the ward for a number of days gives the trainees confidence as they see babies growing and being discharged during their stay.

One of the challenges of implementing KMC at other health facilities mentioned by participants was a lack of interest or support from facility management side, as in the case of one big hospital that had sent people for training at Zomba. A problem at central hospitals is the weak link between the hospital and the district health office and the potential resistance at health centre level. With regard to the introduction of KMC at district hospitals and health centres, with the inclusion of HSAs for follow-up, the opinion was expressed that "anything is possible", as district hospitals have a good channel of command and that it would be easier to integrate it into existing programmes. A threat to the sustainability of donor-funded projects or programmes is the termination of the contracts of additional staff funded by the programme. On the other hand it is difficult to organise training without donor funding.

With regard to the scaling up of KMC, a strategic plan should be in place before scale-up can begin. People who are interested and want to implement KMC should be sent for training, as some people have too many programmes to coordinate on the ground at the same time. The possibility of having a training centre in each of the five zones or in each of the three regions was also mentioned. Programme officers would be important people to involve. Furthermore KMC should not cause further digression on staffing and at least one nurse trained in KMC should be available. Participants at Zomba Central Hospital declared themselves available to assist with any scaling up process.

I.2 EKWENDENI MISSION HOSPITAL – SUMMARY OF DIRECT FEEDBACK

Owing to the time and distance constraints, the team was not able to visit Ekwendeni Mission Hospital. A telephone conference was held in order to get some insight into KMC practices at Ekwendeni Hospital.

The implementation of KMC at Ekwendeni Hospital was accompanied by a community outreach that included drama groups and the training of grandparents (*agogos*). Acceptance in the villages was initially slow, but as a result of the project all babies are referred to the hospital in the skin-to-skin position, except those born outside the Ekwendeni catchment area, where there is not the same awareness of the importance of KMC.

A team of health workers were initially trained at Zomba, after which they did further internal training at Ekwendeni. Nurses of Karonga District Hospital also received 5 days' training at Ekwendeni. A 10-bed KMC unit was established adjacent to the maternity and nursery structures with the aid of Save the Children and Saving Newborn Lives. All the managers of the hospital were supportive of the intervention. There are 12 nurses working in maternity. Two of these are specifically tasked with KMC. Only one nurse at a time takes care of the babies in the nursery and the KMC ward. There is no patient attendant. A clinician, who rotates monthly, is allocated to the KMC unit and the nursery and is called in when a baby has a problem. Not all the nurses rotate frequently and this assists with continuity.

There is a nursery for stable babies, where they stay for a day or two before being transferred to the KMC ward. The average stay of a baby in hospital is 3 weeks. Babies born before arrival are first placed in an isolation room before being transferred to the nursery with the other babies. About 16 to 20 premature babies are treated in the KMC unit each month. The hospital has its own *chitenjes* that women use to tie their babies while in hospital.

Babies are fed by orogastric tube according to a fixed feeding schedule. Mothers are called for feeding – for babies <1600g every two hours and for babies >1600g every three hours. Vomiting is recorded and possibly volume of expressed breast milk and time of feeding. Intermittent KMC is also practised on babies, even if they are very small but stable.

Discharge criteria include a 10g weight gain for 3 consecutive days, the regaining of birth weight and a baby and mother who are well and a mother who is willing to do KMC.

A KMC register is kept and follow-up also takes place at the unit. There is no follow-up for mothers who live far outside the catchment area, as these mothers cannot go for follow-up in a government health centre.

Posters from the Saving Newborn Lives program and Zomba Central Hospital are displayed on the walls. There are no job aids. Basic requirements for the introduction of KMC were given as the following: 2 nurses who have been trained, adequate number of premature babies, washroom and toilet, a well ventilated room, heaters, feeding cups, plastic buckets, and a register.

I.3 QUEEN ELIZABETH CENTRAL HOSPITAL, BLANTYRE – SUMMARY OF DIRECT FEEDBACK

QECH has 250 maternity beds and approximately 40 deliveries per day. It also serves as a referral hospital for the areas around Blantyre, as there is no district hospital. Only 45% of midwifery posts are currently filled. As it is a teaching hospital, nursing, medical, clinical officer and medical assistant students are also deployed there for training, making further demands on staff. Personnel from QECH are also involved in training in ENC.

The general paediatric and maternity sections are physically far from each other, which creates its own challenges. There were difficulties in allocating space for a KMC ward but KMC was introduced in 2003 and an article in the *Malawi Medical Journal* was published on practical issues related to KMC.[3] The nine-bed KMC ward is structurally situated in the maternity building within the postnatal ward. The personnel who run the KMC ward are from the paediatric neonatal department. The bed occupancy in the ward is 99%. A new 17-bed unit is under construction and will be directly linked to the nursery. The hospital provides three meals per day to patients and the family supplements this with their own food. Mothers in the KMC ward are encouraged to knit a hat for their baby while they are in the ward.

About 1 200 babies per year are eligible for KMC. In the KMC ward mothers and their guardians practice continuous KMC 24 hours per day. Intermittent KMC is not systematically practised in the rest of the nursery. Mothers come to the neonatal nursery every 2-3 hours to feed their babies. The schedule is designed by the nurses to fit in with breaks and visiting times, so that there are 10 fixed feeding times per day. No KMC is practised in the general paediatrics ward where sick infants are admitted from home. The nurses there have not been trained in KMC. These infants, often several weeks of age, are not admitted to the special care baby unit attached to the maternity ward.

There is a protocol with discharge criteria for babies in KMC. They must be free from danger signs and on cup or direct breastfeeding. A baby of >1.6 kg that has gained weight for two days is allowed to go home. Babies of 1.3 kg must have regained birth weight and must have gained at least 10 g per day for three consecutive days. Mothers are taught the danger signs and are discharged directly home, not via a health centre. Babies are followed up in the KMC ward every three weeks until they weigh 2.5 kg. The follow-up rate is 50%. Factors inhibiting mothers from keeping follow-up appointments include transport difficulties (unavailability and cost of transport) and/or death of the baby at home. Mothers are instructed to come for follow-up with the baby in the KMC position. Not all of them return in the skin-to-skin position, but merely with the baby tied in front.

Eight nurses were trained in KMC in Zomba for five days. One clinical officer and the two doctors attended one of the 5 days at Zomba. On-the-job training for patient attendants was done with regular half-hour talks and day-to-day supervision by a doctor for three months.

It is hospital policy to rotate all nurses through the hospital. There are no special arrangements for orientating new nurses on KMC. The sister-in-charge is instructed in KMC first, followed by the rest of the nurses a month later. New nurses get on-the-job orientation. Continuity is provided by the fact that the patient attendants have not been rotated. Additional nurses are employed in the paediatrics department with the aid of external funds, which allows for some staff continuity. With the patient attendants available for KMC, nurses and medical personnel

[3] Blencowe H, Molyneux EM. Setting up kangaroo mother care at Queen Elizabeth Central Hospital, Blantyre - a practical approach. *Malawi Medical Journal* August 2005; 17(2): 39-42.

have additional time to look after sick infants. Over time a collegial relationship has developed between the nurses and the patient attendants, with the insights of patient attendants being respected.

Crucial issues are discussed at meetings. No general in-service training for KMC has been done in the hospital since January 2007. Personnel expect special time off for training, with lunch allowances or daily allowances.

Specific points for consideration that were discussed were the importance of introducing KMC as part of antenatal health education, as well as a structured programme for practising intermittent KMC in the neonatal unit. Getting KMC on the agenda of the regular perinatal mortality meetings and on the monthly meeting between the hospital and the community health centres was also discussed.

With regard to the scaling up of KMC in the country, participants from QECH expressed their willingness to be involved in the rollout in the southern region. District hospitals had been sending people from time to time to learn KMC on site. Implementation of KMC would require some supervision and some moral support, as well as space. Human resources and financial support may also be needed.

A typed report was received from the nursing staff at QECH, which is included here.

23rd July, 2007

FROM : CHATINKHA ADMINISTRATION / KANGAROO WARD

SUMMARY REPORT:

The Kangaroo ward was as a result of scaling up from the Zomba Kangaroo ward which was commenced in 2002 and 2003 respectively.

In 2003 all nurses and patient attendants were trained by the Kangaroo Staff in the Zomba Central Hospital.

Coordinated by Dr. Hanna Queen Elizabeth Central Hospital
Matron Matola : Queen Elizabeth Central Hospital
Matron Nyirenda: Zomba Central Hospital
Mr. Chavula : Zomba Central Hospital

The tools that were in place can be found in the file in ward 2. Patient attendants were placed in the ward to work under the supervision of the Nursery and Post-Natal ward, i.e. Mrs. Chabwela and Mrs. Levi.

The policy stated that a neonate of a weight of 1.2 kg to 1.5 kg with a stable condition, i.e. pink in colour, no apnoeic attacks, temperature 36ºC, swelling well was to be the criteria for admission.

SUCCESSES

1. Improved quality of life of the Neonate and parents and families.
2. Reduced infection because of use of Kangaroo Care versus incubators whereby babies used to share.

3. Reduced number of neonates in nursery, hence quality of nursing and midwifery care improved due to improvement of midwife – neonate ratio.
4. We are able to teach students of all cadres – midwives, clinical officers, doctors – in the concept of Kangaroo Care since we are a training institution.
5. We are able to use diversional therapy on our mothers/guardians, e.g. radio, playing cards and knitting of babies' warm clothes is done by the patient attendants.

   This is part of leisure for the family/mothers while patiently caring for the neonate in hospital.

CHALLENGES

1. It was a new method in our country to culturally put neonates on the chest than on the back and hence resistance from the users but now it has become acceptable.
2. The mothers felt that the neonate was compressed on the chest, hence difficulties to breathe but now they are used to it and are even requesting to be moved from nursery to Kangaroo.
3. Traditionally mothers believed that they should not express milk because that may cause death of the baby – but now the mothers have adopted to the new culture of expressed breast milk.
4. The current Kangaroo ward is far from the neonatal nursery and causes a delay if a neonate needs to be resuscitated, e.g. apnoeic attacks, but this will no longer be there in the new structure.
5. Traffic control is critical in the current Kangaroo, a lot of guardians want to go in since there was no demarcation to allow them space when they visit but the new structure takes care of this need.

RECOMMENDATIONS

1. Need for a follow up programme whereby there would be resources needed

   1.1 A vehicle for follow up
   1.2 Personnel – Capacity building to ensure we reach most mothers
   1.3 Warm clothes re-supply to the discharged
   1.4 Need for research on how many we have cared for
   How many have survived and so many others issues so as to plan new interventions.

