



Lufwanyama Integrated Neonatal and Child Health Project in Zambia (LINCHPIN) Mid-Term Evaluation Report

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Acronyms

ACT	Artemisinin Combination Therapy
ANC	Antenatal Care
BU	Boston University
CAC	Community Action Cycle
CBD	Community-based Distributors
CCM	Community Case Management
CDD	Control of Diarrheal Diseases
CHAZ	Christian Health Association of Zambia
CHW	Community Health Worker
CM	Community Mobilizer
CSHGP	Child Survival and Health Grant Program (USAID)
DHMT	District Health Management Team
DHO	District Health Office
DIP	Detailed Implementation Plan
EHT	Environmental Health Technician
ENC	Essential Newborn Care
FP	Family Planning
HBB	Helping Babies Breathe
HC	Health Center
HCP	Health Communication Project
HW	Health Worker
iCCM	Integrated Community Case Management
IMCI	Integrated Management of Childhood Illness
IMNCI	Integrated Management of Newborn and Child Illnesses
IR	Intermediate Result
JICA	Japan International Cooperation Agency
KPC	Knowledge, Practices and Coverage
LBW	Low Birth Weight
LINCHPIN	Lufwanyama Integrated Newborn and Child Health Project in Zambia
LUNESP	Lufwanyama Neonatal Survival Project (of Boston University)
MCDMCH	Ministry of Community Development and Maternal and Child Health
MCH	Maternal and Child Health
MNC	Maternal and Newborn Care
MNCH	Maternal, Newborn, and Child Health
MOH	Ministry of Health
MTE	Mid-term Evaluation
MUAC	Mid-upper Arm Circumference
NGO	Non-governmental Organization
NHC	Neighborhood Health Committee
OR	Operations Research
ORS	Oral Rehydration Solution
PCM	Pneumonia Case Management
PNC	Postnatal Care
RDT	Rapid Diagnostic Tests

SIDA	Swedish Development Agency
SMAG	Safe Motherhood Action Group
SMGL	Saving Mothers Giving Lives
TBA	Traditional Birth Attendant
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WRA	Women of Reproductive Age
ZISSP	Zambia Integrated Systems Strengthening Project (Abt Associates – USAID/Zambia bi-lateral project)

A. PRELIMINARY INFORMATION/EXECUTIVE SUMMARY

The Lufwanyama Integrated Newborn and Child Health Project in Zambia (LINCHPIN) is a Five-year Innovation Project (CS-25 cycle) running between 1 October 2009-30 September 2014. The project is co-funded by USAID Child Survival and Health Grant Program (CSHGP), with matching funds from the ELMA Foundation, Towers and Perrin, and the Crowne Family Philanthropies. The strategic objective is *increased use of key newborn and child health services and practices*. To reach this objective four intermediate results aim to increase access, availability, quality and demand for newborn and child health care services; and to contribute to an enabled environment to support effective delivery of newborn and child health interventions. All project activities are implemented in Lufwanyama District in the Copperbelt Province of Zambia. Activities are implemented in close collaboration with the District Health Office (DHO) and several local partners. The MTE was conducted between May 22 and June 6, 2012.

The project has four main components: 1) **Integrated community case management (iCCM):** CHWs are trained to assess, classify and treat sick children 2 to 59 months old with malaria, pneumonia and diarrhea – and to refer children and newborns with danger signs; 2) **Community-based maternal and newborn care:** TBAs are trained to make postnatal care (PNC) home visits to mothers and newborns starting at delivery. If the newborn is delivered at home, the TBA provides essential newborn care (ENC), including newborn resuscitation. PNC home visits are then conducted at 24 hours, two, three and seven days and at two, six and eight weeks. Mothers and newborns with danger signs are referred to the health facility; 3) **Teaming of CHWs and TBAs:** CHWs and TBAs are trained to work as teams. Teaming is primarily designed to bridge the gap between care provided at delivery and the early newborn period (usually provided by the TBA) and care in infancy and childhood (usually provided by the CHW). The teaming approach teaches CHWs and TBAs to do joint PNC home visits at two, six, and eight weeks, conduct joint health education and promotion activities, encourages mutual support and problem solving, and helps promote and facilitate referral of sick mothers, newborns and children when necessary. NHC members are trained to support teams; and 4) **Creating an enabled environment for maternal, newborn and child health (MNCH):** Neighborhood Health Committees (NHCs) are trained in community mobilization for MNCH using the Community Action Cycle (CAC) and in CHW/TBA teaming. The intention is to give NHCs and communities skills that will improve long term-capacity to identify and address health-related problems – and to use improved community demand to help drive improvements in quality, access and availability of health services.

Teaming of CHWs and TBAs is an innovative approach that is being tested for the first time in Zambia. For this reason, teaming is the focus of the project innovation research. Operations research on teaming was planned and is being conducted by Boston University.

Principal findings of the MTE include:

1. Integrated CCM has been successfully implemented in the district. All available CHWs have been trained. Data suggest that CHWs are able to assess, classify, treat and refer sick children appropriately, complete community registers, and make monthly visits to health facilities for re-stocking. Continued attention is needed to ensure that supervision includes

observation of practice. CHW coverage remains limited because of CHW attrition, inadequate numbers of CHWs, and un-even distribution. An approach to improving CHW coverage is needed. Stock-outs of essential medicines are a common problem, and the most important barrier to practicing iCCM. Ordering and re-supply practices for essential medicines at several levels need to be improved. A review of reasons for stock-outs is proposed. Simple methods for taking local action should be used as a first step – for example improving skills of facility workers to estimate CHW medicine needs, using register data.

2. Community-based maternal and newborn care has been well accepted in the district. Most available TBAs have been trained. TBAs are generally able to identify pregnancies, deliveries, and newborns in villages, make home visits as required per the PNC schedule, use registers, and refer mothers and newborns for danger signs if necessary. Continued attention is needed to ensure that supervision includes observation of practice. TBA training did not use a community-based MNC package, based on international standards, and this is needed in the next phase. TBAs often lack equipment for newborn resuscitation, although they were trained by Boston University under an earlier project, however, they continue to conduct a high proportion of deliveries in the district, and are trained in ENC. Consideration should be given to supplying TBAs with key resuscitation equipment. TBAs are accepting their “new role” and are increasingly accompanying women to deliver at health facilities.
3. CHW/TBA teaming shows promise as an approach to improve quality and reach of community-based activities. Teams report making joint home visits in the postnatal period, conducting health education sessions for large and small groups, and helping each other facilitate referral of mothers, newborns and children. All key components of operations research on teaming of CHWs and TBAs have been implemented as planned. An unforeseen complication has been that trained NHC members have joined CHW/TBA pairs for home visits – a role that was not initially intended; this will need to be resolved. More data on the 0-2 month age group are needed to evaluate effect of teaming on management of this age-group.
4. Community mobilization activities using NHCs and Safe Motherhood Action Groups (SMAGs) have been well accepted. All trained NHCs have developed action plans for MNCH. Community Mobilizers (CM) deployed in the district have worked well as facilitators for community mobilization. Ongoing support is needed to build capacity to implement local action plans for MNCH.
5. Quality of sick newborn care at first-level facilities remains limited. Facility-based health workers have generally not been trained in management of the sick newborn. Improving the quality of first-level care is critical to improving outcomes for newborns referred by CHWs and TBAs. Training in IMNCI for facility staff is proposed.
6. CHWs, TBAs and NHC members do not yet have counseling cards or flip charts on key MNCH messages that use pictorial images. Messages and materials should be adapted and printed for local use. MOH-endorsed materials from the Health Communication Project (HCP) in Zambia are archived and available.
7. Community registers and forms have been useful for tracking progress. Registers are useful job aids. Several changes are proposed to make registers easier to complete, and to reduce the total number of forms. Modifications in project indicators are also proposed. In the next phase, district staff should be trained to manage community register data; quarterly community register reports are proposed for use by district staff and stakeholders.

Principal recommendations of the evaluation include:

1. Continue ongoing support for iCCM, PNC home visits, teaming and community mobilization through existing mechanisms. Conduct additional planned training for NHCs to meet training coverage targets and continue community mobilization support. Conduct refresher training for CHWs and TBAs. Continue joint supervision and support for data collection and use.
2. Develop an approach to improving CHW coverage. This should include support for district training of additional CHWs using the accredited national six-week course. Selection criteria for CHWs will be important to ensure they are allocated to areas where they are needed and that they are likely to remain in their posts.
3. Review reasons for medicine stock-outs and develop approaches to improving supply. Collaborate with the JSI Deliver project to do a quick review of logistics barriers. Reinforce simple methods for taking local action including teaching facility staff to use community register data to estimate CHW drug needs each month and improving local ordering practices.
4. Develop an approach to improving management of the sick newborn at the first-level facilities. This could include training of first-level staff in IMNCI, and improved clinical supervision. Collaborate with ZISSP to conduct training using ZISSP resources.
5. Improve quality of care provided by TBAs: 1) Adapt WHO/UNICEF/Save the Children community-based MNC guidelines for local use and use these for ongoing TBA refresher training; and 2) Review feasibility of procuring and distributing newborn resuscitation equipment to TBAs in consultation with the DHMT.
6. Update community registers, forms and project indicators, based on field experience. Proposed changes are summarized in Annex 12. In addition, a monthly community register data report, for use by the DHMT and other stakeholders, is proposed.
7. Continue to build district and national capacity. Engage the DHMT to: address problems with CHW coverage and medicine supply; manage and use community register data; document lessons learned; and develop a strategy for handing over project-supported activities to the district. Continue efforts to inform national roll-out of iCCM and development of the community based MNC package; consider use of the district as a learning site for visits by national and other district stakeholders.

Table 1: Summary of Major Project and OR Accomplishments

Project Inputs	Activities	Outputs – Systems (July 2011 – April 2012)	Outputs – Case Management (July 2011 – April 2012)
iCCM Technical support Materials Training CHW bicycles Bag + supplies Vehicles and fuel for site visits	<ul style="list-style-type: none"> • Development and testing of training materials (iCCM, supervision) and of community registers, forms and supervisory checklists • Training of trainers, CHWs and supervisors • Regular supervision with district staff • Compilation and summary of register data • Engagement with district planning 	% of CHWs trained in iCCM: 100% (85/85) % of trained CHWs remaining: 86% (73/85) % of CHWs receiving clinical supervision in last 3 months: 100% (74/74) % of CHWs that have had no stock-outs of essential medicines in the previous month: range – 3% (zinc) – 45% (ACT) District workplan includes iCCM: Yes	% of CHW registered cases of suspected pneumonia treated with amoxicillin: 83% % of CHW registered cases of RDT positive malaria treated by CHWs: 91% % of CHW registered cases of diarrhea treated by CHWs with ORS: 84% % of CHW registered cases of diarrhea treated by CHWs with zinc: 41% % of children referred who complete referral: 81%
Community-based maternal and newborn care Technical support Materials Training TBA bicycles Bag + supplies Vehicles and fuel for site visits	<ul style="list-style-type: none"> • Development of training materials – MNH home visits, ENC, supervision – and of community registers and supervisory checklists • Training of TBAs and supervisors • Regular supervision with district staff • Compilation and summary of register data 	% of TBAs trained in c-MNH: 90% (111/120) % of trained TBAs remaining: 94% (104/111) % of TBAs receiving clinical supervision in last three months: 93% (97/104)	% of TBA registered newborns who receive a PNC contact within 24 hours of delivery: 75% Proportion of deliveries attended by a TBA where the baby was dried and wrapped: 100% Proportion of newborns delivered by a TBA receiving assisted breathing: 8%
Teaming of CHWs and TBAs Technical support	<ul style="list-style-type: none"> • Formative research • Development of training materials 	% of CHW/TBA teams trained: 46/47 (98%) Number of NHCs trained in CM	

Materials Training Vehicles and fuel for site visits	<ul style="list-style-type: none"> • Training of trainers, CHWs, TBAs and NHC members • Development and implementation of operations research – OR follow-up visits 	and teaming: 80/118 (68%) 5/5 OR milestones met	% of TBA registered newborns who are referred for danger signs: 4% (79/1837) % of TBA registered newborns who were delivered at a facility: 35% (652/1837)
Community Mobilization Technical support Five CMs Materials Vehicles and fuel for site visits CM-Motorbikes	<ul style="list-style-type: none"> • Development of community mobilization strategy and training guidelines • Training of trainers, and NHCs/ SMAGS in CM • Training and deployment of five CM • Review of C-action plans 	% of NHCs with action plan completed: 100% (118/118) % of planned SMAGS established and implementing action plans: 88% (23/26)	

B. EVALUATION ASSESSMENT METHODOLOGY AND LIMITATIONS

The MTE of the Lufwanyama Integrated Neonatal and Child Health Project (LINCHPIN) was conducted by a team that included an outside evaluator, Save the Children staff from the Africa region and headquarters, a representative from the Lufwanyama DHO, and LINCHPIN team members. The evaluation was conducted between May 22 and June 6, 2012.

Four principal methods were used for the evaluation: 1) Review of the baseline 30-cluster KPC survey, health facility assessment (HFA), and community register data. 2) Document review – including policy documents, program reports, technical reports, reports of training activities, health worker (HW) registers, and training and health education materials. 3) Field visits – site visits were made to health facilities and communities and in-depth interviews conducted with health facility staff, community health workers (CHWs), Traditional Birth Attendants (TBAs), Neighborhood Health Committee (NHC) members and caregivers of young children. 4) In-depth interviews with provincial and district health officials, and with partners and stakeholders at the national level. All findings were discussed and synthesized by the evaluation group. A final summary of main findings and recommendations was reviewed and discussed with the IMCI Technical Working Group and with a representative of the USAID Mission’s HPN section on June 6, 2012. Following these meetings, evaluation findings and recommendations were further revised and finalized.