2. Need to scale up to Ndirande or Limbe Health Centre – after needs assessment. To discuss with DHO/DNO

3. Scale up on I.E.C. on Kangaroo i.e.

   Drama Groups -
   Radio/TVM -
   Newsprint Media -

Compiled by Matron: Matron I Matola
After a stakeholders meeting present: Sister Mwenifumbo, Ms. Mlambe, Mrs Masiya, P/A Chabwera

I.4 BWAILA CENTRAL HOSPITAL– SUMMARY OF DIRECT FEEDBACK

Bwaila Central Hospital has about 1 000 deliveries per month, with three midwives per shift. The seven-bed KMC ward was previously a postnatal ward for nursery mothers. After nurses have been trained in KMC, the ward has been renovated for a KMC admission ward. All midwives have been trained in KMC, except one, who has recently joined the unit. There is one patient attendant who is not replaced when she is on leave.

The neonatal nursery consists of two cubicles, one for isolation and the other for all term and preterm neonates. The six incubators are not in use, but in one corner there are two overhead warmers. At the time of the visit there were six infants on these warmers – some receiving oxygen. Two infants were receiving phototherapy. According to the staff, premature babies who have stayed in the main nursery for a long time without picking up weight are put on intermittent KMC. Two of the babies in the KMC unit at the time of the visit, had been ill for a long time and had been on intermittent KMC. Motivational and health talks on KMC are given by nurses, patient attendants and doctors. They take place on a continuous basis while the babies are receiving care, for example when the babies are examined or weighed or when temperatures are checked.

Nurses decide which babies are ready for KMC, as a doctor is not available every day. The criteria for transfer to the KMC unit are that babies have to be stable, with no sign of infection or jaundice. They should be feeding well and gaining weight. The mother should also be well, fit and willing to do KMC. KMC is only started once the process has been thoroughly explained to both the mother and the guardian and they have consented. As an incentive mothers are provided with wool and needles when materials are available and they receive MK 40 for every cap knitted. Mothers also listen to the radio and watch television. At the moment there is also a teaching schedule for informing the mothers on health promotion. Very few men are involved with KMC. Protocols and guidelines are kept in a file. There is a register for all prematures and a special file number is allocated for babies in KMC

Some babies start on feeding by nasogastric tube or cup. Utensils such feeding cups are washed and cared for by the nurses, patient attendants and ward attendants. Mothers are told how many millilitres to give per day. The doctor revises the instructions three times a week. However, there appears to be little supervision over the instructions given to mothers with regard to the volume of breast milk to express. The slogan on the walls in the nursery is: "No documentation, no patient care". None of the babies in the nursery and only some in the KMC ward had feeding charts. A feeding guide had recently been drawn up to guide nurses on the frequency and volume of milk feeds an infant should receive, depending on the infant's age in days and its weight. It has not been established to what extent this guide is acceptable to all staff. The doctor is of the view that without patient attendants it will not be possible to improve on the filling in of feeding charts and on certain other aspects of care.

There is no system for guiding the mothers on when to come and feed their infants. In the past, mothers had to feed infants according to a strictly three-hourly time schedule. The nurses would ring a bell or call mothers at feeding times. At some point the message of exclusive breastfeeding was given to the nurses and they were told that feeding should be on demand and not according to a strict time schedule. Since then the mothers have also been instructed to feed on demand and they cannot understand why they have to feed the baby if it is not crying. Babies are fed at night "if the mother comes".

Follow-up of KMC babies has been done since 2004. The follow-up clinic takes place in the neonatal unit in a room adjacent to the KMC ward. Babies are weighed on the same scale that was used during their stay in the ward. Each review visit is documented on a special follow-up sheet, which is stored in a box. Mothers are given a date for come for follow-up, depending on the weight of the baby. Follow-up takes place weekly for babies between 1.8 and 2 kg and every two weeks for babies between 2 and 2.5 kg, after which they are discharged to their nearest health centre. Mothers who live very far from the hospital are encouraged come back at least once, otherwise follow-up is done at the nearest health centre until the baby weighs 2.5 kg. Communication with health centres is a problem, as there is no feedback from these centres on the babies they are supposed to follow up. Home-based follow-up is not done because of the lack of transport. Transport is also an obstacle that prevents some mothers from returning for follow-up at the hospital. Small incentives such as a watch or blanket are sometimes given to mothers to encourage them to return to the hospital for follow-up. Among those who live close by, the turnout for follow-up is good. However, it is uncertain what percentage of discharged babies comes back for review.

Attempts are being made to organise more regular perinatal mortality meetings and neonatal death audits will be done from September 2007. Nurses are sometimes invited and an attempt is being made to organise discussions of common problems. The doctor at the neonatal unit is of the view that, in order to improve the quality of care, more people need to be employed, salaries need to be raised, more use should be made of patient attendants and a project manager should be appointed to the unit.

Specific points regarding care that were discussed during the visit included the following:

- **A more systematic programme of practising intermittent KMC.** There were many babies in the nursery who could have benefited from intermittent KMC. If more mothers were expected to do intermittent KMC for several hours a day, the infants might gain weight better and mothers might also be eager to be transferred to the KMC unit, which is more comfortable than doing KMC intermittently.
- **A rigid feeding schedule is needed for premature infants** and even term infants in wards where there is no rooming in, otherwise babies may become hypoglycaemic and/or will not have satisfactory weight gain. It is also important to give mothers guidance as to the amount of milk that should be expressed with each feed if the infant is still receiving cup feeds. A chart showing different weights, age of patient in days and volume of feeds is a very helpful tool which saves a lot of time in units where there is a shortage of staff.
- **Proposal that resuscitation should take place in the room adjacent to the KMC room.** Babies who suddenly change condition are taken back to the main nursery for resuscitation. (Some mothers also delay in reporting a sudden change in their baby's condition, which may result in a neonatal death in the KMC ward.) Mothers in the nursery may get discouraged when resuscitation is necessary and sometimes refuse to go to the KMC unit out of fear. **Mothers could be taught to tick off feeding charts** (e.g. when the baby received a feed), if the staff does not have the time to complete them.
- **Placing babies nearer to the phototherapy lamps** to avoid dilution of effectiveness.

I.5 ST LUKE'S MISSION HOSPITAL– SUMMARY OF DIRECT FEEDBACK

The visit to this hospital was not part of the planned schedule, but as it was on the way a courtesy visit was paid to familiarise the team with conditions at the hospital. There is a four-bed KMC ward in the maternity wing. Heating is a problem and there is a shortage of staff and equipment (even gloves). Patients are not provided with food.

Patient attendants were trained at Zomba in 2002 and the presiding medical officer had endeavoured to see that all the nurses were trained before he returned to the Netherlands. After birth preterm babies that are not referred are kept in a nursery for two days before being eligible for KMC. Babies are discharged earlier if the baby is thriving and the "mum is brilliant enough".

The sister in charge of maternity was of the view that the rolling out of KMC to health centres was feasible and indicated that the chiefs and the community should participate, as "the patient is part of them and us".

I.6 MANGOCHI DISTRICT HOSPITAL– SUMMARY OF DIRECT FEEDBACK

The process of setting up KMC in Mangochi District Hospital started with Save the Children's Saving Newborn Lives program, with two groups being trained for two weeks at Zomba Central Hospital in 2003. The first group that was trained did not understand KMC well and was not sure what to do. After the second group had been trained there was a better understanding. Of the people trained initially, only two nurses are left. Nurses rotate every year between maternity, paediatrics, and the male and female wards. They have all received training in ENC, which included two days of KMC, one day of theory and one day of practice. There appear to have been interruptions in the practice of KMC with no babies having been in KMC for some months, for example in March 2007. After training KMC was resumed and the situation improved.

After birth babies are put in a cot in a heated nursery to be stabilised. Mothers are instructed to feed by cup if the baby is not able to suck. There are two new incubators in the nursery but no one knows how to operate them. No intermittent KMC is done here and no guardians are allowed. Babies on antibiotics are kept in the same nursery as the other prematures.

Babies are then transferred to a KMC ward, which is situated in the postnatal ward. It currently has four beds only – which were all occupied during the visit – but it is supposed to have 10 beds. The others were apparently taken away because they could not be raised at the head end. Babies therefore have to wait in the nursery until a bed becomes available in the KMC ward. One guardian per patient is allowed in the KMC ward. Heaters do not last long as a result of rust. This problem was brought to the attention of the DHO and new heaters will be bought in September. The problem with the beds will also be attended to, since mattresses are available at the hospital.

One of the main challenges in sustaining KMC is staffing. There is one cleaner/patient attendant located in the KMC ward, but no clinical officer to assist with the monitoring and care of the babies. No ward rounds are currently done, but the DHO is to discuss the inclusion of the KMC ward in ward rounds with the clinician in the maternity ward. This would require a job orientation in KMC. No specific nurse had been allocated to KMC until recently and postnatal staff were not willing to work in the KMC ward. In the discussion it was mentioned that there should be at least two nurses allocated for KMC so that when one is off duty the other one could continue to provide KMC services. However, if nurses allocated to the KMC ward are off duty or attending to other duties somewhere, patient records remain blank at that particular time since the patient attendant only records weight, temperature and amount of feeds. The patient records observed in the ward at the time of the visit were not filled in, apart from birth weight and weight after four days. (The scale in the ward only measures in 50 g increments.) The space for the clinician's and nurses' notes was blank. Third-year students from other hospitals who come for clinical experience are not orientated in KMC, as they have not yet done high-risk newborn care.

Nurses discharge babies from the hospital, as there is no clinical officer allocated to the KMC ward at present. Discharge depends on the admission weight but is usually between 1,8 and 2 kg. The baby should have regained birth weight and should gain weight for three consecutive days. There should be no problems with feeding and the mother should be willing to continue with KMC.

Mothers are told to come back to the hospital for follow-up after two weeks. There is a problem, however, as there are sometimes only two nurses on duty. Some are told to go to their nearest

health centre, although staff at the health centres may need refresher training. Distances and transport remain a problem for follow-up visits. If a mother defaults on follow-up her physical address is given to the HSA.

A suggestion was made by the team with regard to sharing the need for clinical supervision in the KMC ward at one of the clinical meetings, but it appears that this may fall outside the scope of these meetings.

I.7 MULANJE MISSION HOSPITAL– SUMMARY OF DIRECT FEEDBACK

Mulanje Mission Hospital serves 72 villages with a population of 66 000. It is a 192-bed hospital with 8 delivery beds. Most low birth weight babies born in the villages are referred here, as well as all LBW babies from the district hospital under the government-CHAM service agreement. No referred babies are transported in the KMC position, the reason being that mothers have not yet given consent for doing KMC. The hospital is a fee-paying hospital but the fees are not as high as at some other hospitals. It depends on donations to cover 50% of its expenses (e.g. linen, the cost of training on hospital equipment, drugs, running costs). Some drugs, such as antiretrovirals, contraceptives, TB drugs and cotrimoxazole are provided by the government. There is an obstetrician and gynaecologist working at the hospital and he also visits the district hospital. There are three traditional birth attendants in the area who have been trained in safe motherhood. Other extensive community sensitisation programmes in the catchment area, such as the practice of exclusive breastfeeding and free maternity services, have proved to be effective. The hospital has a regular newsletter in which an article on KMC was recently published (see below).

KMC was started in March 2005 on the initiative of a Dutch doctor who had observed the practice in Zambia. Safe Motherhood provided a 7-bed KMC ward in the maternity wing, which is run by a clinical officer, nurses and a patient attendant. Seven nurses and one clinical officer were trained in Zomba. They then became the local trainers for the hospital. More nurses were trained, but owing to a lack of funds the remainder have not yet been trained. There is a vision of training all members of staff, including the gatekeeper and administrative personnel, as they play an important advocacy role in the community and could help to get the practice of KMC for small babies accepted, as people sometimes laugh at mothers carrying their babies skin-to-skin in front. There are many programmes in the community, with about 700 volunteers, and they have seen the benefits of KMC. In a discussion on the nature of training for different target audiences, the view was expressed that not all cadres need full training in KMC. HSAs should know the importance of putting the baby on the chest (skin o kin) and should know how to do it, how to recognise which babies need to be referred and that exclusive breastfeeding should be practised. Administrative staff should know why KMC is important and should encourage women who do KMC and not show surprise. KMC is included in antenatal health education. There is a waiting home for pregnant women. They have contact with the mothers in the KMC ward.

KMC was started with 15 babies, all gaining weight, and no neonatal death occurred in the first month. Previously babies stayed in the nursery for almost three months. Now mothers stay for one to two weeks. The baby spends the first day in a crib in a heated nursery for observation of vital signs. No intermittent KMC is practised. Many of the nurses are not keen to put a baby in KMC, especially when the baby is sick, because they lack intensive training. The mother gives EBM or direct breastfeeding and is counselled on KMC. According to the clinical officer all premature babies receive antibiotics for 5 days.

The number of babies in the KMC ward depends on the season. Sometimes the ward is full, sometimes not. At the time of the visit there was only one baby in the ward; the other baby found there had already been discharged and had come for review There are written admission criteria for starting with KMC, which include a stable baby that does not have a nasogastric tube and the mother's willingness to have the baby in the KMC position night and day. Previously some mothers used to leave their babies in the nursery and forget about them. Some babies would die because they were not fed frequently enough. With KMC the baby is with the mother all the time and she is allowed to accompany her husband or go to the market. If the baby is an

orphan the guardian will do KMC after discharge. Guardians are sent to the orphan care training centre where they are taught how to take care of the baby. There was one father who cared for his baby by means of KMC after the mother had died. The daily routine in the KMC ward includes health education about exclusive breastfeeding, the danger/warning signs in the baby, and personal hygiene. There is also a TV and *bao* game set as part of the recreational activities.

Babies are discharged if they are able to suck, have regained birth weight and have gained 10 g per day for at least three consecutive days. The guardian also has to ensure that a 50-kg bag of sand is prepared for the mother to rest against when she returns home.

Follow-up is done in the KMC ward until a baby weighs 2.5 kg. Babies who are not gaining weight are readmitted. Mothers are given a date for coming back for review. Babies weighing 1.5 kg come back after one week for review. Babies of > 1.5 kg (e.g. admitted at 1.3 kg with no problems) come back after two weeks. It is not clear to what extent mothers continue to carry their babies in the KMC position while at home. There is no systematic means of following up mothers who do not come for review. This was discussed with the PHC department which is already working with the community and will be doing the follow-up visit in the villages. There are also mobile clinics where follow up could take place. Government HSAs are used for follow-up as they have also been trained in KMC.

Other challenges include the integration of different vertical programmes with different sources of funding and separate managers. The same staff on the ground are involved in many of them. Better cooperation in transport arrangements, for example, is under discussion. Some resistance is being encountered.

Records are kept that provide data for the Health Information Management System, for example the number of admissions and the number of deaths. KMC babies are recorded in the general admissions registers. There is also a special register for babies in the KMC ward, as well as a set of record sheets for every baby, in which daily weight, drug administration feeding and temperature charts and other vital information are recorded by the nurse and the clinical officer.

In the discussions the participants indicated that a step-down system of discharging mothers and babies not quite ready to go home to a government health centre nearer to their home would be feasible. This would be helpful when a mother wanted to go home and when she lived too far away to come for follow-up at the hospital.

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2nd Quarter 2007

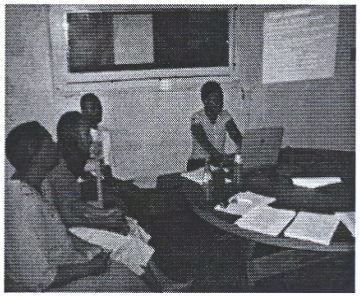
Mulanje Mission Hospital Newsletter

Kangaroo Mother Care Initiative

By Thoko Lipato - Principal Nursing Officer

Kangaroo Mother Care is the care given to underweight babies more especially who are born too small. Through this care the baby is kept in skin to skin contact with the mother day and night. This natural method has been proven to be effective in reducing the neonatal deaths in a poor resource area like ours. This is so because it has shown to be the best way to protect the baby from getting cold, promotes breast feeding, promotes mother –baby bonding and mother confidence in caring for the small baby. Mothers can leave the hospital much sooner than if the babies are kept in an incubator in a nursery where they are more restrictions.

MMH adopted this method of caring for underweight babies in March 2005 after seeing that it was having high number of neonatal deaths. Before this method the death rate was above 25% of all the admission in our nursery. This was so because babies were just kept in nursery and mothers were allowed to enter on scheduled time like every 2hrs for feeding with one nurse on duty to look after 40-50 patients plus 15 babies in a nursery in a day, the care was inadequate and this contributed to the increased number of neonatal deaths within the hospital. Upon seeing this MMH organized a training for a few members off staff 7 nurses and 1 clinical officer to initiate the new care concept. The first trainings proved fruitful, KMC started well and in March 2005 no deaths occurred to mothers who agreed to take care of there underweight babies through kangaroo method.



MMH staff members undergoing KMC Training.

This good initiative reached out to many in the district, that we saw a great increase in the number of admission of premature babies to our KMC ward as the whole district started referring the underweight babies to us. This increased workload on the few nurses who were trained and also as a newly introduced concepts of care it raised some eyebrows.

In view of this trainings were conducted in February this year for a large number of staff members to promote support to mothers who practices KMC with funds from the Joint Capacity Building Programme under CHAM.

With the trainings we have had ,there has been tremendous improvements. In the last year we had 144 admissions, with a death rate of only 8%.

But we are also facing a lot of challenges which includes,

1. Lack of linen—We are in need of more flannel blankets for babies and mother blankets.

2. Lack of funds for organizing community sensitization campaign on the KMC methods.

3. Follow up visits are not done regularly due to inadequate staff members

Finally we thank all the staff members and our partners involved for the great support they give and we are looking forward to having a good cooperation as we strive to create a conducive environment for the underweight baby.

I.8 MITUNDU COMMUNITY HOSPITAL– SUMMARY OF DIRECT FEEDBACK

Mitundu Community Hospital opened in 2004. There are an average of 200 deliveries per month, with 10 caesarean sections. All infants weighing < 1500 g are transferred to Bwaila Central Hospital.

One nurse and one clinical officer were trained in KMC in 2004. The clinician has since left and the nurse trained in KMC is currently working in a general ward. There are hospital attendants to help nurses when they are too busy. However, all cadres of staff also rotate to different wards, which causes a problem with continuity.

There is a small neonatal room with one bed in which KMC could be done. This ward also has an incubator which has been donated but is not used, as nobody has been trained to use it. There is a problem with heating in this room and more than one baby may be in need of KMC. Staff do not think it would be possible to practise KMC in the 16-bed postnatal ward, as there are not enough beds.

Premature babies are discharged at a weight of 2 to 2.1 kg and are followed up weekly at the ward until they reach 2.5 kg. Most of the babies come back for follow up. Some babies who were sent to Bwaila Hospital are also followed up at Mitundu Hospital, although they sometimes go back to Bwaila for follow-up.

I.9 NKHOMA MISSION HOSPITAL– SUMMARY OF DIRECT FEEDBACK

Nkhoma Mission Hospital has 100 to 140 deliveries per month. There are four doctors and eight clinical officers. KMC was introduced in 2006 as part of a neonatal project by two Dutch nursing students. Two of the doctors also have previous experience of KMC in Namibia.

At the moment there is no nursery because renovations are being carried out. While the present nursery is being used as a sonar room, any baby with respiratory problems is cared for in the labour room on the resuscitation warmer. There is no separate KMC unit, but a few ordinary hospital beds in the postnatal ward are screened off, where mothers can practise continuous KMC. Babies are secured in a wrap and shirt, which mothers are allowed to take home. There were no babies in KMC at the time of the visit and documents pertaining to KMC were locked in the sonar room. The team did not specifically ask about infant feeding schedules for premature babies.

Babies are followed up at one week after discharge and premature babies are followed up until they reach a weight of 2.5 kg. About 50% of babies are brought back for review. Some babies are followed up at the surrounding health centres.

According to comments received afterwards it was felt that the physical structures were not ideal for KMC. However, enthusiasm was displayed about caring for premature babies with the aid of KMC. The advantages of KMC were acknowledged, as it has been observed that KMC babies grow well.

I.10 LIRANGWE HEALTH CENTRE– SUMMARY OF DIRECT FEEDBACK

(No confirmation has yet been received from the health centre on the accuracy of this report.)

Lirangwe Health Centre was included in the survey to get a better picture of how health centre infrastructure would fit in with the scale-up of KMC. Lirangwe is one of the proposed sites for scale-up in the Blantyre District Plan. The staff component consists of 1 medical assistant, 4 nurses (until recently only 2) and 4 patient attendants. Eight HSAs are also based in the catchment area, which has a population of 22 611. No staff members have been trained in KMC or ENC. The number of outpatients seen per month is about 3 000, with more in the rainy season. Deliveries are 60-65 per month. Babies of < 2.2/ 2.3 kg are referred to QECH and those > 2.5 kg if there are problems. Babies discharged from QECH come through the health centre. Babies born at home come to the health centre and are then referred.

If problems arise during labour the mother is referred. Babies are wrapped and not transported in the skin-to-skin position. The nurses indicated that neonatal resuscitation equipment was available, although the team did not confirm this by observation. Mother and baby are kept in the postnatal ward for one day before being assessed for discharge. They have to come back after one week and then again at 6 weeks. Antibiotics are not always available.