Program data, documents and reports were generally available to the evaluation team, and interviews conducted with key stakeholders at all levels. The team attempted to randomly select health facilities and communities in the district. Very remote and less-accessible areas could not be visited in the time available. It is therefore possible that field findings did not reflect conditions in less accessible areas.

Details of the evaluation approach, team members and persons interviewed for the evaluation are presented in Annexes 8, 9 and 10.

C. DATA QUALITY AND USE

Household survey data

A baseline 30 cluster household survey was conducted in early 2010. A proportional sampling method was used to select 465 caregivers of children aged 0-23 months from all nineteen catchment areas in the district. The study instrument was adapted from the RAPID CATCH 2008 questionnaire. Coverage indicators used were consistent with standard international indicators. Data were used to establish targets for key indicators. An endline survey is planned at the end of the project cycle in order to determine progress towards targets. Since coverage of CHWs and TBAs is highly variable in the district, it is possible that some areas are not receiving project interventions. Uneven coverage of project interventions may limit the ability of a district-wide sample to detect changes in key indicators at endline.

Health services assessment

A HFA was conducted in July 2010. A census of all 15 health facilities functioning in the district at that time was conducted. A pre-tested checklist adapted from the RAPID CATCH 2008 instruments was used to assess the capacity of facilities to provide newborn and child health services. The survey was used to identify principal gaps in facility-based services for newborns and children. A follow-up assessment to measure changes in availability and quality of care, using comparable indicators, is proposed. Since the baseline assessment, two additional facilities are operational and should be included in the final assessment.

Community-based register data

Two community-based registers are used for tracking field activities; a TBA register and a CHW register. The TBA register records all newborns born in the TBA catchment area. TBAs record ENC tasks performed (if the TBA attended the delivery), PNC contacts by the TBA (24 hours, two, three, and seven days; and two, six, and eight weeks) and newborns with danger signs referred. The CHW register records all sick children who are seen by the CHW. CHWs record assessment findings, classification made and treatment given, cases referred, referral completed and follow-up of sick children. Registers are brought to the health facility each month. Facility-based health workers aggregate data in a facility aggregation register. Project staff collect aggregated data from each facility each month and process these data in the project office. Data are summarized as graphs and used to track performance. Register data are available for the period July 2011 – April 2012. Completeness of reporting varied between 49% and 91% during the reporting period. Data are reviewed at the health facility level, for completeness and accuracy – and corrections made when possible. Register data are used to track a number of elements of community-based iCCM and MNCH home care.

Representativeness and quality of register data will be affected by: 1) the proportion of all deliveries and sick children registered by TBAs and CHWs in communities; 2) the proportion of TBAs and CHWs reporting each month; and 3) the completeness and accuracy with which registers are filled-in by TBAs and CHWs. These errors may be expected to be more common in the early phases of project implementation – and to become less important over time as CHWs and TBAs become familiar with them, and as more caregivers seek care from CHWs.

Process evaluation data

The project tracks project inputs and outputs in four areas: 1) Materials and guidelines developed; 2) Trainings planned and conducted by category of trainee; 3) Availability and coverage of TBAs, CHWs and TBA/CHW Teams by geographic area and by density of population; and 4) CHW and TBA attrition rates over time and reasons for drop-outs. Process data were useful for helping to determine “adequacy of implementation”, and therefore the likelihood that project activities will contribute to changes in project outcomes.

D. OVERVIEW OF THE PROJECT STRUCTURE AND IMPLEMENTATION, PROJECT DESIGN AND IMPLEMENTATION STRATEGIES TO DATE

1. Goals and objectives

The goal of LINCHPIN is to decrease under-five mortality in Lufwanyama District by increasing the use of evidence-based, life-saving interventions by caregivers and children. The strategic objective is *increased use of key newborn and child health services and practices*. This objective requires that curative interventions of high quality are continuously available and accessible to newborns and children because they fall ill unpredictably and can die quickly. There are four intermediate results that support attainment of the strategic objective:

1. Increased access to and availability of newborn and child health care services;
2. Improved quality of newborn and child health care services;
3. Increased demand for newborn and child health care services and healthy practices in the home and community; and
4. An enabled environment at all levels to support effective delivery of newborn and child health interventions.

2. Project location

Lufwanyama District is a large rural district in the Copperbelt Province of northern Zambia (12°46'S 27°32'E). The Lufwanyama District Health Management Team (DHMT) oversees health programming for the district, which has 17 facilities staffed by nurses, nurse-midwives, clinical officers, or Environmental Health Officers (EHOs). Two of the facilities are operated by members of the Churches Health Association of Zambia (CHAZ). The nearest referral hospital is outside the district in the city of Kitwe, which is two districts away. A new district hospital is under construction but will not be operational until 2013. Access to and availability of services is limited by several factors including lack of trained staff, poor communications, limited roads with seasonal impassability, and lack of transportation. Facility staffing varies from one to 10 per facility; most facilities are understaffed. Retention of trained HWs is reported to be a problem at many facilities. For this reason, a high proportion of basic healthcare services are provided by minimally trained community workers, including TBAs, CHWs, and community-based distributors (CBDs) for family planning (FP). Each health facility links with 8-11 NHCs, each of which, in turn, serves up to 1,000 people. There are 118 active NHCs in the district. The NHC is a formally recognized structure that typically includes community leaders, TBAs, CHWs, CBDs, malaria agents, and other community-based providers. The role of the NHC is to support community-based agents, promote behavior change and link the community to its health facility¹.

¹ Kalesha P, Overview of Community IMCI in Zambia, Sub-regional Conference on Community-based Child Health Interventions, Lusaka, Zambia, 3 May 2007.

Estimated project area population

Lufwanyama District had a 2010 total population of 85,033 (official government projection extrapolated from the 2000 census) with 15,136 (17.8 percent) children under five and 18,537 (21.8 percent) women of reproductive age (WRA).

3. Technical and cross-cutting interventions

The project focus is on delivering a core package of interventions at each level of the continuum of care for the mother, newborn and child – with a focus on improving delivery at the community and first-level facility levels. Interventions were selected because they have been demonstrated to be effective in reducing newborn and child morbidity and mortality. Intervention packages at each level of the continuum of care include: 1) Pregnancy: focused antenatal care (FANC); 2) delivery and 1 hour post-delivery: skilled delivery care, ENC; 3) Newborn period: PNC, special care for low birth weight (LBW) babies; and IMNCI; and 4) Childhood: pneumonia case management (PCM), prevention and treatment of malaria and control of diarrheal diseases (CDD). Approximately 40% of the project is allocated to maternal and newborn care (MNC), and 20% each to PCM prevention and treatment of malaria, and CDD.

4. Project Design

The Lufwanyama Integrated Newborn and Child Health Project in Zambia (LINCHPIN) is a Five-year Innovation Project (CS-25 cycle) running between 1 October 2009-30 September 2014. The project is co-funded by USAID Child Survival and Health Grant Program (CSHGP) and ELMA Philanthropies, with matching funding from Towers and Perrin and the Crowne Family Philanthropies.

Project activities are guided by the *Zambia National Health Strategic Plan 2010-2015* and the *Road Map for the Attainment of the Millennium Development Goals Related to Maternal and Newborn Health in Zambia* (finalized in 2010). National approaches to newborn and child health include IMNCI at facility and community levels. Integrated community case management (iCCM) has been adopted as a component of community IMCI. CHWs are permitted to give antimicrobials by a letter of intent from the MOH, although a formal policy has not yet been adopted; iCCM case-management guidelines for national use are currently being finalized. IMNCI guidelines have been adapted to include management of the sick newborn, but training in the newborn component has not yet been conducted widely. The current national policy recommends that all delivery and post-delivery care be provided by skilled birth attendants; TBAs are encouraged to refer women for delivery at health facilities and are no longer issued with clean delivery kits. It is recognized that in many areas of the country, TBAs are still responsible for providing delivery services and ENC since skilled birth attendants are often not available or accessible. A process to develop a community-based maternal and newborn health package for CHWs has recently been initiated. Project strategies were developed to be consistent with national policies and strategies, though these are evolving.

The project's main components are described below:

1. Integrated community case management (iCCM)

CHWs are trained to assess, classify and treat sick children 2 to 59 months old with malaria, pneumonia and diarrhea – and to refer children with danger signs. All sick newborns are referred.

Malaria must be RDT confirmed before treatment is given. CHWs are provided with ORS, zinc, amoxicillin, ACT and RDTs – as well as a timer and MUAC tape. They enter each sick child seen in a register – recording the classification and treatment given, whether referral was recommended and completed, and whether follow-up was conducted. CHWs are also trained to give key messages on MNCH topics. CHWs are supervised by facility-based health workers. Supervisors meet CHWs each month at the health facility, where they re-supply them with medicines and review and summarize register data. CHWs have two other sets of recording forms: availability of essential drugs (availability of each medicine is recorded each day of the month – forms as returned during monthly facility visits); and referral slips (slips have three sections: one kept with the CHW; one given to the caretaker of each child referred; and one given to the caretaker by the facility worker summarizing the classification and treatment given – for return to the CHW when the caretaker returns home).

2. Community-based maternal and newborn care

TBAs are trained to make home visits to mothers and newborns starting at delivery. If the newborn is delivered at home, the TBA provides ENC, including newborn resuscitation, as trained by Boston University as part of the Lufwanyama Neonatal Survival Project (LUNESP) research study that preceded LINCHPIN. PNC home visits are then conducted at 24 hours, two, three, and seven days, and at two, six, and eight weeks. Mothers and newborns with danger signs are referred to the health facility. TBAs record each newborn seen in a register – recording ENC tasks performed (if the TBA is present at the delivery), PNC visits completed, and whether the newborn was referred for danger signs. TBAs are also trained to give key messages on ANC, delivery and PNC. TBAs are supervised by facility-based midwives, if available, or other facility-based staff. TBAs meet with supervisors each month at the health facility, where register data are reviewed and summarized.

3. Teaming of CHWs and TBAs

As LINCHPIN's innovation, CHWs and TBAs are trained to work as teams. Teaming is primarily designed to bridge the gap between care provided at delivery and the early newborn period (usually provided by the TBA) and care in infancy and childhood (usually provided by the CHW). The teaming approach teaches CHWs and TBAs to do the following: 1) Make joint two, six, and eight week PNC home visits. These visits are designed to ensure that CHWs are familiar with mothers and children already identified by TBAs – and to establish the CHW as a community-based provider. TBAs and CHWs work together to conduct health education, screen mothers and newborns and solve problems; 2) Conduct joint health education and promotion activities during home visits, outreach sessions or at other community events or meetings; 3) Encourage mutual support and problem solving; and 4) Help promote and facilitate referral of sick mothers, newborns and children when necessary. In addition, NHC members are trained in the teaming approach. The intention is that they will assist with: 1) Promotion of key health practices and danger sign recognition; 2) Emergency support and referral for newborns, young children and pregnant women; 3) Promotion of CCM in the community; and 4) Monitoring the effectiveness of teams.

Teaming of CHWs and TBAs is an innovative approach that is being tested for the first time in Zambia. For this reason, teaming is the focus of the project's operations research, planned and being conducted by Boston University. More details of the operations research project on teaming are summarized in Section 1.1.3.

4. Creating an enabled environment for MNCH

NHCs are trained in community mobilization for MNCH and in CHW/TBA teaming. The purpose of community mobilization activities are to: 1) empower NHCs and communities to make informed decisions about MNCH – and to develop and implement local plans to make improvements; 2) strengthen and/or develop community-based referral systems to better respond to obstetric, newborn and child health emergencies; 3) increase demand for community-based case-management and TBA home visits in order to ensure that mothers, newborns and children seek care early; 4) help change social norms that results in or are related to harmful practices; and 5) strengthen social support networks for pregnant women. The intention is to give NHCs and communities skills that will improve long-term capacity to identify and address health-related problems – and to use improved community demand to help drive improvements in quality, access and availability of health services. The CAC is used to build community capacity in NHC members to identify critical barriers to use of high-impact services and practices and to plan for improvement.

5. Partnerships and collaboration

LINCHPIN has focused on building the capacity of the local government system to implement maternal, newborn child health activities. In collaboration with partners it has facilitated increased resources for MNCH, particularly at the community level. At the national level, the project has contributed to national development and roll-out of iCCM and the community-based MNCH package. Important partners have included:

- Luftwanyama DHMT. Project activities are implemented using the routine district system. For this reason the project has worked closely with the district health officer (DHO) and DHMT. The project has trained district staff as facilitators, conducts joint supervisory visits and regularly updates district staff on progress. Facility-based district staff are supervisors for CHWs and TBAs. Lessons learned will inform district programming in the longer term.
- MOH and the Ministry of Community Development, Maternal and Child Health (MCDMCH)^[1]. At the national level LINCHPIN's Program Manager sits on the IMCI Technical Working Group, which oversees iCCM; and was asked by the ministry to lead the initiative to develop a national newborn care strategy, including PNC, into a community-based implementation package. These fora facilitate sharing lessons learned from district implementation into national materials and guidelines. The Program Manager serves as a national reference, advocate and technical resource for MNCH.
- District partners. Since 2009, LINCHPIN has received funds for project activities from the ELMA Foundation, Towers and Perrin, and the Crowne Family Philanthropies. In addition, Save the Children has attracted several additional donors to Lufwanyama District who are supporting complementary activities. These include Save the Children/Korea (infrastructure development, including a new maternity ward for the Mkutuma Health Center), the Swedish International Development Agency (SIDA) (*MDG 4&5* and *Local to Global* projects) and the Swedish Postcode Lottery (project promoting infant and young child feeding in four of Lufwanyama's health zones). *MDG 4&5* developed from a submission made by Save the Children for the 2011 Grand Challenge:

^[1] This is a new ministry created in 2012 by the recently elected President to improve maternal and child outcomes in support of MDG 4 & 5.