All the nurses at the health centre were involved in the discussions and the commitment they showed in attending even when off duty was highly appreciated. All the participants in the discussion also confirmed the commitment of the health centre to participating in the programmes involving the scaling up of KMC. They indicated that KMC would be culturally acceptable to their clients and that it could work at their centre. The District Nursing Officer was also supportive of the initiative.

Other points that were discussed while walking through the facility were the conversion of one corner of the postnatal ward into KMC beds and the use of the current admissions record book to record whether a baby is on KMC. It was also mentioned that special beds with raised head ends were unnecessary and that mothers should be encouraged to walk around with their babies in the KMC position.

APPENDIX II

HEALTH FACILITY		Total number of staff									
		Maternity ward					Paediatric ward				
		Nurses	Aux. Nurses[1]	Clinicians[2]	Pt. Att.	Nurses / shift	Nurses	Aux. Nurses[1]	Clinicians[2]	Pt. Att.	Nurses / shift
GOVERNMENT FACILITIES	Queen Elizabeth Central Hospital	30	3	10 – 20	6	6-8	39	2	±20	37	Varies
	Zomba Central Hospital	12	2	4	5	5	11	4	3	5	2
	Bwaila Central Hospital[3]	20	5	2	6	8	-	-	-	-	-
	Mangochi District Hospital	9	3	1	2	1	6	2	1	2	2
	Mitundu Community Hospital	7	-	3	5	1	5	-	3	5	1
	Lirangwe Health Centre	4	-	1[4]	4	1	-	-	1	-	-
CHAM HOSPITALS	St Luke's Mission Hospital	6	-	1	5	1-2	4	-	1	4	1
	Ekwendeni Mission Hospital	12	-	1	10	1	8	-	1	4	2
	Mulanje Mission Hosp	15	-	2	5	2	6	-	1	4	2
	Nkhoma Mission Hospital	5	-	2	3	1	5	-	2	2	1

1 Auxiliary nurses are not allocated to mission hospitals, community hospitals and health centres

2 Clinicians in most health facilities are not allocated to one department but attend to more than one department each day and / or rotate between departments on a regular basis

3 Bwaila Hospital has no paediatric ward apart from the nursery; the main paediatric ward is at Kamuzu Central Hospital

4 Lirangwe is a health centre and one clinician (medical assistant) is in charge of the facility. The four nurses cover all the services at the health centre..

MALAWI NATIONAL GUIDELINES FOR KANGAROO MOTHER CARE

February 2005

Ministry of Health

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ABBREVIATIONS

DHS	Demographic and Health Survey
EBM	Expressed Breast Milk
HIV	Human Immunodeficiency Virus
IMR	Infant Mortality Rate
KCN	Kamuzu College of Nursing
KMC	Kangaroo Mother Care
LBW	Low Birth Weight
KCH	Kamuzu Central Hospital
MOH	Ministry of Health
PHC	Primary Health Care
PMTCT	Prevention of Mother to Child Transmission
RH	Reproductive Health
SCUS	Save the Children (USA)
SNL	Saving Newborn Lives
UNICEF	United Nations Children's Fund
WHO	World Health Organization

DEFINITIONS

Morbidity:	The state or condition of being afflicted with disease or the proportion of sick people in a particular community. The relative incidence of a disease.
Mortality:	The state of being subject to death.
Mortality Rate:	The ratio of deaths in an area, expressed per 1000 per year or the rate of death per unit of population.
Neonatal death:	The death of an infant within 28 days (0-27) of birth who after delivery, breathed or showed any other evidence of life such as a heartbeat.
Infant death:	The death of a baby before its first birthday.
IMR:	Infant Mortality Rate – is the death rate in a calendar year of children during their first year of life; it is usually expressed per 1000 live births in the same calendar year.
Infant:	A baby aged less than one year (birth to 1 year)
Low birth weight:	Birth weight of less than 2500g regardless of gestational age
Very low birth weight:	Birth weight of less than 1500g regardless of gestational age
Extremely low birth weight:	Birth weight of less than 1000g regardless of gestational age
Stable Baby:	A baby whose vital functions (breathing and circulation) do not require continuous medical support and monitoring

1 INTRODUCTION

The newborn's ability to survive and thrive in the neonatal period and through infancy is strongly influenced by the birth weight. Low birth weight (LBW) is the most important contributing factor to neonatal morbidity and mortality. Between 40 and 80 percent of all neonatal deaths occur among low birthweight babies. Compared to babies with normal birth weight, low birth weight babies have a much greater risk of dying.

In Malawi, 42 percent of all infant deaths occur during the neonatal period. Approximately, 20 percent of babies born are of low birth weight and these babies, being more vulnerable, contribute significantly to the high neonatal and infant mortality rates (IMR 103.8 per 1,000 live births – Malawi DHS 2000).

Care of LBW babies requires special attention, particularly with regard to warmth, feeding, hygiene practices, and prompt identification and treatment of infections. Kangaroo Mother Care (KMC) has been found to be an effective method of care for stable low birth weight babies.

To facilitate the establishment and expansion of KMC as a method of care for stable low birthweight babies in Malawi, KMC guidelines have been developed for health workers.

Training in KMC shall be conducted by qualified trainers who will have undergone an appropriate training course.

2 AIM

To facilitate the use of Kangaroo Mother Care (KMC) for stable low birth weight infants.

3 OBJECTIVE

To provide a guide that will assist providers to establish Kangaroo Mother Care (KMC) as a safe and effective method for low birth weight babies (LBW) at all levels of care.

4 KANGAROO MOTHER CARE (KMC)

Kangaroo mother care (KMC) is an effective way to meet baby's needs for warmth, breastfeeding, protection from infection, stimulation, safety and love. It is care of low birth weight infants carried skin-to-skin with the mother/substitute and is a powerful, easy-to-use method to promote the health and wellbeing of infants born preterm as well as full term. Its key features are:

- Early, continuous and prolonged skin-to-skin contact between the mother and the baby;
- Exclusive breastfeeding;
- It is initiated in hospital and can be continued at home;
- It is gentle, effective method that avoids the agitation routinely experienced in a busy ward with low birth weight infants.

5 BENEFITS OF KMC

- Helps maintain an appropriate body temperature for the newborn
- Promotes breastfeeding, resulting in a higher rate and longer duration of breastfeeding

- Babies gain weight and grow faster as KMC promotes feeding on demand and reduces the need for high caloric expenditure from the baby to maintain body temperature
- Reduces vomiting caused by gastro-esophageal reflex
- Decreases mortality of low birthweight babies as it reduces the occurrence of apnoeic attacks, irregular breathing and hypothermia
- Associated with less infections and when they occur, they are less severe
- Increases mother's confidence in handling her small newborn and improves bonding
- Reduces hospital stay for mother and baby (early discharge)
- Reduces costs for the health facility and the mother/guardian as minimal equipment is required and is less expensive than incubator care
- Enables fewer nursing staff to care for larger numbers of low birthweight newborns

6 HOW TO PRACTICE KMC

6.1 When to start KMC

It is recommended that all babies less than 2500g could be started on KMC:

- As soon as the baby is stable
- Also pay particular attention to the condition and status of each mother/guardian

Note: At least all babies below 2000g should be Kangarooed

6.2 Eligibility Criteria for KMC

- Willingness of mother to do KMC
- Baby should have stable condition:
  - No major illness present such as septicaemia, pneumonia, meningitis, respiratory distress and convulsions
  - Babies who have been started on antibiotics for suspected infection can start KMC as soon as they are stable
  - Intermittent KMC until fully stable
- Babies under phototherapy may be evaluated to receive intermittent KMC

Refer all LBW babies with a weight below 2000g to the nearest health facility with KMC services or to a higher level of care

6.3 KMC Position

Key KMC Positioning Steps:

Step 1 - Dress the baby in socks, a nappy and a cap (chipewa).
Step 2 - Place the baby between the mother's breasts.
Step 3 - Secure the baby on to the mother's chest with a chitenje cloth.
Step 4 - Put a blanket or a shawl on top for additional warmth.
Step 5 - Instruct the mother to put on a front opened top
Step 6 - Instruct the mother to keep the baby upright when walking or sitting.
Step 7 - Advise the mother to have the baby in continuous skin-to-skin contact 24 hours (or less if intermittent KMC) per day.
Step 8 - Advise the mother to sleep in half sitting position in order to maintain vertical position of the baby.

6.4 KMC Nutrition

Breast-feeding

- Breast milk is the food of choice for all babies
- Have all babies on KMC immediately and exclusively breastfed on demand
- Feed babies who are not able to suck frequently with expressed breast milk (EBM), initially by cup or in certain circumstances by nasogastric tube
- While the sucking reflex is emerging, supplement these feeding methods by having the baby put to the breast for brief periods
- Once the baby is suckling well, the baby should be exclusively breastfed

Alternative feeding options

- For mothers who are HIV positive, counsel them on alternative feeding options for the baby, according to the Infant and Young Child Nutrition Policy and Guidelines

The calculation of feeds should be done using a guideline for volume of feeds required per day based on the age (in days) and weight of the baby. (See Appendix)

6.5 Care of the baby during KMC

Infection prevention

- Wash hands
  - ✓ Before and after feeding baby
  - ✓ Before and after changing nappies
  - ✓ After using the toilet
- Clean or wipe baby daily ("head to toe")
- Ensure baby always wears clean nappies
- Ensure all cups and feeding utensils are clean before and after use
- Apply all other standard infection prevention measures

Monitoring

- Monitor vital signs twice a day, and more frequently when required
- Record feeds given as per schedule used
- Monitor growth by taking daily weight of the baby - at least 10g/day must be gained by the baby. If poor weight gain, assess possible causes such as inadequate amount and frequency of feeds and infection.