Saving Lives at Birth competition. It aims to build elements of NHC and community capacity such as financial systems and governance - and will provide small grants to approximately 20 of the 80 trained district NHCs to carry out community “action plans” developed through the community action cycle process. *Local to Global* is an advocacy initiative that trains community leaders and NHCs in topics related to child rights and child rights governance. These initiatives are all complementary and supportive of LINCHPIN.

- National partners. The project has worked closely with UNICEF, WHO, JICA, USAID ZSSP and Malaria Consortium as part of the IMCI Technical Working Group on development and national roll-out of iCCM. The working group is responsible for the development of iCCM strategies, protocols, and materials – and for helping to plan approaches to implementation. Development of the community-based maternal and newborn care package will adapt WHO materials – and will be informed by implementation experience of the Save the Children/Saving Newborn Lives (SNL) initiative.

6. Relationship with USAID in Malawi

The USAID/Zambia Child Survival Specialist Dr. William Kanweka participated in the DIP workshop. The project maintains regular contact with the USAID Mission’s Health, Population, and Nutrition team. LINCHPIN strategies were built on two cluster randomized community-based research projects supported by USAID in Zambia – LUNESP (Lufwanyama Neonatal Survival Project) for newborn care and ZIMMAPS (Zambia Integrated Management of Malaria and Pneumonia Study) for CCM. Both were carried out by the Boston University Center for Global Health and Development (CGHD), working with the DHMT and local partners. Save the Children coordinates with USAID -funded programs through participation in monthly partner meetings. LINCHPIN is collaborating with the Zambia Integrated Systems Strengthening Project (ZISSP) in the areas of community mobilization and quality of facility-based care. Save the Children is also working with the Saving Mothers, Giving Life (SMGL) Initiative, through MCHIP, to introduce Helping Babies Breathe (HBB) using a mentorship model. Although Lufwanyama is not one of the four priority districts for SMGL, district staff have been trained as HBB trainers for national scale-up.

The Boston University Lufwanyama Neonatal Survival Project (LUNESP) used TBAs to deliver three ENC interventions: 1) resuscitation; 2) thermal protection; and 3) identification of newborns with signs of possible sepsis followed by the provision of a first dose of treatment (oral amoxicillin) and referral to the nearest health facility. The LUNESP approach significantly reduced newborn mortality (Gill 2010). The second research activity, the Zambia Integrated Management of Malaria and Pneumonia Study (ZIMMAPS), pioneered community case management (CCM) in Zambia. CHWs were trained to perform rapid diagnostic tests (RDT) and prescribe artemisinin-based combination therapies (ACT) based on RDT results and prescribe amoxicillin for non-severe pneumonia instead of referral. ZIMMAPS showed that CHWs were able to use RDTs, ACT and amoxicillin to manage both malaria and pneumonia at the community level (Yeboah-Antwi 2008).

E. PRESENTATION OF PROGRESS TOWARD THE ACHIEVEMENT OF PROJECT RESULTS

Table 2: Indicators-LINCHPIN Maternal, Newborn and Child Health Program²

Result	Activity Area	Indicator	2010	2011	2012	Target	Comments
Population coverage							
SO: Increased use of key newborn and child health services and practices	Service delivery	Proportion of mothers and newborns who received a PNC contact within 2 days of birth	28%			60%	HH survey not conducted at MTE– scheduled for project endline in 2014. Output data from community registers tracks progress in some treatment practices
		Proportion of children with suspected pneumonia who received amoxicillin	50%			70%	
		Proportion of children with suspected pneumonia who received amoxicillin within 24 hours of onset of symptoms	13%			50%	
		Proportion of children with diarrhea who received ORT	74%			90%	
		Proportion of children with diarrhea who received zinc	0%			50%	
		Proportion of children with suspected malaria who received ACT within 24 hours of the onset of fever and took an appropriate 3 day course	11%			50%	
	ENC	Proportion of newborns wrapped and dried immediately after birth	80% - D 88% -W			95% - D 95% - W	
Program outputs							
IR1: Increased access to and availability of services	Deployment of human resources	CHW density/500 U-5	2.5/500	2.2/500	2.2/500	1/500	
		TBA density/1000	1.3/1000	1.2/1000	1.2/1000	1/1000	
	Training	Proportion of CHWs trained in iCCM	0	100% (85/85)	100% (85/85)	100%	
		Proportion of TBAs trained in MNCH	0	90% (111/120)	90% (111/120)	100%	
	Services	Proportion of TBA registered newborns who receive a PNC contact within 24hr of birth	-	75% (855/1141)	75% (524/696)	100%	
		Proportion of TBA registered newborns who were delivered at a facility	-	32% (369/1141)	41% (283/696)	70%	

Table 3: Indicators-LINCHPIN Maternal, Newborn and Child Health Program

Result	Activity Area	Indicator	2010	2011	2012	Target	Comments
Project outputs							
	Services	Proportion of children referred who completed referral		86% (274/317)	78% (469/604)	100%	In 20% or < of cases referral is for Danger S

²Indicators have been modified from those included in the final DIP proposal. Changes to indicators are summarized in Annex 12.

Result	Activity Area	Indicator	2010	2011	2012	Target	Comments	
IR2: Improved service quality	Newborn care practices - TBAs	Proportion of deliveries attended by a TBA where the baby was dried and wrapped	-	100% (646/646)	100% (377/337)	100%		
		Proportion of deliveries attended by a TBA where the baby received assisted breathing	-	7% (42/646)	10% (34/337)	6%	Expected % based on LUNESP study data	
		Proportion of TBA registered newborns who are referred for danger signs	-	6% (63/1141)	1% (16/696)	1-11%		
	Child treatment practices - CHWs	Proportion of CHW registered cases of suspected pneumonia treated with amoxicillin	-	81% (357/440)	84% (504/599)	100%		
		Proportion of CHW registered cases of RDT positive malaria treated by CHWs	-	73% (1283/1736)	98% (4267/4332)	100%		
		Proportion of CHW registered cases of diarrhea treated by CHWs with ORS	-	78% (741/944)	92% (533/577)	100%		
		Proportion of CHW registered cases of diarrhea treated by CHWs with zinc	-	55% (517/944)	20% (114/577)	70%		
	Systems supports	Proportion of CHWs who received at least 1 supervisory visit in the previous 3 months which included clinical supervision	-	100% (74/74)	100% 74/74	100%		
		Proportion of TBAs who received at least 1 supervisory visit in the previous 3 months which included clinical supervision	-	93% (97/104)	93% (97/104)	100%		
		Proportion of CHWs that have had no stock-outs of essential medicines in the previous month: list by amoxicillin, ACT, ORS, zinc, RDTs	-	AM- 23% ACT – 45% ORS – 28% Zinc – 11% RDT – 47%	AM -23% ACT – 23% ORS – 26% Zinc – 3% RDT – 51%	50%		
	IR3: Increased demand for services and healthy practices	Care-seeking	Proportion of caregivers of children with suspected pneumonia who sought care from an appropriate provider	67%			90%	
		Maternal knowledge of danger signs	Proportion of caregivers who know at last 4 danger signs for seeking care for their sick newborn	11%			60%	
			Proportion of caregivers who know at least 4 danger signs for seeking care for their sick child	22%			70%	
		Project outputs						
IR4: Enabled	Teaming	Proportion of CHW/TBA teams trained in teaming	0	98% 46/47	98% 46/47	100%		
	Community	Proportion of NHCs trained	0	68%	68%	75%		

Result	Activity Area	Indicator	2010	2011	2012	Target	Comments
environment	mobilization	in community mobilization and teaming		80/118	80/118		
		Proportion of planned SMAGS established and implementing action plans	0	88% (23/26)	88% (23/26)	100%	
	District planning	Annual district plan includes budgeted CCM activities	0	Y	Y	Y	

Table 4: OR Summary Table: The feasibility and effect of CHW-TBA teams on the delivery and use of integrated newborn and child interventions among children 0-59 months of age in Lufwanyama: Jan 2011 – May 2012

Milestone	Key Activities	Progress	Comments
Formative research	Six group discussions and pile sorting sessions were held with CHW/TBAs and NHCs to explore the socio-cultural context and identify area-specific domains and factors for measuring teaming in this rural setting.	<p>Development of teaming training manual: The formative research identified factors which highlighted the knowledge, attitudes and practices key to creating successful community teams. These competencies were incorporated into a teaming training manual to strengthen teaming skills and abilities of the teams.</p> <p>Development of a teaming measuring tool: The group discussion and pile sorting identified 18 factors grouped into 6 domains relevant for measuring teaming structure. Data were used to develop a teaming assessment tool</p>	<p>Manuscripts for publication: (1) “Effective access to case management – worse than we thought” has been approved for publication in the iCCM supplement in <i>American Journal of Tropical Medicine and Hygiene</i>. (2) “Measuring the structure, function and determinants of community-based “teams” delivering health care in rural Zambia” being finalized for re-submission.</p>
Training of teams	The CHW/TBA teams with two members of the NHCs were trained to build and reinforce their ability to work effectively as community teams. Seven training sessions were conducted.	CHWs, TBAs, and NHCs trained: 46 teams (made up of 46 CHWs, 46 TBAs, and 92 NHCs members) were trained. All 184 participants acquired the needed skills and competencies, passed the end of training knowledge tests, and were awarded certificates.	LINCHPIN has 42 functional teams, attrition due to some CHWs finding other work, illness (1) and death (1). About 5 teams have self-formed in the meantime. These will not be added to teamed sample, but may confound the non-teamed sample. Needs tracking.
Baseline demographic data on TBAs and CHWs	TBAS and CHWs were interviewed prior to the teaming training to collect baseline data regarding potential confounders or effect modifiers that could influence teaming or impact.	Data collected and entered, but not yet analyzed.	
Assessment of teams	Two assessments of the level of teaming have been carried out. The first assessment started two months after the teaming training and the second six months after the first.	Team assessments: 45 teams were assessed during the first teaming assessment. All 45 teams were categorized as “Stage 3” on the teaming structure scale (average score of 92%, ranging from 70 to 98). On the teaming function scale, 14 teams were categorized as “below average” with a score of ≤ 5 out of a possible 14; 25 teams scored “average” with a score of 6-10; and 6 teams scored “above average” with a score of 11-14. For the overall score (composite teaming level which is a combination of teaming function and structure), 14 teams were categorized as “Medium” and 31 as “High”.	A key challenge is the availability of supplies and drugs for the CHWs to function optimally: antibiotics, ORS, zinc, RDT and ACT. LINCHPIN will do what is possible within its manageable interest, but this is a continent-wide challenge. At endline we will measure treatment by syndrome, stratified by source of care. More data on management of babies 0-2 months of age is needed to help understand how this group has been managed.

Milestone	Key Activities	Progress	Comments
Baseline household survey	A population-based household survey was carried out among women with children 0-59 months old to measure the baseline level of key indicators which included treatment of pneumonia, malaria and diarrhea; and referrals for neonatal sepsis and other serious childhood conditions.	Baseline: 735 caregivers of children 0-59 months old were interviewed from 46 NHC areas with CHW/TBA teams.	Definition of “severe illness needing referral” needs to be modified in the analysis so that it is more sensitive.

F. DISCUSSION OF THE PROGRESS TOWARD ACHIEVING RESULTS

1. Contribution toward project and OR’s objectives/results: Increased access, availability, quality and demand for newborn and child health care services

1.1 Integrated community case management

The project has successfully implemented iCCM care in the district. It has done this by working in close collaboration with district staff. CHWs are well accepted by communities, and in many areas are now the first source of care. Caregivers and community members report that CHWs are well respected and working well.

Main project achievements include:

Improved access and availability

- Development of iCCM training materials, case-management job aids, community CCM registers for CHWs and aggregation registers for facility supervisors. Standard WHO/UNICEF CCM guidelines were adapted for local use. A total of 7 of 8 (88%) identified trainers for iCCM were trained.
- Training of CHWs in iCCM and use of CCM registers. All 88 available CHWs (100%) in the district were trained. Trainings were well accepted. CHWs report that they contain enough clinical practice to give them case management skills. CHWs report that registers are useful job-aids because they help reinforce the key steps in the case-management process.
- Evidence that caregivers are bringing children to CHWs. Between July 2011 and April 2012, an estimated 12,430 children were registered by CHWs (a total of 8628 of these were CCM classifications, with the balance non-CCM classifications) - an average of 16 cases per CHW/month. Seasonal variations are noted, with the number of cases generally higher in January and February, which are malaria season months. Between 48% and 91% of CHWs reported register data monthly during the reporting period.

Improved Quality

- A high proportion of children registered by CHWs are receiving treatment. Between July 2011 and April 2012, 6068 cases of RDT positive malaria were recorded, of which 91% received ACT treatment. During the same period, 1039 cases of fast breathing requiring treatment were recorded, of which 83% received amoxicillin; and 1521 cases of diarrhea of which 84% received ORS and 41% received zinc. Registered cases do not capture those children who were taken directly to a health facility, or those who visited the CHWs but were

not registered. Field interviews indicate that in some cases, CHWs may not register children if they do not have a supply of medicines available.