Immunization

- Immunize baby according to the national immunization schedule

7 PHYSICAL AND EMOTIONAL SUPPORT

For KMC to be successful, mothers, family members and staff have to be convinced about using this method. A mother/guardian who is using KMC needs the following support:

7.1 Support from Health Staff (facility and community based)

- Explain the concept of KMC to the mother and demonstrate how it is done
- Explain the benefits of KMC
- Integrate family members like father, grandmother, aunts, or other person, depending on the cultural set up
- Help the mothers with any problems related to positioning, feeding and care of the newborn
- Discuss daily with the mothers about any problems they may have and consistently encourage them to continue KMC
- Encourage mothers and family members to express concerns and ask questions
- Provide health education messages, and raise awareness to sensitize families and communities about KMC, to promote behaviour change and create demand for KMC as a norm for LBW babies
- Facilitate the identification of role models (modeling) of KMC in the community to minimize ridicule and stigma
- Provide consistent physical and emotional support

7.2 Support from Family Members

Encourage family members to do the following:

- Provide support both at home and whilst in the KMC Unit
- Take the baby from time to time in Kangaroo Position to allow the mother to relax
- Support the mother to continue KMC at home
- Provide consistent physical and emotional support

8 CRITERIA FOR DISCHARGE FROM KMC UNIT

Consider discharge from facility if:

- Continuous weight gain established – 10g/daily in 3 consecutive days
- Baby has at least regained birth weight and has a minimum weight of 1500g.
- Both baby and mother tolerate Kangaroo position
- Baby's condition is stable
- Baby's temperature is stable
- Baby has no other existing illnesses
- Mother is capable of breast feeding and expressing breast milk
- Mother accepts the method, is willing to continue with KMC at home, and has support from the family

9 GUIDELINES FOR FOLLOW UP AFTER DISCHARGE FROM KMC UNIT

Follow up schedule:

- A baby, whose weight is less than 1800g, is followed up at the nearest health facility/KMC Unit every week until the baby reaches 1800g
- Once 1800g is attained, subsequent follow-up is done at the nearest health facility/KMC Unit every 2 weeks until the baby is 2500g

Care during a follow up visit

- Weigh the baby

- Obtain history from mother/guardian to establish
  - ✓ If she is continuing KMC at home
  - ✓ Duration of skin-to-skin contact
  - ✓ How she is positioning the baby (KMC position)
  - ✓ If any fever or low temperatures and how she managed it
  - ✓ How the baby is feeding
  - ✓ Whether the baby is showing signs of intolerance (baby too active and uncomfortable in KMC position)
  - ✓ Whether there are any neonatal danger signs
- Perform a physical assessment of the baby
- Continue educating the mother on neonatal danger signs
- Discuss the experiences and the problems the mother has concerning continuing KMC and give support
- Encourage mother and family to continue KMC as much as possible
- Schedule the next visit
- Thank mother/guardian for coming

10 CRITERIA FOR RE-ADMISSION

Readmit baby to hospital if

- Gained less than 10g/day at two consecutive follow up visits
- Lost weight
- Sick – have danger signs
- Mother is not continuing KMC as required and baby is less than 1800g

11 CRITERIA FOR DISCONTINUING KMC

Discontinue baby from KMC when:

- Baby reaches weight of 2500g
- Mother has no desire to continue KMC
- Mother is sick or unable to provide KMC
- Baby is sick
- Baby does not tolerate KMC (becomes very active and is uncomfortable in KMC position)

APPENDIX III

Table 1: Amount of milk (or fluid) needed per Kg/day and age (days)

Birth weight	Feed every	Day 1	Day 2	Day 3	Day 4	Day 5	Days 6-13	Day 14
1000-1499g	2 hours	60ml/kg	80ml/kg	90ml/kg	100ml/kg	110ml/kg	120-180 ml/kg	180-200 ml/kg
≥1500g	3 hours							

Table 2: Approximate amount of breast milk needed per feed by birth weight and age (days)

Birth Weight	Number of feeds	Day 1	Day 2	Day 3	Day 4	Day 5	Days 6-13	Day 14
1000g	12	5ml	7ml	8ml	9ml	10ml	11-16ml	17ml
1250g	12	6ml	8ml	9ml	11ml	12ml	14-19ml	21ml
1500g	8	12ml	15ml	17ml	19ml	21ml	23-33ml	35ml
1750g	8	14ml	18ml	20ml	22ml	24ml	26-42ml	45ml
2000g	8	15ml	20ml	23ml	25ml	28ml	30-45ml	50ml

Source: ***Kangaroo Mother Care – A Practical Guide, WHO***

Note:
For mothers who are HIV positive, provide feeding options according to the Infant and Young Child Nutrition Policy and Guidelines

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APPENDIX IV

SUGGESTED TWO-DAY TRAINING CURRICULUM FOR KANGAROO MOTHER CARE

Target audience: Clinical staff from hospitals and health centres

DAY 1

TIME / MIN	THEME	OUTCOMES (What participants should demonstrate)	CONTENT	TEACHING METHODS/ ACTIVITIES	MATERIALS NEEDED
10	Introduction		• Welcome • Housekeeping rules		
20	KMC pre test	• Knowledge of KMC before training	• Test • Participants each get a number	• Anonymous completion of test	• Pre test questionnaires OR • Powerpoint slides
60	What is KMC?	• Understanding the concept of KMC • Knowledge of the components of KMC • Knowledge and understanding of the benefits of KMC	• Introduction • History of KMC • Definition of KMC • Why call it KMC • Components of KMC • Benefits of KMC (to baby, mother and facility)	• Powerpoint slides (history) • Brainstorm and discussion of definition, components and benefits	• Poster • Slides • Flipchart
15	**BREAK**				
60	Basics of KMC	• Understanding how to practice the kangaroo mother care method • Understanding the importance of different support structures • Producing criteria for intermittent and continuous KMC • Demonstrating how to secure a baby in the KMC position	Practical aspects of KMC: • Different types of KMC • Physical, emotional & educational support needed from hospital staff • Support of family members & health workers during & after discharge • Secure the baby in the KMC position	• Video • Demonstration (securing baby) • Brainstorm (criteria for intermittent & continuous KMC)	• Video • Slides • Wraps (chitenjes & tharis) • Handouts

TIME / MIN	THEME	OUTCOMES (What participants should demonstrate)	CONTENT	TEACHING METHODS/ ACTIVITIES	MATERIALS NEEDED
40	Feeding practices	• Understanding correct feeding practices in KMC • Identifying wrong feeding practices • Knowledge of how to support mothers with the feeding of their babies	• Practical aspects of feeding premature infants: - Expressing breast milk - Feeding techniques (nasogastric tube, cup, direct breastfeeding) • Growth monitoring of LBW babies	• Brainstorm • Discussion • Demonstration (correct and wrong feeding practices)	• Slides • Handouts
30	KMC practice in Malawi	• Being familiar with KMC in Malawi	• Reports by workers in existing KMC units OR • Visit to a KMC unit if training venue is near to such a unit	• Reporting • Demonstration	• Slides • Video • Posters
60	**LUNCH**				
40	Danger signs, discharge criteria and follow-up	• Knowledge of danger signs • Understanding the practice of KMC as part of the continuum of neonatal care • Understanding discharge criteria • Design of a sustainable follow-up programme	• LBW aspects to consider • Hypothermia prevention Danger signs • Review of criteria for Intermittent and continuous KMC • Discharge criteria • Follow up • Transportation	• Brainstorm • Small group discussion	• Flipcharts • Handouts • Slides
30	Introduction to the KMC action kit	• Being familiar with the content of the KMC action kit • Knowledge of the purpose of the different items in the action kit	• Get acquainted with the action kit • Explain the content of the box and what preparation is necessary for the following day	• Hands-on handling of the materials in the action kit • Explanation	• One KMC action kit for each health facility
15	**BREAK**				
50	Designing educational programmes	• Designing tailor-made educational programmes for different cadres of health care workers for individual health care facilities	• Production of an educational programme for each health care facility • Peer review of programmes	• Brainstorming in small groups per health care facility • Comments and discussion (peer review)	• Flipcharts • Post-it notes

TIME / MIN	THEME	OUTCOMES (What participants should demonstrate)	CONTENT	TEACHING METHODS/ ACTIVITIES	MATERIALS NEEDED
5	Closure		• Housekeeping • Reminder of evening preparation for next day		
TOTAL TIME: 435 minutes					
Evening		• Reading	• Basics of KMC	• Reading	• Specific materials in the action kit

DAY 2

TIME/ MIN	THEME	OUTCOMES (What participants should demonstrate)	CONTENT	TEACHING METHODS/ ACTIVITIES	MATERIALS NEEDED
5	Introduction		Housekeeping		
30	KMC post test	• Knowledge of KMC after training	•Post test •Discussion of the correct answers •Participants use the same number as before •A comparison of the pre and post test results used as part of evaluation of training	• Anonymous completion of test	• Post test questionnaire
60	Documentation in KMC	• Demonstrating ability to complete and use different types of documentation	•Documentation •Job aids •Protocols and Guidelines •KMC Register	• Case study examples • Brainstorm and complete documentation • Use job aids	• Case study handouts, documentation, • Roll play – drawing up of guidelines, job aids
15	**BREAK**				
60	Where do I fit in?	• Understanding the roles the different cadres of health workers should play in the implementation of KMC • Written role descriptions for each cadre of health worker	•Roles of different cadres of health care workers in KMC, from antenatal care to follow-up	• Brainstorm • Small group discussion • Sharing of outcomes • Case studies	• Diagram on role-players • Flipcharts

TIME/ MIN	THEME	OUTCOMES (What participants should demonstrate)	CONTENT	TEACHING METHODS/ ACTIVITIES	MATERIALS NEEDED
60	Plans of action	• SWOT analyses for individual facilities • Written plan of action for each facility	•Each facility develops a plan of action for KMC implementation	• Brainstorm • Small group discussion	• Diagram KMC models • SWOT analysis template • Plan of action template • Flipcharts or transparencies
45	**LUNCH**				
30	Presentation of plans of action	• Sharing of plans • Identifying potential pitfalls	•Presentation of plans of action	•Reporting	• Flipcharts or transparencies
60	Evaluation and closure	• Identifying the strengths and weaknesses of the training • Identifying issues to address as part of the way forward	•Evaluation form •Verbal feedback from participants •Outstanding issues and general aspects related to the way forward	• Completion of evaluation forms • Discussion	• Anonymous evaluation form
TOTAL TIME: 365 minutes					

Annex 6

MaiMwana Data Safety Monitoring Board (DSMB) Meeting
7th and 8th June 2007
Lilongwe and Mchinji, Malawi
Final Report 29.07.07

DSMB members present:

Dr Patricia Hamilton, President Royal College of Paediatrics and Child Health UK Consultant Neonatologist St George's Hospital London UK (Chair)

Dr. Agnes Mary Chimbiri, Assistant Resident Representative & Leader of MDG Cluster, UNDP MALAWI, Lilongwe, Malawi

Dr Tobias Chirwa, Senior Lecturer in Statistics, University of Malawi, Mathematical Sciences Department, Chancellor College, Zomba, Malawi

Dr Sue Makin, Obstetrician/Gynaecologist, Mulanje Mission Hospital, Mulanje, Malawi

Dr Dorothy Namate, Director of Health and Technical Services**,** Ministry of Health, Lilongwe, Malawi

1. Process of the meeting

(a) The members of the DSMB first attended open meetings with the project leaders, steering group and members of the implementation team. In these open meetings, at Capital Hotel, Lilongwe and MaiMwana project site, Mchinji, various presentations of the project were made.

(b) This was followed by a closed meeting to which Prof Anthony Costello, Dr Charles Mwansambo and Sonia Lewyka from the project steering group were invited to provide information as required. As no data beyond baseline data and details of aggregate recruitment data were disclosed at this meeting, it was felt appropriate that they could be present for the duration.