- CHWs are recognizing danger signs. Overall 173/8628 (2%) of children were identified with danger signs. A total of 921/12,430 (7%) of registered cases were referred during the reporting period (for all causes including danger signs, for medicines, or for non-CCM problems). Of those referred, 81% successfully completed referral. CHWs are generally using referral slips, but often do not get the feedback referral slip from facility staff.
- Development of iCCM checklists and training of supervisors. Two checklists were developed; a general CHW supervision form that is administered at monthly facility visits, and a “mentoring” checklist that is used to observe CHWs managing a case and provide immediate feedback and problem solving. Monthly facility visits are generally taking place, and some supervision of CHWs occurs, although the quality of supervision is highly variable.
- Joint supervision of facility supervisors and CHWs by Save the Children project staff and district staff. This is reported to have improved acceptance of iCCM and motivated facility staff to complete CHW aggregation registers. Monthly meetings between facility supervisors and CHWs are generally taking place, although the time available for supervision is highly variable.
- Support for review and collection of register data each month – and compilation and analysis of register data. Local data are summarized at health facilities as simple charts which have been posted on the wall and are used to discuss iCCM progress with facility staff.
- Provision of essential CHW supports – including bicycles, bags, timers, MUAC tape and job aids. These supports are essential for CHWs to practice case-management. Bicycles in particular are essential for reaching villages and households in more remote areas.

Improved Demand

- CHWs are able to give key health education messages during home visits, at community meetings and during outreach sessions; NHC members report that they are well accepted by caregivers and community members. Both teaming and community mobilization activities are reported to have improved demand and acceptance for iCCM (see sections 1.2 and 1.3).

Program gaps and continuing challenges: iCCM

a) Gaps in CHW coverage

CHW coverage remains a challenge for three important reasons: 1) *CHW attrition*: Of the 88 trained CHWs, 73 remained in May 2012 (a 17% decline). Of those who left work, ten were employed elsewhere, three stopped working, one was relieved of duties and one died; 2) *Inadequate numbers of CHWs*: The 73 remaining CHWs represent a density of 2.2 per 500 under-5 population; and 3) *CHW distribution*: CHW mapping shows that CHWs are distributed un-evenly throughout the district, and differ substantially by facility catchment area.³

³ Zambia’s new Community Health Assistant (CHA) program will be rolling out over the next few years. These are paid CHWs who are trained for 12 months. Only 300 have been trained to-date, and it is not anticipated that CHAs will replace volunteer CHWs in the near term. However, new volunteer CHWs are no longer being trained with government funds. They may be trained by partners and certified by the government.

b) Medicine supply

Stock-outs of essential medicines are common. Register data from April 2012 show that 60% of CHWs reported a stock-out of at least one essential medicine – ACT, amoxicillin, ORS or zinc – or of RDTs. Zinc has been most often out of stock due to problems with central supply. For several months the formulation of amoxicillin supplied from central stores was not appropriate for pediatric use (capsules). Field discussions suggest there are a number of possible reasons for CHW stock-outs, including: 1) Facility-based health workers not supplying CHWs with sufficient medicines at monthly visits. This is partly because they do not know how to estimate needs, and want to retain as much supply as possible for facility use; 2) health facility ordering practices from the district. In many cases, CHW drug usage is not being added to facility usage, when requesting medicines; and 3) District ordering practices to central stores. District ordering practices are still based on population-based estimates of number of expected pediatric cases each month. A “pull” system, which estimates total number of facility and community cases seen, and uses these to estimate medicine needs is essential. Overall, therefore, ordering and re-supply practices at several levels may need to be addressed.

c) Counseling cards on key MNCH messages are not available

CHWs are issued with a list of key messages, but no counseling cards or flip charts that use pictorial images. Use of visual aids would improve their capacity to transmit messages to the communities they serve. A large number of messages and materials developed and adapted for the local context in Zambia by HCP are archived and available from *Afya Mzuri*, a local Zambian NGO based in Lusaka.

d) Difficult to conduct clinical supervision

It remains difficult for supervisors to conduct clinical supervision. Clinical supervision (“mentoring”) is usually conducted during outreach visits. Supervisors report that the most important barrier to observation of practice is a lack of time, since they are responsible for clinics on the days when they are expected to conduct supervision. They also report that completing observation forms is a burden and that they conduct “informal” observations of CHW practice, even when they are not able to complete an observation checklist.

e) Challenges with use of iCCM register and forms

Four challenges were noted: 1) CHWs may not be registering sick children when they do not have a supply of medicines. Register data may therefore not capture the population of sick children in the catchment areas; 2) Registers are not always complete as some CHWs still need assistance completing registers; 3) Referral slips are often not completed by facility staff and given to caregivers for return to CHWs. Facility staff often lose slips or forget to complete them; and 4) Use of the essential drugs form. CHWs are required to complete a daily drug availability form each month which adds an additional burden to their routine activities. Supervisors report that data on stock-outs of medicines can be obtained by asking CHWs when completing the facility aggregation register. The drug availability forms may therefore not be necessary.

1.2 Community-based Maternal and Newborn Care

TBAs are generally able to identify mothers and newborns in villages, make home visits as required in the PNC schedule, and use registers. TBAs are no longer issued with clean delivery kits or with equipment and supplies for managing newborn resuscitation.

Main project achievements include:

Improved access and availability

- Training of TBAs in maternal and newborn home care and use of TBA registers. All 111 (100%) of available TBAs were trained. Loss of TBAs was less of a problem than for CHWs. By April 2012, seven TBAs were no longer working (a 6% decline). Of those who stopped work, three were employed elsewhere, two died and two stopped working. The average density of TBAs is 1.2/1000, which is the national standard.
- Evidence that TBAs are registering newborns in communities. Between July 2011 and April 2012, an estimated 1837 newborns were registered by TBAs, an average of two newborns per TBA per month. Of those registered, an estimated 75% received a PNC visit within 24 hours of delivery. The proportion of TBAs completing registers each month ranged from 45% to 92% - the proportion reporting has increased over time.
- Register data between July 2011 and April 2012 show that on average 35% of all women were accompanied to health facilities for a facility delivery by TBAs suggesting that in a proportion of cases TBAs are encouraging facility delivery.

Quality

- Register data show that 100% of babies are dried and wrapped, when the delivery is attended by a TBA, and that TBAs are resuscitating 8% of these newborns. Overall 4% of newborns seen by TBAs are reported to have been referred for danger signs.
- The project has developed TBA supervision checklists (including two clinical observation forms on immediate ENC and possible severe bacterial infection), trained supervisors, and provided support for review and collection of register data each month. Experience with these elements is similar to that for CHWs (see Section 1.1).

Demand

- TBAs are able to give key health education messages during home visits, at community meetings and during outreach sessions. NHC members report that they are well accepted by caregivers and community members. Both teaming and community mobilization activities are reported to have improved demand and acceptance for iCCM (see sections 1.2 and 1.3).

Program gaps and continuing challenges: TBA home visits

a) TBA training materials did not use a standard community maternal and newborn package
Training materials were pieced together from national TBA training materials and ENC training guidelines used by the LUNESP Project. Some elements of PNC may not have been consistent with current guidelines.

b) Quality of newborn care

Sick newborn care at first-level facilities: Although national IMCI training guidelines have been updated to include management of the sick, young infant 0-2 months old, most HWs have not yet been trained in the newborn component. Their capacity to assess, classify and treat sick newborns is therefore limited. Since a key element of the community-based approach is referral of all newborns with danger signs, there is an urgent need to improve the skills of facility staff in this area.

Newborn resuscitation: At baseline, TBAs conducted approximately 50% of deliveries both at home and at facilities when a skilled birth attendant was not available. For this reason they are trained in ENC, including being refreshed in newborn resuscitation. However, many TBAs do not have equipment (suction device, bag and mask) to assist with resuscitation. There remains a gap between national TBA policy and services that TBAs are providing on the ground. Similarly, limited data are available from the HFA on availability of resuscitation equipment at first-level facilities for babies delivered at the facility.

c) Difficulties with use of TBA registers and forms.

Three challenges were reported: 1) Seven TBAs were not able to complete registers due to illiteracy or poor eyesight. Registers were printed in English and did not include pictorial aids for comprehension; 2) Confusion about the PNC referral section of the TBA register. At each PNC visit, TBAs are asked to record newborns referred for danger signs. In some cases TBAs have recorded newborns referred for any reason, not only when danger signs are noted. This section of the register could be more clear to avoid confusion; and 3) No clinical observation of PNC practice checklist is available (checklists are available for review of TBA management of possible severe bacterial infection and ENC).

d) Counseling cards on key MNCH messages are not available

As discussed in the previous section, no counseling cards or flip charts which use pictorial images on key messages are available.

1.3 Operations research on teaming of CHWs and TBAs

The operations research (OR) within LINCHPIN is aimed at assessing the feasibility and effectiveness of TBA-CHW teams supported by NHCs to deliver high impact *integrated newborn and child interventions among children 0-59 months of age in Lufwanyama District*. The OR is being implemented in three phases. The first phase was formative research which used group discussions and pile sorting exercises to explore and identify domains and factors for measuring teaming. The second phase is an evaluation employing a pre- and post-intervention design to assess the use of high impact newborn and child care interventions and the level of teaming achieved. The third phase is a qualitative process documentation to assess community opinions and the acceptability of CHW-TBA teaming. All phases have been implemented; the qualitative process documentation is ongoing. Operations research has been planned and conducted by BU in collaboration with project and DHMT staff. Forty-six teams (composed of 46 CHWs and 46 TBAs) and 92 NHC members have been trained for a total of 184 participants. CHWs, TBAs, and NHCs have enthusiastically embraced the concept of teaming and teams generally appear to making home visits and working together. A full description of progress with the operations research on teaming is presented in Annex 13.

Program gaps and continuing challenges: OR teaming

a) Team attrition

Although 46 teams were trained, 45 teams were assessed during the first assessment and 43 teams during the second assessment. Teams ceased to function when CHWs or TBAs stopped working as previously discussed in sections 1.1 and 1.2.

b) Changing team structure

Teams were originally designed to be CHW/TBA pairs. NHC members were trained to provide support to teams, but not to operate as part of the team and conduct home visits. In most areas, however, trained NHC members have considered themselves part of teams and conduct joint visits. This appears to have been the result of miscommunication during training of participants. This was not the original intention of the teaming design. The extent to which team structure has been changed to include NHCs will need to be quantified since it will change the teaming intervention being delivered.

c) More data needed

More data would be useful for determining the impact of teaming on practice in two areas: 1) Management of young infants under two months old. Since one of the objectives of teaming is to improve the management of children 0-2 months of age, more data on this age group could be collected from community registers during ongoing teaming assessments. Key data includes, PNC visits at 24 hours, two, three, and seven days, and the number of sick children 0-2 months old seen, referred and completing referral; and 2) The baseline household survey reports that 38% of children had a suspected severe illness in the previous two months; a very high proportion. Survey screening questions for severity of illness included: "looks very unwell/not playing well" or "red swollen eyes/discharge", suggesting that the current variable is not specific for severe illness. The variable needs to be re-calculated by removing some non-specific signs and focusing on those more strongly associated with severity. This is important in order to better estimate referral rates for severe illness before and after the teaming intervention.

1.4 Enabled environment for MNCH

- The project has focused on mobilization through NHCs to build local capacity to support MNCH activities. More details of the community mobilization process are included in Annex 12.

Main project achievements; community mobilization

- Development of a community mobilization plan and NHC training materials, in the areas of CHW/TBA teaming, and community mobilization. The community action cycle approach has been used to develop local plans. Training materials were also developed for Safe Motherhood Action Group (SMAG) members on MNCH health communication.
- Training of NHCs members from 80 of 118 NHCs (68%), and 23/26 SMAGs (88%), in community mobilization, health communication and the community action cycle. As mentioned in section 1.3, 92 NHC members were also trained in teaming to support CHW/TBA teams.
- Training and deployment of five CMs, based throughout the district, overseen by a project CM supervisor. These staff are paid for by the project. Mobilizers are provided with motorbikes and fuel for site visits. They are responsible for ongoing oversight and support of NHCs as they work through the community mobilization process and develop action plans.
- Organization of NHCs – all now have a written constitution and a list of members. Women comprise at least 50% of NHCs. NHCs are provided with stationary, pens and a file box for record keeping of group decisions and plans. NHCs meet monthly and send representatives to Health Center Management Committee meetings each month in order

to strengthen linkages between the facility and community. Links with traditional rulers, male motivators and grandmothers' groups have been encouraged. NHCs report that they are interested in working on health issues, and like being associated with CHW/TBA teams.

- Development of community action plans to improve local activities to address health issues. The community action cycle approach has been used. Action plans have been reviewed by project staff and submitted to the district for consideration for district funding.
- Use of goats as incentives. CHWs/TBAs and NHCs have been given goats with the idea that the offspring of these goats will progressively be distributed to NHC members as an incentive.

Program gaps and continuing challenges: community mobilization

Need for ongoing support and oversight

NHCs need continued support to develop and implement action plans with local resources. Many currently expect financial support from the project or from the district. Ongoing efforts are needed to help them identify local resources and work out how to take action. CMs need to provide continued support to help NHCs work through the community action cycle process. Use of goats as a local motivator for NHCs needs to be clarified as in some areas goats have not been distributed equitably.

As mentioned in sections 1.1 and 1.2, visual materials have not yet been made available for NHC counseling and health education activities. In addition, as discussed in section 1.3 the role of NHC members in teams needs to be clarified. A more detailed description of community mobilization achievements and challenges is presented in Annex 12.

2 Contextual factors

Implementation of project activities has been influenced by a number of factors, discussed in section 1. The most important of these that will influence the next phase of implementation include: 1) Medicine supply – lack of essential drugs limits the ability of CHWs to manage sick children correctly; 2) Availability of CHWs – low and uneven coverage will reduce availability of iCCM to some populations within the district; 3) Barriers to referral - poor roads and limited transportation remain an important barrier to effective referral. CM activities have focused on improving development of local referral approaches, but this remains a barrier that is difficult to address; and 4) Availability of the district referral hospital. The new district hospital is under construction and will improve the availability of tertiary care in the district, although this facility is unlikely to be fully operational before the end of the project.

3 Role of key partners

Table 5: Role of key partners and collaboration

Partner	Role in project	Result of collaboration – suggestions for improvement
District and provincial managers	Primary partner – provide staff, supervisors, trainers and long term implementation	Joint planning, training, supervision, tracking of staff availability. In the next phase- more attention needed to tracking and use of community register data by district staff; documenting district experience with community-based approaches and presenting at national fora; and advocacy for improved medicine supply

MOH and the Ministry of Community Development, Mother and Child Health (MCDMCH)	Implementing iCCM and beginning Implementation of community MNH package at national level	Continue to sit on iCCM working group and use district experience to inform national implementation strategies; and to develop approach to for community-based MN care
ZISSP	USAID bilateral working on community strengthening and quality of care	Limited collaboration currently but able to provide training for district facility-based staff in newborn-IMCI
SIDA: MDG4 and 5, Local to Global	Supports NHC capacity building with small grants	Continue to oversee and promote use of small grants to NHCs for implementation of MNCH action plans
Swedish Postcode lottery	Support for improved infant and young child feeding in four zones	Links with key health behaviors for infants and children promoted by LINCHPIN to ensure messages are consistent

4 Overall design factors that are influencing progress toward results

Encouraging elements of the design include: 1) Use of CHW/TBA teams for which there has been a positive response and that appears to be increasing support and acceptance for iCCM and community MN home visits; 2) Use of community registers which function as job aids and appear to be feasible for local use; 3) Working within the existing district structure, which helps build local capacity to implement community-based activities in the longer term and helps support sustainability; and 4) Linking with national implementation which helps ensure that local lessons learned inform wider implementation. The single most important design element that may limit progress is the reliance on medicines supplied through the routine distribution system.

G. CONCLUSIONS AND RECOMMENDATIONS

The principal conclusions of the evaluation are:

1. Integrated CCM has been successfully implemented in the district. Data suggest that CHWs are able to: assess, classify, treat and refer sick children appropriately; complete community registers; and make monthly visits to health facilities for re-stocking. Continued attention is needed to ensuring that supervision includes observation of practice.
2. Community-based maternal and newborn care has been well accepted in the district. TBAs are generally able to identify mothers and newborns in villages, make home visits as required in the PNC schedule, use registers, and refer mothers and newborns if necessary. Continued attention is needed to ensuring that supervision includes observation of practice. TBA training did not use a community-based MNC package, based on international standards. TBAs often lack equipment for newborn resuscitation although they conduct a high proportion of deliveries and are trained in ENC.
3. CHW/TBA teaming shows promise as an approach to improve quality and reach of community-based activities. Teams report making joint home visits in the postnatal period, conducting health education sessions for large and small groups, and helping each other facilitate referral of mothers, newborns and children.
4. Community mobilization activities using NHCs and SMAGs have been well accepted. All trained NHCs have developed action plans for MNCH. CMs deployed in the district have worked well as facilitators for community mobilization. Ongoing support is needed to build capacity to implement local action plans for MNCH and to build local capacity to ensure that severely ill patients reach referral sites.
5. All key components of operations research on teaming of CHWs and TBAs have been implemented as planned. An unforeseen complication has been that trained NHC members

have joined CHW/TBA pairs for home visits – a role that was not initially intended. More data on the 0-2 month age group are needed to help evaluate the effect of teaming on the management of this age group.

6. CHW coverage remains limited because of CHW attrition, inadequate numbers of CHWs, and uneven distribution. Ensuring adequate CHW coverage will be important for achieving district population impact.
7. Stock-outs of essential medicines are a common problem, and the most important barrier to practicing iCCM. Ordering and re-supply practices of essential medicines at several levels need to be addressed.
8. Quality of sick newborn care at first-level facilities remains limited. Facility-based health workers have generally not been trained in management of the sick newborn. Improving the quality of first-level care is critical to improving outcomes for newborns referred by CHWs and TBAs.
9. CHWs, TBAs and NHC members do not yet have counseling cards or flip charts on key MNCH messages that use pictorial images.
10. Community registers and forms have been useful for tracking progress. Registers are useful job aids. Several changes are proposed to make registers easier to complete, and to reduce the total number of forms. Modifications in project indicators are also proposed.
11. Building district and national capacity. District staff have been involved with planning, training, and joint supervision. In the next phase, more attention will be needed to build district capacity to plan, manage and implement activities in the longer term.

The principal recommendations of the evaluation are:

1. Continue ongoing support for iCCM, PNC home visits, teaming and community mobilization through existing mechanisms. Conduct additional planned training for NHCs to meet training coverage targets and continue community mobilization support. Conduct refresher training for CHWs/TBAs. Continue joint supervision and support for data collection and use.
2. Develop an approach to improving CHW coverage. This should include support for district training of additional CHWs using the accredited national six-week course. Selection criteria for CHWs will be important to ensure they are allocated to areas where they are needed and that they are likely to remain in their posts.
3. Review reasons for medicine stock-outs and develop approaches to improving supply. Collaborate with the JSI Deliver project to do a quick review of logistics barriers. Reinforce simple methods for taking local action including teaching facility staff to use community register data to estimate monthly CHW drug needs and improve local ordering practices.
4. Develop an approach to improving management of the sick newborn at the first-level facilities. This could include training of first-level staff in IMNCI, and improved clinical supervision. Collaborate with ZISSP to conduct training using ZISSP resources.
5. Improve quality of care provided by TBAs: 1) Adapt WHO/UNICEF/Save the Children community-based MNC guidelines for local use and use these for ongoing TBA refresher training; and 2) Review feasibility of procuring and distributing newborn resuscitation equipment to TBAs in consultation with the DHMT.
6. Update community registers, forms and project indicators, based on field experience. Proposed changes are summarized in Annex 12. In addition, a monthly community register data report, for use by the DHMT and other stakeholders, is proposed.

7. Continue to build district and national capacity. Engage the DHMT to: address problems with CHW coverage and medicine supply; manage and use community register data; document lessons learned; and develop a strategy for handing over project-supported activities to the district. Continue efforts to inform national roll-out of iCCM and development of the community based MNC package; consider use of the district as a learning site for visits by national and other district stakeholders.

H. ACTION PLAN FOR RESPONDING TO EVALUATOR RECOMMENDATIONS

#	Recommendation	SC/LINCHPIN Comment	Actions (steps, if appropriate), indicators or milestones for completion of action	Responsible Person or Institution	Timeline for Completion
Access, quality, and demand					
1.	Continue on-going support for iCCM, MN home visits, teaming and community mobilization through existing mechanisms. Conduct refresher training for CHWs and TBAs.	Good and possible	<ul style="list-style-type: none"> The project will provide ongoing technical support and told for work for the teams. The project will conduct refresher training for CHWs and TBAs in iCCM, MN care and home visits. 	Chilobe/Stephen	On-going till 2014 August 2012
2.	Conduct additional planned training for NHCs to meet training coverage targets – and continue community mobilization support.	Good	<ul style="list-style-type: none"> The project will conduct training for the remaining 35NHCs in CAC plan together. 	Darwin	July 2012
3.	Continue joint supervision and support for data collection and use.	Possible	<ul style="list-style-type: none"> The project will continue to collaborate with and support Lufwanyama DHMT to conduct monthly joint supervision visits to the CHWs and TBAs. 	Stephen	Ongoing till 2014
4	Develop an approach to improving CHW coverage. This should include support for district training of additional CHWs – using the accredited national 6-week course. Selection criteria for CHWs will be important to ensure they are allocated to areas where they are needed; and apt to remain in posts.	There might prove difficult, as the focus has now shifted to training community-based providers (CHAs) for 1 year.	<ul style="list-style-type: none"> Hold meetings with MOH/MCDMCH to advocate for the training of additional CHWs. Leverage resources with partners such as ZISSP and other donors to support training for new CHWs Develop a selection criteria for CHWs to be trained. 	Chilobe Chilobe	August 2012 August 2012
5.	Review reasons for CCM drug stock-outs and	This good and achievable at	<ul style="list-style-type: none"> Hold monthly meetings with DHMT 	Stephen	On-going till 2014

	develop approaches to improving supply. Collaborate with the JSI/DELIVER to do a quick review of logistical barriers. Reinforce simple methods for taking local action – including teaching facility staff to use community register data to estimate CHW drug needs each month; and improving local ordering practices.	health center level. At national reviews more of health system strengthening including establishing the community HMIS	<p>at district and health center level to review gaps and barriers contributing to stock-outs</p> <ul style="list-style-type: none"> • Work with district therapeutic committee meeting to determine main barriers to drug and logistical supplies • Use the CHWs register as stock out tool to track and re supply the CHWs • Meet with JSI/Deliver to conduct a quick review of logistic barriers and develop ways of addressing these barriers. 	Stephen Bias Chilobe	August-October 2012 October 2012 September 2012
6	Develop an approach to improving management of the sick newborn at first-level facilities. This could include training of first-level staff in IMNCI, and improved clinical supervision. Collaborate with ZISSP to conduct training – using ZISSP resources.	This is good and achievable. ZISSP has a budget for training health workers in IMCI.	<ul style="list-style-type: none"> • Liaise with ZISSP to support training in IMNCI for 1st level staff at the health center • Participate in national and provincial IMCI TWG • Conduct monthly supportive supervision for health staff 	Chilobe Stephen	15 th October 2012 Ongoing till 2014 Ongoing till 2014
7	Improve quality of care provided by TBAs. 1) Adapt WHO/UNICEF community-based MNC guidelines (e.g., PNC Joint Statement for Home Visits) for local use – and use these to reinforce TBA refresher training; 2) Review feasibility of procuring and distributing newborn resuscitation equipment to TBAs in consultation with the DHMT.	This achievable and it is good. Save the Children is working with ZISSP in developing the newborn strategy and guidelines for Zambia. The equipping of TBAs with equipment might be seen as challenging the policy of encouraging health center delivery	<ul style="list-style-type: none"> • Launch the WHO/UNICEF Joint Statement on PNC Home Visits nationally • Support MOH/develop newborn framework for Zambia that includes community-based MNC • Using leveraged resource procure/source for newborn resuscitation equipment for the TBAs and health center staff 	Chilobe Chilobe Chilobe	December, 2012 August – November 2012 February, 2013
7.	Update community registers, forms and project indicators, based on field experience. Proposed changes are summarized in Annex 12. In addition, a monthly community register data	This is good and possible. The revision of project indicator will ensure that correct impact is reported.	<ul style="list-style-type: none"> • Work with the DHMT to update registers and forms for TBAs and CHWs • Update project indicators with LINCHPIN team • In consultation with DHMT develop a monthly community 	Bias Chilobe Bias	September – October 2012

	report, for use by the DHMT and other stakeholders, is proposed		register data report for use by the DHMT and other stakeholders		
8	Continue to build district and national capacity. Engage the DHMT to: address problems with CHW coverage and medicine supply; manage and use community register data; document lessons learned; and develop a strategy for handing over project-supported activities to the district. Continue efforts to inform national roll-out of iCCM and development of the community based MNC package – consider use of the district as a learning site for visits by national and other district stakeholders.	This good; however needs a proper plan owned by the district	<ul style="list-style-type: none"> • Conduct trainings for district in ICCM data • Develop a hand over plan for CCM in the district. • Incorporate CCM in the district plans • Conduct learning visit to Lufwanyama for other CCM districts/ stakeholders 	Stephen Chilobe/Stephen Stephen Chilobe	February 2013 February, 2013 October, 2012 March 2013

ANNEXES: Zambia Mid-Term Evaluation Report

ANNEX 1: Results Highlight Evidence Learning Brief – How Much Time Do CHWs Spend Delivering iCCM?

Background: The Child Survival and Health Grants Program’s “Lufwanyama Integrated Newborn and Child Health Project” (LINCHPIN) in Zambia aims to deliver integrated community case management (CCM) to sick children 0-59 months of age through teams of community health workers (CHWs) in an extremely remote, rural district (Lufwanyama) in Zambia’s Copperbelt Province. Zambia’s CHWs are volunteers with a six-week basic training. In many districts, including Lufwanyama, partners are introducing CCM with an additional six-day training for existing CHWs. Indeed, many countries commonly add intervention packages (most recently CCM and postnatal care) to existing CHW duties. The MTE of LINCHPIN provided an opportunity to develop and test a methodology to quantify how CHWs spend their time.

Methods: We asked five CHWs delivering CCM (one affiliated with Shimukunami Health Center and four with Mushingashi Health Center) to specify their CHW-related tasks and sub-tasks, and the frequency and duration of each. We pro-rated frequencies over one month and averaged ranges to derive sub-activity-specific time allocations per month. We applied estimates of the proportion of all curative care given to children under five to derive both scheduled and after-hours CCM curative care, to which we added follow-up visit time (travel and contact) to derive the total time allocated to CCM. We verified CHW health center work with the In-Charge Nurse. Apart from including travel time for health center meetings, we did not otherwise explore travel time; in no case did we specify preparation time.

Results: These literate CHWs (age range: 49-57 years) demonstrated varying facility to respond to this quantitative inquiry. All reported the same six main activities: (1) curative care for all ages; (2) community mobilization for health center outreach services (monthly combined antenatal care and under five clinic or twice yearly Child Health Weeks); (3) behavior change activities (door-to-door or group in various settings); (4) monthly meetings (as a TBA-CHW team, with Neighborhood Health Committees, or at health centers); (5) village water-sanitation inspections; and (6) health center duties (one day/week for mainly curative care and some counseling to prevent maternal to child transmission of HIV). CHWs claimed to work long hours (average hours/month: 176; range: 145-235). CHWs’ estimates of the proportion of all patients whom they treated in the community who were under five years of age varied widely (average: 57%; range: 40-75%), adding between 39-88 reported hours (average: 65) to their monthly work, or about a 60% increase in reported hours worked (average increase: 59%; range: 38-106%).