(c) A further open meeting at which the chair reported back to the whole team on the summary of the DSMB's discussions and recommendations followed the closed meeting.

The DSMB members had been provided with a project protocol prior to arriving to the MaiMwana project site in Mchinji, Malawi and an update on the implementation of the two arms to the project and relevant baseline data were received on arrival.

2. Proceedings of the Open Meetings

The first open meeting, on 7th June, consisted of presentations on background (Professor Anthony Costello) and overview (Dr Charles Mwansambo) of the MaiMwana project. There was opportunity for discussion and questions. The members of the DSMB were able to get to know each other.

On June 8th, the project team and the DSMB members went to Mchinji, which gave the Board an opportunity to see where the project is taking place and to visit the project office.

It is worth noting that there was a power cut from 9am-4pm and whilst presentations were eventually made under the power from a generator this demonstrates the difficulties under which the team is working.

The second open meeting enabled the DSMB to hear presentations on the clusters, the population and recruitment, the interventions and progress with data collection. The quality and detail of the presentations was very high and the DSMB appreciated the considerable work and preparation that had gone into them. There was sufficient time made available for questions and discussion.

3. Proceedings of the Closed Meeting

The closed meeting took place in the afternoon of 8th June. The Chair set out the aims of the meeting which were to discuss:

- The suitability of the protocol in achieving the aims of the project
- The appropriateness of the data being collected and the likelihood of meeting the required sample size
- The rate and method of recruitment to the project
- Any modifications to be suggested
- Safety issues and the need or otherwise for an interim report and further DSMB meeting
- Any issues relating to ethics, consent and confidentiality.

4. The Protocol

The differences between the enrolment, intervention and evaluation phases of the project were clarified to the Board by the team and the relevant time scales were discussed. The DSMB agreed that it was appropriate to start the infant counseling phase earlier than the women's group intervention phase. Enrolment started in January 2005. It was agreed that the women's group intervention should be considered as starting in July 2005 and it seemed appropriate to delay the evaluation phase until 9 months after the start of the intervention in order to exclude women who delivered before the intervention could take effect. The evaluation phase would thus commence in February 2006 and continue until February 2008.

There was discussion about enrolling women who moved into the village having not been part of the study as well as women who had come from another cluster.

The DSMB recognised that the team had done their best to ensure buffer zones around the villages and to minimise cross contamination. The DSMB felt however that this could not be eliminated altogether and the project team should be aware of this. It was also felt that the proximity or otherwise of healthcare facilities could be a confounding factor – particularly as some clusters had, by random allocation, ended up together in one part of the region. The team agreed to add this information to the cluster maps.

5. Data issues

DSMB recommended more detail be added to the protocol on data management and quality control of the data. It was felt that there should be more random checking of those collecting the data by the supervisors plus also checks on the supervisors themselves. We were reassured that all data collectors

and data entry staff had been trained carefully and the various data sheets had been piloted. It was still felt that ongoing data quality assurance was needed.

It was recommended that in addition to an "intention to treat" analysis there should be a "per protocol" analysis (i.e. an analysis based on individuals who complied with the protocol) particularly as there is felt to be likely migration of women across the district. It was noted that the unique identifier number would help to identify women enrolled in the project who then moved.

Analysis of the baseline data reassured the Board that recruitment was proceeding as planned with the aim of achieving 12000 deliveries looking very likely. The initial data suggest that the groups are comparable.

However a major concern was identified in that the aggregate neonatal and maternal mortality rates appeared to be significantly lower than had been anticipated based on previously available data. Whilst this is a welcome change it impacts adversely on the power of the study to detect the 30% change currently projected.

The DSMB felt that 30% had always been ambitious, though based on the result achieved in a similar study in Nepal. There was discussion as to whether it would be appropriate to reconsider the aimed difference or to increase the target recruitment. The former would need to remain large enough to be clinically important and the latter would probably mean extending the duration of the trial.

It was noted that the numbers of deaths were very small as yet – although the team are sure that they have not missed any significant number of deaths. It was suggested that the DSMB statistician and the team might look at aggregate data at a later date to see if this trend persists. This is complicated by the fact that the meeting was being held relatively late in the progress of the project so that an early effect of the intervention might be taking place. The DSMB however saw no reason to have any additional interim analysis of the data (see below).

It was noted that some category data would be more appropriately given as median and range rather than mean and standard error – particularly as the age range taken was unlikely to be normally distributed.

6. Process and recruitment

The DSMB were assured and agreed that the protocol was being followed.

7. Modifications

The DSMB had significant concerns about the HIV surveillance included in the study. It argued that this was not a specific aim of the project and was causing a lot of difficulty. Firstly, the DSMB was concerned that truly informed consent was not being taken. Whilst the Board felt that the mothers were being told that HIV was being tested for, they were also being told that they would be informed if there something serious was found. This, in fact, was not the case as HIV results were anonymised. The Board was not assured that the mothers were aware that "no news" did not necessarily mean that they were HIV negative.

In addition the necessity to send samples to the UK would be very expensive and, in the DSMB's view, not an appropriate use of money unless this part of the project is reconsidered and redesigned. It was the view of the DSMB that the project steering group should seriously reconsider this part of the project and discuss the following options:

- Continue but with revised counseling for mothers and assured funding for the samples
- Continue as a limited pilot in some clusters.
- Rethink this as a separate project and plan to continue with the same babies at a later date when revised and funded
- Discontinue the HIV surveillance

The DSMB considered it ethically unsatisfactory to continue with limited counseling and insufficient funds to analyse the sample that are being collected.

Minor other points were raised:
Discontinue asking mothers about their and their partners past sexual history.
Consider measuring mother's height as this impacts on birth weight of baby

8. Interim analysis

It was noted that as neither interim analysis nor stopping rules had been written into the protocol there was no mandatory guidance but it was nevertheless discussed.

The purpose of an interim analysis would be:

1) To exclude disadvantage or potential harm of the intervention to the study group

The DSMB did not consider that the intervention could cause harm even if it eventually proved to be of no benefit. The impact on relationships with the men of the village were discussed and although some mothers had been discouraged from attending by their husbands it was felt that on the whole this was not a significant problem

2) To exclude disadvantage or potential harm to the control group

Although there might eventually be more deaths in the control group if the hypothesis were to be upheld the DSMB felt that there was more danger of the trial being inconclusive and not achieving its ends if stopped early.

The only "interim" analysis that was recommended was the inspection of aggregate data in May 2008 to see if the power of the study needed to be increased by further recruitment. Such an analysis would also provide a check on data quality. It was recommended that such analyses be done before the proposed DSMB meeting in 2008.

9. Ethics

These have been discussed above.

10. Summing up

At the final open meeting the chair of the DSMB summed up the above discussions.

The chair extended the congratulations of the DSMB on the considerable achievement of the team in setting up a project of this size and complexity and of making it work. She said that the presentations

had all been excellent and the work that had gone into these was much appreciated by the Board. The DSMB had seen and heard evidence that the study was being carried out properly and effectively.

The DSMB feel that this is an extremely important study and it was essential to try to ensure that it reached its conclusion with the ability to make recommendations.
Should the outcome be that the aims have been achieved through the interventions, the DSMB feel that it is essential that steps are taken to ensure that the interventions are sustainable and whilst locally owned and implemented that there is external support for this, This will entail building capacity into the system to ensure training and re-accreditation of training and evaluation can continue to maximize the huge potential of the project.

11. Summary of Main Recommendations

The project team should indicate how migration patterns of respondents will be monitored and considered and be aware of the proximity or otherwise of healthcare facilities which could be a confounding factor.

More detail should be added to the protocol on data management and quality assurance.

In addition to an "intention to treat" analysis there should be a "per protocol" analysis.

There should be an inspection of aggregate data in May 2008 to see if the power of the study needed to be increased by further recruitment.

Serious consideration should be given to revision of the protocol to remove the HIV surveillance component.

Annex 7

SC/Malawi Newborn Health Research Manager CV-Edward Chigwedere

PERSONAL DETAILS

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EDUCATION

Masters Degree in Population Studies (University of Zimbabwe, 2000-2002)
Masters Degree in Public Health, University of Malawi, College of Medicine (2006-2007)
BSc (Hon) Social Work (University of Zimbabwe, 1997-1999)
Diploma in Social Work (University of Zimbabwe, 1994-1996)
GCE 'O' Levels Cambridge Examinations 1990
Advanced Level Cambridge Examinations 1992

Scholarships

National Institute of Health (NIH) Fogarty International Research Ethics Training Grant (2005-2006)
American Society for Bioethics and Health, Early Career Scholarship (2005)

CAREER SUMMARY

Principle investigator of studies on knowledge, attitudes, and practice of AIDS patients on antiretroviral therapy and equity in accessing antiretroviral therapy; research fellow with universities of Zimbabwe - Clinical Research Center, Michigan State University (USA), University of Malawi College of Medicine; former manager of collaborative HIV/AIDS studies between the University of Zimbabwe Clinical Research Center and Medical Research Council, Clinical Trials Unit, United Kingdom; field coordinator of a mother-to-child HIV/AIDS pilot project; former project officer on a workplace HIV/ADS prevention project.

A confident, self driven leader and team player with a demography, public health and social work background.

WORK EXPERIENCE

Research Fellow, Malawi College of Medicine, Community Medicine Department, Bioethics Unit-January 2006 to date

-Assist in the under 5 nutrition survey in Chapola village, Mangochi
- Assess the water and sanitation situation in Chantulo village, Mangochi
-Develop the Bangwe Home based care baseline survey and oversee its implementation
-Undertake a pilot survey on justice to accessing antiretroviral therapy in Lilongwe district
-Advise in the proposal drafting and conduct of research activities in the unit

Visiting Scholar/Research Fellow, Michigan State University (USA), Center for Ethics and Humanities in the Life Sciences-August 2005 – December 2005
Made presentations on numerous topics on the HIV/AIDS situation and research in Africa. Assisted in the shaping of the Fogarty Bioethics training program. Co-authored a paper on ethical issues on HIV/AIDS treatment in resource limited countries published in the Brazilian journal of infectious diseases. Submitted an abstract on justice in access to AIDS treatment in Malawi and Zimbabwe which was accepted and presented at the International Sociology Association conference in Durban in June2006.

Principle Investigator, Development of Antiretroviral Therapy in Africa, Knowledge, Attitudes & Practice (DART - KAP) Sub-Study, University of Zimbabwe, Clinical Research Center-From May 2005

-Proposal drafting
-Development of study instruments
-Directing of study activities
-Analysis of data and presentation of results

Clinical Trials Manager, University of Zimbabwe (UZ) Clinical Research Center, Development of ART Project-February 2003-July 2005

-Lead programs and organizational strategic development
-Develop and implement operation plans
-Coordination, monitoring and evaluation of projects
-Develop quality control measures
-Management of data and research activities
-Writing and presentation of reports
-Identifying areas of social science research and developing study protocols
-Coordinate PLWHA's support group activities
-Assist organizations/companies wishing to initiate antiretroviral therapy programs with implementation, monitoring and evaluation plans.
-Pursue networks and partnerships and collaborations with organizations involved in HIV/AIDS work.