Discussion: In this pilot-test, CCM markedly increased the time CHWs reported working. LINCHPIN provided CHWs with bicycles to facilitate follow-up visits, so CCM travel time could have been even greater. The increase is both quantitative and qualitative because CHWs are continuously on call on weekends and at night. This method needs validating with diaries and/or direct observation. It is likely that values represent ceilings because self-reported work tends to be over-estimated and because a seasonal downward adjustment in work due to farming (about three months annually) was only measured for one CHW. However, these phenomena would influence both CCM and non-CCM activities, so might not impact the relative changes much. Nonetheless, program planners must be mindful of the costs of this life-saving strategy. We aim to further refine and test the methods.

ANNEX 2: List of Publications and Presentations Related to the Project

1. *Lufwanyama Integrated Neonatal and Child Health Project in Zambia (LINCHPIN)*. IMCI/iCCM Stakeholders Meeting. Protea Chisamba, Zambia, 1 March 2012.
2. *Zambia: Coordinating Roles and Connecting with Care*. USAID-Frontlines, May/June 2012.
3. “Effective access to case management – worse than we thought”. This paper has been approved for publication in a special iCCM supplement in the American Journal of Tropical Medicine and Hygiene in 2012.
4. “Measuring the structure, function and determinants of community-based “teams” delivering health care in rural Zambia” is being finalized for submission to a peer-reviewed journal.

ANNEX 3: Project Management Evaluation

This section reports on four management domains: (1) planning; (2) human resources and staff management; (3) logistics; and (4) technical support. The following details were aggregated from information obtained through in-depth interviews conducted with nine LINCHPIN staff members during the MTE and additional informal exchanges with five others. The evaluation team explored the evolution of these areas, noting challenges, responses to the challenges, and current efficiencies and/or deficiencies.

Planning Since its inception, and throughout the DIP process, Save the Children has forged a positive collaborative relationship with the Lufwanyama DHMT and district counterparts. The Acting District Health Officer participated in the DIP Workshop; and he and other district colleagues made substantial contributions to both the project work plan and M&E plan. These inputs resulted in a practical DIP document that satisfies the needs of the district as an early implementer of the national CCM program. It also has the flexibility to meet emergent needs within budgetary constraints. LINCHPIN engages actively in the district's planning cycle, and joint activities figure prominently in its annual action plan. Save the Children also supports National Child Health Weeks in Lufwanyama with vehicle, driver, and community mobilization (CM).

The area of CM was a gap in the DIP document; it was neither well elaborated nor planned. Post-DIP engagement of SC's Africa Capacity-Building Advisor Gail Snetro has filled the CM gap by providing technical leadership and assistance to strengthen CM. Ms. Snetro, who worked on the USAID-funded Health Communications Project (HCP) in Zambia, trained LINCHPIN community mobilizers in the Community Action Cycle (CAC) and worked with the team to develop a CM work plan and process indicators. Ms. Snetro also developed the teaming training package for CHW-TBA teams. To add to LINCHPIN's CM capacity, its new Deputy Project Manager came to SC just a little over a year ago, also with HCP experience. The 80+ NHCs trained in the CAC are now able to develop their own action plans based on "problem trees" and make meaningful inputs into the action plans of the health facilities and the district.

Human resources and staff management Both the original Project Manager and Deputy Project Manager have been replaced since LINCHPIN began. The project's technical advisors, LINCHPIN, staff, and SCS senior management all agree these changes have been positive. Within the past six months, the project lost one community mobilizer, and this position was recently replaced.

LINCHPIN staff members interviewed reported to be generally satisfied, and sometimes excited, by with the work they are doing. Several said they had "no complaints." Most reported feeling valued by management and free to contribute their opinions and suggestions. All said they felt "supported" by Save the Children/Sweden management, both in Kalulushi and in Lusaka.

SCS encourages its employees to pursue higher education and grants salary advances to help them fund it. Several of the staff members are studying for degrees or diplomas, either online or at local schools or colleges; a couple are working on MPH degrees. The LINCHPIN Program Manager was recently awarded her MPH degree from the University of the Western Cape in

South Africa. In addition, a number of staff members reported having completed multiple USAID Global Health e-Learning certificates in CCM topics, newborn care, and cross-cutting interventions.

Calendar year 2012 is marked for transition of all SC Africa country offices to Save the Children International (SCI). SC in Zambia has not been a “Unified Presence” country and the two currently co-located SC members (SCS and SC Norway [SCN]) will transition to SCI with new personnel policies and procedures. Apparently, all current staff will be invited to reapply for their jobs, including the country office senior management team. This change is being carefully managed, and staff say are being kept informed. Notwithstanding, stress levels are high, and some staff members described their “dread” at the upcoming changes. They seem particularly worried that the incumbent country office director may change, which they feel would be a heavy blow to the Zambia operation¹.

The new Deputy Project Manager (in position for just over a year), who oversees day-to-day operations in Kalulushi, has made a documented effort to strengthen teamwork. He introduced mechanisms (such as “employee of the quarter”) to appreciate staff contributions and recognize excellent performance. Staff members interviewed reported good morale and cohesion in the Kalulushi office, and agreed that collaboration and coordination are both good.

Logistics The project’s major logistical challenge is drug supply and this is discussed in more detail in Section 1.1.1. A second logistical challenge is transport, a shortage of vehicles exacerbated by poor road conditions, seasonal impassability, and considerable distances to health centers and communities. The Mushingashi Health Center, for example, is a 4-5 hour drive from Kalulushi. LINCHPIN itself has only two vehicles that it shares with other complementary programs running out of the Kalulushi office. The team makes every effort to ensure efficiencies in vehicle use. The Kalulushi office is expecting delivery of a new vehicle to cover recently-introduced sponsorship activities; and an older vehicle donated by BU will be repaired and refitted for short trips in Kalulushi and between Kalulushi and Kitwe.

Technical support Staff members interviewed reported that both technical and administrative support have been strong, with one major exception. Early in the project, LINCHPIN lost its technical advisor (consultant) for newborn health. It had been planned that he develop the training curriculum and lead the TBA refresher-training in essential newborn care and PNC. Due to personal problems, the consultant did not deliver the training materials on time and was not available for the training. The initial TBA refresher-training had to be cobbled together, using outdated government training materials. It moved ahead without a strong newborn care/PNC component. To remedy this deficiency, LINCHPIN plans to hold a makeup refresher training for TBAs, with funding from Crowne Philanthropies, prior to the end of calendar year 2012. LINCHPIN will train using the UNICEF/WHO community newborn care manual being adapted at the national level in an initiative led by Save the Children.

Technical advisors (Karen Waltensperger, David Marsh, Gail Snetro) make scheduled periodic field visits to assist with program implementation, M&E, community mobilization, and teaming

¹ In fact, this fear on the part of the staff was realized. A new SCI Country Director was appointed and the SCI operation in Zambia is scheduled to “go live” 1 October 2012.

training. Their visits align with the OR timeline, when possible. For the most part, technical assistance has been well-timed and described by LINCHPIN staff members as “useful,” “appreciated,” and “motivating.” Technical Backstop Karen Waltensperger supports the project from South Africa at 20% level of effort (LOE); David Marsh supports M&E and OR and liaises with Boston University at 10% LOE; Gail Snetro supports community mobilization and teaming training at 10% LOE.

In order to represent Save the Children and LINCHPIN at the national level, the Project Manager is based in Lusaka. She visits the Kalulushi office at least monthly and communicates daily by telephone and email. She maintains major oversight over the budget, approves the pipeline of expenditures, and is responsible for overseeing the annual work plan. As LINCHPIN moves forward toward, it is important that the Project Manager maintain this close oversight, engage in frequent field visits, and redouble efforts to transfer successes and lessons learnt to the national level.

During the MTE, the LINCHPIN team discussed the need for additional technical expertise to assist in analyzing the drug supply problem. Save the Children is currently exploring alternative sources to access this expertise.

Principal lessons learned: Management.

1. Basing LINCHPIN’s Project Manager in Lusaka has given Save the Children access to a national-level “seat at the table” for policy dialogue, harmonization of tools and materials, and transferring innovations and lessons learnt. Save the Children was invited to lead the development of Zambia’s national newborn care strategy.
2. Leveraging other donor funding for complementary programming in Lufwanyama District has boosted Save the Children’s credibility with the community and strengthened its partnership with the DHMT.
3. Close coordination and joint planning with the DHMT has ensured district ownership of the integrated neonatal and child health program.
4. Partner coordination is critical to implementation, both at national and district levels.
5. Promoting and facilitating staff development has motivated LINCHPIN team members and increased capacity, energy, and dedication.
6. Teamwork and communication have been enhanced by Save the Children’s “open door” management policy.

ANNEX 4: Workplan Table: LINCHPIN (CSHGP) 2009- 2014

Objectives/Activities	Objective(s) Met	Activity Status
Start up	Yes	
Staff recruited		
Briefings for the national, provincial, district level stakeholders		Complete- happened during the DIP process
Detailed implementation planning with stakeholders		Complete
Partnership agreement signed with DHMT and MOH		Complete
DIP review in Washington		Complete
Project Monitoring and Evaluation	Yes	
Activity 1: Baseline assessment developed		Complete
Activity 2: formative research		Complete
Activity 3: baseline population based survey		Complete
Activity 4: Health facility assessment		Complete
Activity 5: policy and strategy review		Complete
Activity 6: baseline assessment results disseminated		Complete- results disseminated during the DIP
Activity 7: process documentation		On going
Activity 8: mid-term evaluation		Complete – awaiting final report
Activity 9: end line population based survey		To be conducted in 2014
Activity 10: final evaluation		Planned for 2014
Activity 11: routine data collection		Ongoing- data collected using registers – July 2011 – April 2012 data available
Implement Operational Research	Yes	
Activity 1: questions finalized		Complete
Activity 2: protocol developed		Complete
Activity 3: data collection tool developed		Complete
Activity 4: data collection study#1(teaming)		On-going
Activity 5: data cleaning and analysis		On-going
Activity 6: documentation and dissemination		On-going
Activity 7: data collection study #2 (training: funding permitting)		Not yet conducted
Activity 8: data collection study#3 (supervision: funding permitting)		Not yet conducted
Increased access and availability of services	Yes	
Activity 1: Review adapt, develop training materials	Yes	Complete- the training materials for the newborn where adapted from various resources including the WHO newborn guidelines. The CCM trainings where adapted from the MOH/WHO/UNICEF training guidelines.
Activity 2: Train 8 master trainers in CCM	Yes	Complete (planned to train 8 master trainers. 07 were trained one participant did not participate
Activity 3: Train 85 CHW in CCM and ENC	Yes	Complete (trained 88/88). 85 are certified CHWs while 3 are not.
Activity 4: Refresh 120 TBAs in ENC	Yes	Complete- refreshed 111 TBA, 9 had dropped out at the time of the training

Objectives/Activities	Objective(s) Met	Activity Status
Activity 5: Support national mark days	Yes	Complete- the project supported all the child health week activities for immunization and growth monitoring for children below the age of 5. Other national days include support the commemoration of national malaria days. Leveraged resources and supplied DHMT with Vitamin A, Mebendazole tablets during the child health weeks. Fuel to DHMT for social mobilization
Activity 6: Train 150 TBA/CHW/NHC in teaming	Yes	Complete (the project trained 8 trainers of trainers in teaming who in turn trained 184 TBA/CHW/NHC in teaming
Improved Quality of Services	Yes	
Activity 1: refresh 20 nurses in TBA supervision		Complete- at the time of training the DHMT establishment was 15 health workers and they were all trained in supervision of TBAs in providing maternal and newborn care
Activity 2: train 22 nurses/EHT in CCM supervision		Complete- 17 CO/EHT from the health centers and 4 from the DHO trained in supervision of CHWs in CCM. At the time of training this was number available for the training
Activity 3: medication and supplies monitored		Ongoing- Developed drug availability and stock out form to monitor drug supplies. Advocated for the supply for drugs for CCM to the district.
Activity 4: supportive supervision facilitated/documentated		Partially complete and ongoing- CHW and TBAs receive routine supervision conducted at least once a month. Mentoring check list developed and rarely used by health workers for observed mentorship.
Increase demand to quality services	Yes	
Activity 1: community mobilization officer and 3 community mobilizers trained as trainers in CM/BCC		Complete- 1 community mobilization officer and 4 mobilizers trained in community mobilization (Community Action Cycle) and messaging. BCC messages on maternal , newborn and child health developed and distributed
Activity 2: 135 NHCs trained in CM/BCC		Partially complete- 80 of the 118 identified NHC trained in community mobilization. 38 are yet to be trained.
Activity 3: Lufwanyama District center of excellence- TO BE DETERMINED		Not done- to be determined
Activity 4: Participation in national technical working groups, strategy meetings		Complete –ongoing- Save the children sits on the child health technical working group and the interagency task force for health. Lufwanyama recognized as one of the CCM districts
Activity 5: District/provincial planning cycles engaged		Partially complete The Linchpin project is now part of the Lufwanyama district planning cycle. DHMT budget includes line item(s) for CCM. The provincial plans are yet to include CCM in the plans and budgets
Activity 6: Monthly skills building meetings with community Mobilizers	Yes	On-going
LINCPIN national dissemination meeting	No	To be held at end line – preliminary findings and experience could be included

ANNEX 5: Rapid CATCH Table (if Mid-Term KPC performed)

N/A

ANNEX 6: Mid-Term KPC Report (if performed)

N/A

ANNEX 7: Community Health Worker Training Matrix: LINCHPIN Project

Project Area	Type of Provider	Official Government CHW or Grantee Developed Cadre	Date of Training	Paid or Volunteer	Number Trained Over Life of Project	Sex	Focus of Training
Lufwanyama District	Trained Traditional Birth Attendants	TBAs	31 st May -25 th June 2010 (3 groups)	Volunteers	111/118	F/111	Refresher- Focused ANC, ENC NRP, PNC and maternal and newborn danger signs
Lufwanyama District	Nurses and Midwives	Government	29 th June-1 st July 2010	Paid	15/20	F/14 M/1	Training of supervisors- Supervision of TBAs in providing maternal and newborn care
Lufwanyama District	Health workers, Linchpin staff	Government and Project staff	13 th -18 th September 2010	Paid	7/8	F/4 M/3	Training of trainers- Skills in training CHWs in CCM of diarrhea, pneumonia, malaria and neonatal sepsis
Lufwanyama District	Male and Female Community Health Workers	Community Health workers	20 th -25 th Sept 2010 and 26 th Oct-2 nd Nov 2010	Volunteers	85/85 – certified CHWs 3/3 – non-certified CHWs	F16 M/58	Training in CCM-Assessing and managing sick children, identifying danger signs and making referrals
Lufwanyama District	LINCHPIN staff and District EHT	Government and Project staff	October 2010	Paid	8/4	F/3 M/5	Training of trainers- Community mobilization and BCC
Lufwanyama District	Environmental Technicians, Clinical Officers and Nurses	Government and Project staff	22 nd -25 th February 2011-	Paid	17/22	F/8 M/9	Training of supervisors- Supervision of CHWs trained in CCM
Lufwanyama District	LINCHPIN staff, District EHT and	Government and Project staff	16 th -18 th March 2011	Paid	8/8	F/3 M/5	Training of trainers- Facilitation skills in training teams in teaming concept

Project Area	Type of Provider	Official Government CHW or Grantee Developed Cadre	Date of Training	Paid or Volunteer	Number Trained Over Life of Project	Sex	Focus of Training
	Maternal and Child Coordinator						
Lufwanyama District	Community Health Workers, Traditional Birth Attendants and Neighborhood Health Committees	CHW	12 th April to 26 th May 2011 (7 groups)	Volunteers	46/46 Teams of four (188/188)	F/82 M/102	Training-Teaming-Working as a team to provide continuum care of maternal newborn and child, conduct joint PNC visits and identify danger signs and make prompt and appropriate referrals
Lufwanyama District	Clinical Officers, Nurses, EHTs	Government	2 nd Nov 2011	Paid	30/30	F/15 M/15	Orientation-CCM data Collection
Lufwanyama District	Community Health Providers	Leaders NHCs, SMAGs Male motivators, Chief retainers	23 rd -25 th August and 30 th Aug -1 st September 2011. (2 groups)	Volunteers	72/72	F/30 M/42	Training- Leadership skills, communication, community mobilization, resource mobilization, conflict resolution
Lufwanyama District	Safe motherhood action group members	SMAG members	5 th -10 th December 2011	Volunteers	23/26	F/22 M/1	Training- To provide skill to SMAGs in order to sensitize the community to issues related to pregnancy, child birth and child health.
Lufwanyama District	CHWs and TBAs and NHCs	CHW/TBA/NHC	19 th -20 th December 2011	Volunteers	102/102	F/53 M/49	Refresher- PNC, ENC and continuum of maternal and newborn care

ANNEX 8: Evaluation Team Members and Titles

1. Dr. John Murray – External Consultant, Team Leader
2. Ms. Karen Z. Waltensperger – Senior Advisor, Health-Africa (Technical Backstop), Save the Children
3. Dr. David Marsh – Senior Child Survival Advisor, Save the Children
4. Dr. Chilboe Kambikambi – Project Manager, Save the Children/LINCHPIN
5. Mr. Stephen Filumba – Deputy Project Manager, Save the Children/LINCHPIN
6. Ms. Gail Snetro – Senior Africa Area Capacity Building Advisor for Health, Save the Children
7. Ms. Charity Kumalinga Banda – Training Coordinator, Save the Children/LINCHPIN
8. Mr. Paul Chikwanda – Environmental Health Technologist, Luftwanyama District Health Office
9. Mr. Bias Sichamba – Monitoring and Evaluation Officer, Save the children/LINCHPIN
10. Mr. Michael Waitolo – Data Manager, Save the Children/LINCHPIN
11. Mr. Darwin Nkonde Chatyoka – Community Mobilization Officer, Save the Children/LINCHPIN
12. Mr. Amon Sakala – Teaming Data Collector/Data Entry Clerk, Boston University
13. Ms. Grace Nkatwe – Community Mobilizer, Save the Children/LINCHPIN
14. Dr. Davidson Hamer, Zambia Center for Applied Health Research and Development, Boston University

ANNEX 9: Evaluation Assessment Methodology

1. Summary of evaluation process

The mid-term evaluation was designed to review progress towards achieving project objectives; and to determine to whether mid-term adjustments are needed based on experience with implementation. The mid-term evaluation team included an outside evaluator, SC staff from the region and headquarters, a representative from the DHO, and local SC project staff. Evaluation team members are listed in Annex 8.

The evaluation was conducted between May 22 and June 6, 2012. Interviews with district and provincial staff were conducted on May 23 and 24. Health facilities in the district were stratified by geographic area and facilities sampled randomly from each area. A few facilities that were remote and difficult to reach in the time available were excluded. Three sub-teams were formed for field visits. Teams visited three health centers on May 25 (Mibenge, Chantete and St. Josephs), two health centers on May 28 (Mulubale, Bulaya), three health centers on May 29 (Chinemu, Mibila, Shimukunami) and three health centers on May 30 (Mukutama, Fungulwe and Mushingashi). A total of 11 health facilities were visited. At each health facility, interviews were conducted with facility staff. In addition, at least two CHWs and TBAs working the catchment area of the facility were randomly selected and interviewed – an attempt was made to interview both a teamed and an un-teamed worker at each facility. In addition, one NHC was selected randomly from the catchment area of each facility and interviews conducted with two NHC members; and one caretaker of a young child was randomly selected from a CHW or TBA register, and interviewed at home. Interviews with central level informants were conducted on June 4 and 5.

The mid-term evaluation team met at the beginning of the evaluation to review responsibilities of team members, collect documents, sample facilities and to develop the schedule for field visits and key informant interviews. The team met regularly during the evaluation process to review findings and monitor progress. All findings were discussed and synthesized by the evaluation team. A final summary of main findings and recommendations was reviewed and discussed with the IMCI Technical Working Group and with a representative of the USAID HPN section on June 6, 2012. Following these meetings evaluation findings and recommendations were further revised and finalized. Topic guides were developed by the lead evaluator, adapted for local use and used by field teams to guide interviews with key informants.

2. Summary of evaluation methods

Four principal methods were used for the evaluation:

- 1) Review of available data including:
 - 30-cluster HH survey (baseline)
 - Health facility assessment (baseline)
 - Operations research household survey and qualitative assessment data
 - CHW and TBA community register data for the period July 2011 – April 2012

2) Document review – including:

- DIP
- Annual Reports and OR reports
- Project strategies, training materials, health education materials and other project documentation
- Community registers

3) Field visits to 11 health facilities and communities in the catchment areas of these facilities, and in-depth interviews conducted with health facility staff, CHWs and TBAs (teamed and unteamed), NHC members and caretakers of young children.

4) In-depth interviews with partners and stakeholders at the district, provincial and national level.

3. Key informant interview guidelines

What is the purpose of key informant interviews?

Key informant interviews ask the question: “How well have program activities been implemented, and what are the barriers to effective implementation?”

Key informant interviews provide qualitative data from caretakers of children, community leaders and groups, CHWs and TBAs, facility-based health workers and district staff. They provide information about difficulties caretakers face in accessing services or information in communities. They may help identify problems CHWs and TBAs have in reaching communities they serve and of completing their tasks. They may also provide ideas for making improvements that will improve coverage.

Field interviews can help:

- Explain what is working and not working
- Identify barriers to improving program performance
- Explore reasons for and solutions to problems

Who should be interviewed?

Key informants for the mid-term evaluation could include:

- National staff – Maternal, newborn and child health program staff, Child Health Technical Working Group members
- Provincial staff – PHO or PHMT
- District staff – medical officer, supervisors, DHMT members
- Facility-based health workers who see mothers, newborns and children at health facilities
- Midwives
- CHWs and TBAs who have been trained – both in an out of teams
- Caretakers of young children
- Key members of communities such as NHC members, SMAG members and health center committee members and village leaders.

How many health workers, CHWs, TBAs or caretakers should be visited?

Key district staff, as well as staff involved with operations research can be interviewed at the district. Two teams will have 4 days for field visits. If we assume that each team can visit one health center or health post and the catchment area of that facility each day – then a total of 8 facilities and catchment areas be visited. In each visited area, consider conducting:

- An interview with at least four facility staff– nurse, nurse-midwife or clinical officer
- An interview with one CHW/TBA teams, and one un-teamed CHWs and TBAs
- An interview with one caretakers of children 0-11 months of age
- An interview two community leaders that are part of the NHC, SMAG or other relevant informants, if available.

How should key informants be selected?

Randomly select health facilities

Assume three MTE teams. Assume that each MTE team, except one, can visit four facilities in the time available – for a total of 11. Stratify the 17 facilities in the district into two or three logical categories geographic area. Once facilities have been listed – decide whether any need to be excluded – the most important reason for excluding is usually inaccessibility in the available time. From the final list of facilities randomly select two or three facilities in each stratum – depending on the number of strata and the total number of facilities needed.

At each facility, MTE teams will conduct interviews with health workers responsible for seeing children and newborns - also an interview with a nurse-midwife responsible for deliveries at the facility, if available. Ideally facilities will not be notified in advance – but if they do have to be notified, they should not be otherwise ‘prepared’ for the visits. It is important to try to get an idea of what is really happening in the field.

Randomly select CHW/TBA/NHCs

Each MTE team will visit the randomly selected facilities. Each health facility has a number of CHW/TBA teams, un-teamed CHWs and TBAs, and NHCs in its catchment area. Make a list of the total number of teams, un-teamed CHWs and TBAs, and NHCs in the catchment area of the facility. This list can be stratified into two categories – close to the facility (say within 1-2 miles) and more distant from the facility (more than 1-2 miles). Once the list is complete, make any exclusions, if necessary (possible reasons for exclusion: team members not available on the dates of the visit; geographically very inaccessible; high levels of NGO activity which make them unusual). Then randomly select a team from each stratum (2 CHW/TBA teams), and an un-teamed CHW and TBA from each stratum.

The selected two CHW/TBA teams, un-teamed CHW/TBA pairs and selected NHC members will be visited in the community – they will need to be notified. Alternatively they could come to the facility for interviews. In-depth discussions would then be held with CHWs, TBAs and

NHC members on the day of the visit. A focus group discussion with the NHC all together could also be done.

Randomly select community informants:

Community informants will ideally also be randomly selected. This can be done in communities. A possible way to do the selection would be:

Caretakers of young children. List women who have delivered in the previous six months from the list in the community register of the CHW/TBA team that has been randomly selected. Randomly select two women from the list. Ask the team to help find the women and arrange for them to meet for a short interview. If a woman is not available, randomly select another woman from the list.

Other community informants. Select NHC members, SMAG members or other key local leaders from the community of one of the randomly selected teams. Ask the team to help find these people for a short interview.

How should interviews be conducted?

It is important that the interviewer does not prompt answers and that they allow informants to express their opinions. Caretakers of young children may respond better to women interviewers. Interviews should all be conducted with the informant alone, without other health staff, or community members present – to ensure that they do not influence responses. Interview topic guides are a way of guiding the discussion but are not a questionnaire. The questions do not have to be asked in any particular order, but the main issues should be covered – responses are noted in a separate notebook.

What preparations are needed?

Key preparations include:

- Deciding how to select key informants in each district;
- Deciding on the composition of interview teams;
- Making logistical arrangements: vehicles, fuel, per diems;
- Contacting district staff in advance if necessary;
- Adapting interview guides for local use; and
- Reviewing interview guides with team members to ensure that they are clear on how to complete them.

Introducing Key Informant Interviews

- Introduce yourself and explain that the interview is to find out about the maternal, newborn and child care program.
- Explain that all responses are anonymous and do not record the name of the respondent.
- Find a place away from others to ensure that respondents can answer without interference or the feeling that they are being observed or judged.
- Explain that you are asking questions about pregnancy, delivery, newborns and children. Newborns are babies between birth and 28 days of age.
- Explain that there are no right or wrong answers. You would like the respondent to answer questions based on his or her own experience and as honestly as possible. You are interested in his or her experience and opinions, so that the program is made better. If something is not working well, or if there are problems, then these should be mentioned. If something is working well, and there are no problems, then these should be mentioned too.
- If there is anything else that is of concern to the respondent, that is not raised in the interview, they are welcome to express these other concerns.

Record responses in a separate notebook

Record:

- Health facility/community;
- Category of respondent (CHWs, TBAs, NHC member, Nurse, Clinical Officer, etc.);
- Name of the respondent: facility-based staff, CHWs and TBAs;
- Topic being discussed; and
- Responses to the topic.

Remember: Topic guides can help introduce and guide the discussion. There may be other issues or questions that you would like to raise as part of this discussion.