Field Coordinator, UZ-University of California San Francisco (UCSF) Mother-to-Child HIV Prevention &Diaphragm Acceptability Studies-November 2002-January 2003

-Coordinate field activities with relevant partners
-Preparing clinical trial sites
-Monitoring and evaluation of research activities
-Developing quality control programs for data collection and lab testing
-Provide routine updates to Principal Investigators
-Data analysis and presentation of reports

Research Assistant, UZ-UCSF (HIV/AIDS Prevention Beer Hall Project)-August 2000-October 2002

-Training and supervising interviewers and outreach staff.
-Assist in establishing infrastructure needed for training and project operations.
-Organizing and facilitating sensitization workshops
-Assist in performance appraisal of study team
-Designing of study instruments

-Testing of study instruments
-Disseminating HIV/AIDS information
-Analysis of data

Project Officer, Zimbabwe AIDS Prevention Project, Workplace HIV/AIDS Prevention Program-April-June 2000

-Coordination of surveys
-Provide technical assistance and training to organizations implementing HIV/AIDS prevention at the workplace programs
-Liaise with government ministries and other organizations working on HIV/AIDS prevention and care at the work place
-Organize workshops/meetings
-Prepare project reports

Research Assistant, Save the Children (UK)

-Organizing workshops
-Assist in the identification of orphaned and vulnerable children
-Data gathering
-Interviewing key informants
-Undertaking focus group discussions
-Data analysis

Assistant Project Officer, Norwegian People's AID

-Undertaking project feasibility studies
-Conduct capacity assessment of partners
-Assist in capacity building of partners
-Monitoring and evaluating projects
-Review programs and budgets from partners

Other Activities/Consultancies Participated In On Short Term Basis

1. Equity in access to ART in Malawi
2. Nutrition status assessment for under 5 children in Chapola Village, Malawi
3. Psycho-social support training of OVC care givers in Rusitu, Rusape, Chimanimani, Zimbabwe.
4. Mid term evaluation of SIDA funded HIV/AIDS programs in Zimbabwe
5. Development of effective antiretroviral adherence programs for PLWHA on ARVs for the University of Zimbabwe Clinical Research Center.
6. Presentation on challenges in rolling out antiretroviral drugs at the University of Zimbabwe Clinical Research Center.
7. Diaphragm acceptability study, University of Zimbabwe
8. Condom use survey in Chivi district for Population Services Zimbabwe
9. Assessment of people seeking VCT for PSI, Zimbabwe
10. Young Adults Survey for ZNFPC
11. Alcohol and risky sexual behavior study with UZ Dept Of Community Medicine

PUBLISHED ARTICLES AND PAPERS

- **E. Chigwedere** (2006) *How much are we reporting about ethical misconduct.* Medical Humanities Journal Volume 27 No 2.
- P. Ndebele, **E. Chigwedere** (2005) *Ethical Issues Related to Access to Treatment for HIV/AIDS in Low-Resource Countries.* Brazilian Journal of Sexually Transmitted Diseases.
- **E. Chigwedere** (2005)**.** *Meeting unlimited health care needs with limited resources: Justice and HIV/AIDS treatment in Malawi and Zimbabwe.* Presentation at the ISA Conference in Durban in June 2006.
- Characteristics of people seeking HIV Voluntary Counseling Testing (VCT) in Zimbabwe. (Unpublished).
- Mabvuku/ Tafara Training Centre: Mobilization Study (Unpublished).
- Socio – Economic Problems Experienced by Resettlement Farmers: A Case Study of Shangwe Resettlement Scheme, Makoni District Council (Unpublished)

PROFESSIONAL SKILLS

Computer skills: SPSS, Epi Info, Power Point, MS Access, MS Word, MS Excel and Internet

Other: Project Management, Participatory Respondent Appraisals (PRA), Counseling, Good clinical research practice (GCP)

References:

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Annex 8 Save the Children, Malawi Newborn Health Program Five-Year Work Plan 30 September 2006-30 September 2011

Malawi Newborn Health Program - Five-Year Work Plan (merged and revised) - 1 October 2006 - 30 September 2011

	FY07				FY08				FY09				FY10				FY11						
Activity	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	**Outputs / Bench Mark**	**Responsible Person**	**Funding**
Program Management																							
Activity 1: Recruit and hire staff	X																				All positions filled	PM / DCDP / KZW	CS/SNL
Activity 2: Project start-up activities	X																				Start-up activities documented	PM / DCDP / KZW	CS/SNL
Operational Research																							
Community-based maternal and newborn care																							
Activity 1: Finalize proposal and budget with MOH, UNICEF and 3 districts for community PNC pilot				X																	PNC pilot proposal finalized	PM/MEM	SNL
Activity 2 : Finalize tool and conduct Health Facility Assessment				X	X																HFA report	MEM/MEO	SNL/CS
Activity 3: Collaborate with partners to design, conduct and analyze population-based survey in 3 learning districts				X																	KPC report	MEM/MEO	SNL
Activity 4: Design sepsis management protocol				X	X																Sepsis protocol documented	MEM/MEO	SNL
Activity 5: Finalize design of district pilot (sepsis to come later)				X	X																Design developed	MEM/MEO	SNL

Activity 6: Contribute to adaptation of MNH training package for HSAs in collaboration with UNICEF and MOH (timing to be confirmed with UNICEF)				X	X																HSAs MNH training package adapted	PM/PO/ MEO	SNL/CS
Activity 6B: TOT for HSA training package (with UNICEF)					X																Report of TOT	PM/UNICEF	SNL/CS
Activity 7: Assist with development of OR plans and postnatal care protocols on ANC and PNC home visitation, community management of LBW babies, and newborn sepsis			X	X	X	X															OR Plans & Protocols in place	SNL2 match activity	CS
Activity 8: With RHU and districts and other key stakeholders, establish and support system for ongoing training/ capacity assessment (pre-post tests, training evaluations, trainer assessment checklists for facility health workers and HSAs.			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Monitoring system documented	PM/M&E	SNL
Activity 9: Facilitate/support development of job aides (visit checklists, counseling cards) and supportive supervision at facility and community levels					X	X															Supervision tools in place	SNL2 match activity	CS
Activity 10: Support development of IEC/BCC strategies and materials for HSAs					X																IEC/BCC strategies developed	PM/PO	CS

community mobilization work with communities				X		X	X																
Activity 11: Support (TA/financing) costing study for community MNH package				X	X																Costing report	DCDP/PM/ MEM	SNL
Activity 12: Conduct quarterly joint monitoring/TA support visits to each learning program district				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Monitoring and supervision reports	SNL2 match activity	CS
Activity 13: Facilitate and participate in partner monthly and quarterly task force meetings for 3 learning program districts		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Meeting reports	PM/MEM/M EO	SNL
Activity 14: Facilitate and participate in periodic (annual) program reviews and broader information sharing at country level with stakeholders														X				X			Reports of the reviews	DCDP/PM/ MEM	SNL/CS
Activity 15: Assist in the final revision of community PNC protocols based on learning								X													PNC protocols developed	PM	SNL/CS
Activity 16: Facilitate continuous learning and scale-up in other districts through ACCESS, UNICEF, and other interested organizations and donors through meetings and information/resource sharing							X	X	X	X	X	X	X	X	X	X	X	X	X	X	Meeting reports	DCDP/PM/ MEM	CS

Mai Mwana Randomized Controlled Trial

Activity 17: Conduct quarterly monitoring of progress on Mai Mwana subgrant			X	X	X	X	X	X	X	X	X	X									Monitoring reports	DCDP/PM,/ MEM	SNL
Activity 18: Conduct quarterly financial monitoring on compliance of Mai Mwana subgrant			X	X	X	X	X	X	X	X	X	X									Monitoring reports	GM	SNL
Activity 19: Facilitate annual CHAM & MOH visits to Mai Mwana				X				X				X									Visit reports	PM	SNL
Activity 20: Organize/facilitate joint dissemination event																X					Meeting report	TBD with Mai Mwans	SNL
Activity 21: Assist in publication of results																				X		ICH	SNL HQ

Kangaroo Mother Care Retrospective study

Activity 22: Conduct KMC retrospective study and develop recommendations for scale-up related to outcomes, operational tools, and efficiencies for staff, training and infrastructure				X																	Report of KMC retrospective study and recommended plans for scale-up	External consultant/ PM/MEM/PO/MEO	CS
Activity 23: Support development of prototypes to support scale-up (key job aides, wall charts, ward guidelines, monitoring tools, BCC materials)				X																	Prototypes materials developed	PM/MEO	SNL
Activity 24: In collaboration with RHU and ACCESS disseminate retrospective KMC study results to key stakeholders				X	X																Dissemination reports	PM	SNL

Activity 25: Design community KMC strategy and adapt materials					X	X														Strategy developed	PM	CS/ACCESS
Activity 26: Design prototype materials for HSAs to counsel mothers in community KMC					X	X														Prototypes materials developed	PM/ACCESS	CS/ACCESS
Activity 27: Facilitate work planning for district scale-up					X	X														Planning reports	PM	CS
Activity 28: Provide TA for district scale-up and supportive supervision at facility and community level					X	X			X											TA reports and Supervision reports	PM	CS/ACCESS
Activity 29: Participate in annual SNL Africa Research Workshop	X				X				X				X				X			Reports of SNL annual Africa Research Workshop	PM	SNL

Collaboration and Partnership

Activity 1: Road Map launch activities	X																			Road Map launched with SC Participation	PM	CS
Activity 2: PMNCH Malawi country plan		X																		PMNCH Malawi Country Plan disseminated	PM	CS
Activity 3: Global PMNCH Meeting - REMOVED																						
Activity 4 : Define roles, responsibilities between partners				X																Partner roles documented	PM/MEM	SNL
Activity 5: MOU/agreement with MOH/RHU					X															MOU Signed	DCDP/ PM	CS
Activity 6: MOU/agreement with WRASM-Mw				X																MOU Signed	DCDP/ PM	CS

Activity 7: MOU/agreement with UNICEF, MOH, 3 districts (community-based) neonatal care pilot				X																	MOU Signed	DCDP/ PM	CS
Activity 8: Sub-grant agreement with Ekwendeni (*agogo* approach)				X																	Sub-grant agreement signed	DCDP/PM	CS
Activity 9: Participate actively in Maternal and Newborn Sub-committee of RHU Sexual and Reproductive Health Committee	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Minutes and meeting	PM	CS
Activity 10: Advocate for revised indicators and targets in HIS supportive of newborn health priorities				)																		PM/MEO	CS
Activity 11: Participate in joint planning with MOH, ACCESS and other key stakeholders on MNC care pre and in-service education			X	X																	Planning documents, joint work plan	PM/DCDP	CS
Activity 12: Assess status of pre-service ENC/KMC in partnership with ACCESS				X																	Report on the status	PM	CS
Activity 13: Advocate with RHU for revision of postnatal visitation schedule in RH Guidelines currently being finalized				X																	Postnatal visitation revised	PM	CS
Activity 14: Support set-up of system for training assessments and supervision (pre-post tests, training				X	X	X															Monitoring system documented	PM/MEO	CS

evaluations, assessment checklists and supervision checklist for both trainers and trainees)																							
Activity 15: Facilitate/support development of job aides, supportive supervision at national level				X	X	X															Job aides developed	PM/MEO	CS
Activity 16: Review/revise health education/BCC materials for use by facility and community HWs (counseling cards, posters, black and white brochures)				X	X	X	X	X	X	X	X	X									BCC materials revised	PM/PO	CS
Activity 17: Attend quarterly meetings to review progress and develop action plans						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Meeting reports	PM/M&E	CS
Activity 18: Develop H/MIS and indicators (process and quality emphasis) and support district implementation				X	X																Process indicators documented	EC/GC	
Activity 19: Participate with all partners in the development of RHU annual work plan		X				X				X				X				X					
Activity 20: Assist RHU with providing support for annual District Implementation Plan (DIP) by facilitating dev't of a schedule of DIPs for all the districts and ensure there is representation at all times for MNC				X				X				X				X					Schedule developed annually	PM	CS

Activity 21: Participate in DIP development meetings for 7 MOH districts (3 pilot districts, 3 ACCESS districts, and Mzimba)					X				X				X				X				District and implementation plans reflect increased attention to newborn care	PO	CS
Activity 22: Work with partners to monitor and ensure adequate equip/ supplies at facility level through DIPs and other donor resources					X				X				X				X						
Activity 23: Participate in quarterly meetings at national level on MNC, i.e. Health Foundation, Perinatal Care, Women and Children First	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Meeting reports	PM/PO	CS
Activity 24: Attend partnership meetings on MNCH			X		X				X				X				X				Meeting reports	PM	CS
Activity 25: Attend monthly White Ribbon Alliance meetings	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Meeting reports	PM	CS
Activity 26: In collaboration with MOH and other key stakeholders provide TA/support monitoring visits for scale-up of community-based maternal and newborn care package					X			X			X			X			X			X	Monitoring visit reports	PM/PO	CS
Activity 27: DIP data review and DIP writing		X																			DIP document submitted to CSHGP	NBH Team / KZW/ La Rue	CS
Activity 28: Develop plan of process documentation for MOH/RM partnership				X																	Plan for process documentation included in First Year Annual Report and subsequent work plans	PM, La Rue	CS

Activity 29: Participate in annual SNL Program Manager meetings		X				X				X				X				X			Reports of SNL annual Program Manager meetings	PM	SNL
Activity 30: Participate in SNL newborn health scale-up meeting		X																			Report of SNL newborn health scale-up meeting; Malawi scale-up plan	PM	SNL

Policy, Advocacy, Networking

Activity 1: Policy review and dialogue with RHU																						DCDP/PM	CS
Activity 2: Advocate for revised postnatal visitation schedule				)																	Policies reviewed (report)	PM	CS
Activity 3: Advocate in partnership with MOH and other stakeholders for effective HSAs recruitment																					Documentation of discussions and advocacy initiatives	PM	CS
Activity 4: Using lessons learned from the 3 OR district advocate for policy review and dialogue on community management of newborn sepsis by HSAs							)			)				)							Policies reviewed (report)	PM /R&MM	CS
Activity 5: Facilitate revitalization of ENC/KMC TOTs Network by conducting a census of TOTs trained during SNL1																					SNL1TOTS identified, contact addresses documented	PM/PO	CS
Activity 6: Facilitate advocacy trng /capacity building for selected MOH, Civil Society organization, CHAM and professional association members					X																Training report	DCDP/PM	CS

Activity 7: Participate in regional & international global meetings for NBH, i.e., PLG and regional exchange visits			X				X				X					X					X			Reports of regional, international & global meetings for NBH	PM	CS
Mainstreamed Training, TA Support to MOH Program Management																								
Activity 1: In collaboration with MOH, ACCESS, WHO, UNFPA, UNICEF consolidate and adapt various packages (Safe Motherhood, Life Saving Skills, BEmONC, SNL and KMC) into one standard competency-based package on Essential Obstetric and Newborn Care				X	X																			Training manual reflects increased attention to newborn care	PM	CS
Activity 2: Using lessons learned from the KMC retrospective assessment provide TA during the harmonization/integration of RHU training manuals				X	X																			KMC module integrated	PM	CS
Activity 3: Facilitate development of a monitoring system for the trainings				X	X																			Monitoring system developed	PM/MEO	CS
Activity 4: Facilitate development of supervision tools during trainings and follow-up sessions				X	X																			Supervision tools developed	PM/MEO	CS
Activity 5: Conduct a refresher course of trainers trained under SNL 1 (about 20 to be																								Training reports	PM/PO	CS

SNL1 (about 30 to be confirmed after census) using the new Essential Obstetric and Newborn Care package																							
Activity 6: Co-fund and provide TA for TOT trainings in Essential Obstetric and Newborn care (60)					X	X															Training reports	PM/PO	CS
Activity 7: Supervise the training sessions to ensure quality					X	X															Supervision report	PM/PO	CS
Activity 8: Follow-up TOT implementation plans								X	X												Monitoring reports	PO/MEO	CS
Activity 9: In collaboration with MOH provide TA during roll-out of Essential Obstetric and Newborn Care trainings at district level throughout the country							X	X	X	X	X	X									TA reports	PO/MEO	CS
Activity 10: Co-fund a training session for 15 tutors from health training institutions for effective pre-service competency based training on Essential Obstetric and Newborn Care							X														Training report	PM/PO	CS
Activity 11: Conduct follow-up of the trained trainer implementation plans									X	X	X										Follow-up visit report	PO/MEO	CS
Activity 12: Provide TA to Mzimba for in-service training of 50 health workers in Essential Obstetric and Newborn Care						X	X	X													Training reports	PO	CS

Activity 13: Facilitate first follow-up of trainees 6 months post training									X	X			X							Follow-up visit report		
Activity 14: Conduct regular joint supportive supervision of trained trainers									X	X			X						X		Supervision reports	PO	CS
Activity 15: Participate in quarterly meetings to review progress of trainings and develop actions plans					X				X	X			X						X		Meeting reports	PO	CS

Monitoring & Evaluation, Operations Research, Reporting and Documentation

Monitoring and evaluation

Activity 1: Prepare and submit quarterly financial reports				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Reports submitted	PM/GM	CS
Activity 2: Prepare and submit annual programmatic reports to CSHGP				X				X				X				X				X	Reports submitted	PM/JR/ KZW	CS
Activity 3: Conduct qualitative assessment for agogo strategy	X																				Report of qualitative assessment (DIP annex)	PM / Jude Aubel (Consultant)	CS
Activity 4: Conduct KPC Survey in Mzimba		X																			Report of KPC survey (DIP annex)	PM/KZW/ LS/MEO	CS
Activity 5: Facilitate HFA in Mzimba district				X	X																HFA conducted (report)	PO / MEO	CS
Activity 6: DIP review at Mini-University			X																		DIP defended	PM/KZW/ LS/FK	CS
Activity 7: Participate in biannual MOH HIS meeting				X		X		X		X		X		X		X		X		X	Road Map targets revised and published	MEM/MEO	CS
Activity 8: Conduct participatory mid-term evaluation											X										Report of participatory MTE	External consultant/ KZW/NBH Team	CS

Activity 9: Conduct endline KPC survey Mzimba District (LQAS)																	X			Report of joint supervision & scale-up	PM/MEM/ MEO	CS
Activity 10: Conduct final evaluation of Malawi Newborn Health Program																		X		Final Evaluation Report submitted	External consultant/ PM/JR/MEM/MEO/ KZW/ES	CS

Planning and Reviews

Activity 1: Participate in biannual SWAp reviews		X		X		X		X		X		X		X		X		X		Reports of SWAp review meetings	PM	CS
Activity 2: Participate in RHU annual work plan review & planning cycle		X				X				X				X				X			RHU Annual Work Plan	PM	CS
Activity 3: Submit detailed annual work plan to CSHGP									X				X				X						CS/SNL

Ekwendeni Sub-grant

Activity 1: Assist Ekwendeni to develop and submit a program description and work plan on *agogo* approach			X	X																Proposal and workplan developed & documented in sub-grant agreement	PM/PO/ MEO/JR	CS
Activity 2: Provide TA for the review and revision of BEHAVE messages				X	X															Revised BEHAVE messages documented	PM/PO	CS
Activity 3: Provide TA during the development of the *agogo* approach training curriculum and other training materials				X	X															Revised training curriculum documented	[M/PO	CS
Activity 4: Assist Ekwendeni develop M&E and documentation plan				X	X															M&E plan and documentation plan documented	PM/MEO/ PO	CS

Activity 5: *S*upply Ekwendeni with BCC materials					X															BCC Materials supplied	PM	CS
Activity 6: Provide TA to provide training to 1000 agogos and refresher training to 3000 agogos					X	X	X													Training reports including results of pre-and post-tests	PM/PO	CS
Activity 7: Conduct monitoring visits to Ekwendeni					X	X	X	X	X	X										Monitoring visits reports	PM/PO/ MEO	CS
Activity 8: Conduct 6 months post-training monitoring of the trained *agogos*							X	X	X	X										6 month post tests documented	PM/PO/ MEO	CS
Activity 9: Provide TA for process documentation and monitoring of the initiative				X	X															TA reports	PM/MEM/ MEO/LS	CS
Activity 10: Provide TA for documentation and packaging of *agogo* approach									X											Agogo approach documented and packaged for dissemination	PM/PO/ MEO/JR	CS
Activity 11: Arrange MOH and CHAM visit to Ekwendeni *agogo* initiative																				Visit report	PM/PO	
Activity 12: Print package for dissemination									X											Package printed	PM/PO	CS
Activity 13: Support dissemination of experience and manual to stakeholders									X											Dissemination workshop report	PM/PO/ MEO	CS
Activity 14: Provide TA for scale-up by interested stakeholders (faith based groups, local organizations, CBO)																				TA reports	PM/PO	CS

Activity 15: Conduct FE of Ekwendeni *agogo* initiative (as part of NBHP particip. MTE)										X									Ekwendeni sub-grant evaluated and included in report of participatory MTE	PM/PO/ MEO	CS