Topic Guide – Implementing integrated CCM

Suggested Respondents

DHMT members, district medical officer/supervisors
Health workers based at HCs and HPs
Community health workers

Topics for discussion

- *District or Health Facility.* Is a community health worker training plan available for the district? What fraction of CHWs have not been trained? Why has training not taken place? What are the barriers to getting training done? Are you aware of all the training done by the project?
- Is there enough skills practice included in the training? Is there anything about the training that you would do differently?
- Do you think implementation of CCM in this district has made a difference to care provided for children? If so, why? If not, why not?
- Is it difficult for CHWs to manage sick children? What are the reasons for these difficulties? Are there parts of this district where sick children may be difficult to reach? What would you do to improve the ability of community workers to manage all children?
- Are the CHW recording forms difficult to complete? Have forms been available? Is all the information on the forms useful? Are the data used by CHWs, health facilities or district staff to make decisions? Is there anything you would do to make the forms easier to complete?
- Do CHWs/TBAs communicate frequently with health centers in their area? If yes, why? If not, why not? Is there anything you would do to improve links between health facilities and CHWs/TBAs?
- Do you think CCM is sustainable in the long term? Is there anything you would do to make it more likely to be sustainable?
- For CHWs: What other community based packages are you delivering (ART/HIV/PMTCT, home based care, CTC- Community Therapeutic Care, immunizations, TB/DOTS, surveillance, water and sanitation, family planning)? What proportion of your time do you spend on CCM? Are you able to see all sick children? How do you manage/organize your schedule? How much of your time do you spend at the facility? Do you reside in your catchment area? If not, why not?

Topic Guide –Availability of essential supplies for CHWs delivering CCM

Suggested Respondents

District medical officers/supervisors
Health workers based at HCs and HPs
Community health workers/TBAs

Topics for discussion

- Have stock-outs/lack of availability of essential supplies for CCM a problem in the last 3 months. If so, which supplies have been in short supply?

Consider:

- ✓ ARI Timer
- ✓ MUAC
- ✓ Amoxicillin
- ✓ Zinc
- ✓ ORS
- ✓ ACTs
- ✓ RDTs
- ✓ Job aids (sick child recording form)
- ✓ CCM chart booklet
- ✓ Forms and registers
- ✓ Bicycles

- What are common reasons for stock outs in your area?

Consider:

- ✓ Financial resources available;
- ✓ Provision of supplies from the central level;
- ✓ District re-ordering and distribution practices;
- ✓ Facility-level ordering or distribution practices;

- What are the main problems with supply of essential medicines and supplies, from your point of view? Have any of these problems been solved by implementation of the CCM package?
- What are possible solutions to supplying essential supplies, from your point of view?

Suggested Respondents

District supervisors
Health workers based at HCs and HPs
Community health workers/TBAs

Topics for discussion

- *District/health facility staff.* What proportion of supervisors have been trained in supervisory skills for CHWs implementing CCM and TBAs? Has this improved in the last year? Is more training needed?
- Have all planned visits in the last 6 months been conducted? Has this changed in the last 2 years? What are the most important reasons that supervision visits do not take place? For supervisors: Do you have a schedule for supervisory visits? Do you do joint supervisory visits with other program staff? Do you think that supervision is well coordinated with other programs working in the community?
- Do supervisors use integrated checklists? Do checklists work well? What are the problems with using checklists?
- Do supervisors usually conduct observations of practice? If not, why not?
- Are any data available on how well CHWs are practicing key CCM tasks? What is the impression of the quality of CCM, based on supervisory visits?
- Do supervisors usually give immediate feedback on their findings?
- Are records of findings and actions to be taken, left at the facility or with health workers?
- Do supervisors usually follow-through with actions they have promised?
- Are supervisors generally supportive? What problems and successes have you seen?
- What are the main problems with supervision, from your point of view?
- What are possible solutions to supervision problems, from your point of view?
- For CHWs/TBAs: How many times have you been supervised in the last three months? What does the supervisor supervise you on? If a newborn or child is sick and there is a health problem that you can't solve, who do you go to for help – and how do you contact them?

Suggested Respondents

District supervisors
Health workers based at HCs and HPs
Community health workers/TBAs
NHC members

Topics for discussion

- *District/health facility staff.* Is a training plan for TBAs available? What proportion of TBAs have been trained? Are there any barriers to training in maternal and newborn care?
- Is there enough skills practice included in the training? Does the training provide key skills needed to manage women and newborns? Is there anything about the training that you would do differently? Are there any skills that you need that have not been provided?
- Are essential equipment and supplies needed for clean deliveries, essential newborn care and PNC available? Has the minimum package of supplies been defined? How are you supplies? Have there been problems with supplies? If so, what are the reasons for these problems?
- Are there any barriers to conducting home visits in the community? If yes, what are they? Are all women and newborns reached early after delivery? If not, why are women and newborns not reached? How could more women and newborns be reached?
- Do women in communities accept the advice of TBAs on postnatal care practices such as the need to give early breastfeeds, to dry and wrap the newborn, and to not bathe the newborn? If not, why not?
- Are more women aware of the need for ENC and PNC since activities began? Have attitudes towards pregnancy, delivery and care of newborns changed? What changes in attitudes have you seen?
- What are the most difficult local practices around the time of childbirth and in the early newborn period to change? Why is this so? Is there anything that can be done to improve practices, in your opinion?

Suggested Respondents

District medical officers/supervisors
Health workers based at HCs and HPs
Community health workers/TBAs
NHC members

Topics for discussion

- *District and Health facility staff.* Is a training plan for CHW/TBA/NHC teams available? What proportion of NHCs are included in teams? Are there any barriers to training in teaming skills?
- Does the training give all the skills required to work effectively in communities? Are there any areas where you feel you need more training? Is there anything about the training that you would do differently?
- Has the presence of teams made a difference to how newborns and children are looked after in communities? What are the main differences?
- What have teams done well? What have teams not done well? Are there good links between CHWs, TBAs and community members? Are home visits done jointly? Are all team members available when they are needed? Do team members have enough time to complete all required tasks?
- Are roles and responsibilities for CHWs, TBAs and NHCs clearly defined? What makes teams less likely to work? What makes teams work better? Would you recommend any changes to improve how teams operate?
- Are teams well accepted in villages? Why?
- Have teams received regular oversight or supervision from project and district staff? Is supervision adequate? Is more supervision or contact needed?

Topic Guide – Management of sick newborns and children

Suggested Respondents

District medical officer/supervisors
Health workers based HCs and HPs
Community health workers, TBAs
NHC members
Caretakers

Topics for discussion

- Do caretakers and families recognize danger signs for seeking care for the newborn in the period after childbirth? Do they recognize danger signs for seeking care for children? Are more sick newborns and children reaching health facilities in the last year? If not, why not? Can anything be done to change how well caretakers recognize danger signs?
- Are sick newborns and children taken to community health workers when they are sick? If not, where do they go first? Why do they go to this source first? What could be done to encourage them to seek care from community health workers first?
- Have there been any problems with the use of antimicrobials by community health workers? Do they give a complete course of medicines when they have to give them? Do they charge for medicines?
- Do caretakers referred to the health facilities always accept referral? If not, what are the reasons they do not go for referral? What could be done to improve their likelihood of going for referral?
- Has there been any improvement in availability of transportation for sick newborns and children who need urgent referral? What methods have been used in this district or community? Are other options available? What needs to be done to improve the availability of transportation?
- If a sick newborn or child is able to be taken to the facility, are they treated well/ correctly?
- Is it difficult for community health workers to follow-up sick newborns and children in the home after they have been treated? If yes, why is it difficult?

Topic Guide – Community Mobilization

Suggested Respondents

District medical officer/supervisors
Health workers based at HCs and HPs
Community health workers, TBAs
NHC members
Caretakers

Topics for discussion

- *District/health facility staff.* Have all NHCs in this district/health facility catchment area been trained in community mobilization for newborn and child health? If not, why not?
- Is the training useful? Does it give you skills that are useful? Is there enough skills practice included in the community mobilization training? Is there anything about the training that you would do differently?
- Have NHCs worked well? How have they been guided by the community action cycle? Are the NHCs active? Have they helped improve the management of newborns and children?
- What types of activities have been conducted by those who have been trained in community-mobilization? Has this been difficult? Are any resources or additional support needed to allow community activities to be conducted better?
- Are materials such as counseling cards and other job aids available for community education? If no, why are these not available?
- Have community action plans been developed? Have these plans been used? How have they been used? Are there any problems with the development of community action plans?
- Have all the key stakeholders in the community been trained in community mobilization – are there other groups or individuals who should be involved?
- What are the barriers to implementing effective community-mobilization? What would you do to ensure that it continue in the longer term?

Suggested Respondents

District medical officer/supervisors
Health workers based at HCs and HPs
Community health workers, TBAs
NHC members
Caretakers

Topics for discussion

- What are the most useful approaches to giving information about the newborn and child health in your experience? Are the materials available for health education/community mobilization adequate? Are other materials needed? What materials are needed?
- Do local partners provide support for community-based activities? If not, why not? Would you like more involvement of partners? Which partners should be more involved and how?
- Do you think there are adequate numbers of community health workers and TBAs working in the community? If not, why not? How many community health workers and TBAs are required? Do you think the selection process for community health workers and TBAs works well? Are the best people trained for these jobs? If not, what would you do differently?
- Have you had a problem with community health workers and TBAs leaving their jobs? What is done now to encourage them to continue working? Could more be done to motivate them to continue? What more would you do to ensure that they remain in their jobs?
- Are there individuals or groups in the community who could be providing information or services, but who are not being used? If yes, which individuals or groups do you mean? Why are they not being used? What could be done to use them better?
- Can all people in the community reach health facilities? What are the barriers to getting to health facilities? What would you do to increase access to health facilities in this area?

ANNEX 10: List of Persons Interviewed and Contacted During the Mid-Term Evaluation

No.	Partner/Organization	Names of individuals contacted
1	Luftwanyama District Health Office	Dr. X, District Medical Officer Dr. Nerbert Mwanza, Acting District Medical Officer
2	Copperbelt Province Health Office	Dr. Chanowa Ng'ambi, Provincial Medical Officer
3	Chantete Rural Health Center	Alice Malumani-Enrolled Nurse Jannet Mufumba – (TBA Chantete) Benike Kabende – TBA Kapila Catherine Kunda - NHC Kapila Pathias Mwape – CHW Chantete Alice Londaisha – TBA Chantete Maggie Chalwe – CHW Chantete Jenipher Lumatila – Kapila NHC Joseph Mutupa – NHC Vice Chairperson/Chief Induna Naomi Makwelelo–TBA Chantete Jonathan Ndhlovu –NHC Secretary 1 child caretaker
4	St. Josephs Health Center	Faith Tozeyana – CHW Supervisor (Nurse) Cecilia Mulenga – TBA Supervisor (Nurse) James Mokola – CHW, Mukweka Precious Kalima – CHW, Kakonge Lemmy Chikundo – CHW, Kashimoto Kennedy Muyaya – CHW, Kawama/Ntonkoshi Victoria Chirwa - TBA, Mukweka Faustina Mutebe – TBA, Kashimoto Eka Puma – TBA, Kawama/Ntonkoshi Lister Mandefu – TBA, Kakonge Elvin Muntemba, NHC Fridah Mumba, NHC 1 caretaker from Mukweka
5	Mibenge Health Center	E. Kakumba-NHC Member (Fipokola) Webby Mushitu-NHC Member (Mibenge) Daniel Ngalasiya-NHC Member (Mibenge) Stanley Chiti-NHC Member (Fipokola) Judith Samuzinga-TBA (Mibenge) Webby Kabombeka-CHW (Masasa2) Jean Mubika-TBA (Fipundu) Loveness Kalando-TBA (Kamupundu) Elizabeth Kafumo-CHW (Kamupundu) Sara Mabumba –NHC Member (Masasa) Cecilia Nkhalamu-NHC Member (Masasa) Nelly Mulambo-Caretaker (Kampundu) 1 child caretaker

6	Mukumbo Health Center	<p>Mulubale – Health Worker Evans Kombe – CHW Charity Chalwe – CHW Rachel Kalota – TBA Philis Chindinda - TBA Henry Bulaya-NHC Secretary (Kamakanga) Fredrick Kapenta-NHC Chairperson (Kamakanga) Cornelius Pensulo HCC Vice Chairperson General Nelson Mabomba-HCC Chairperson General Annie Makausu-NHC Secretary (Mukumbo) Latsely Mwansa-NHC Vice Chairperson (Mukumbo) Eliot Kalota-Chief’s Representative (Mukumbo) Paul Musole-Community Mobilizer (Save the Children) 1 child caretaker</p>
7	Bulaya Health Center	<p>Beston Chilufya-Environmental Health Technologist Humphrey Chilombo –Zambia Enrolled Nurse Rest Muleya-CHW Mary Tembo-TBA Stephen Kanyimbwa-CHW Janet Musonda-TBA Iwell Macheche-TBA Mevis Kasenga-Safe Motherhood Member Angelina Chipula-Safe Motherhood Member Liness Kaluba-Safe Motherhood Member Christine Mulenga-Safe Motherhood Member Sara Mulubwa-Safe Motherhood Member Ganess Nadazi-Safe Motherhood Member Osiya Kaputula-Safe Motherhood Member Eneya Champion-Safe Motherhood Member Joseph Salimono-NHS Member Francis Ukule-Ward Councilor 1 child caretaker</p>
8	Shimukunami Health Center	<p>Ruth Chibale – TBA Supervisor (Nurse/Midwife) Merari Chabinga – CHW Supervisor (EHT) Francis Nyoni – Community Mobiliser Finess Muke, TBA Lillian Chakawa, TBA Eunice Kamalungu, TBA Rose Chimankata, TBA Jeremiah Sitali, CHW Bwalya Sitali, NHC Member Ludiness Kolala, NHC Member Chris Lwembe – Chairman General Nelson Nsompeni - Secretary 1 Caretaker from Mpopo</p>

9	Chinemu Health Center	Godfrey Mwiinga-CHW (agro-settlement2) Rhoda Mukupa-NHC Member (agro-settlement1) Jonas Mukei-NHC Chairperson (Chinemu) Rhoida Mbofwana-TBA (Chinemu) Ruth Lemu-Chairperson General Emily Machishi-NHC (Steering committee) Cecilia Phiri-Chairperson Nutrition Support Group Bupe Nshimba-Health Worker
10	Mibila Health Center	Muzeya Mathews-CHW Grace Mulongoti-CHW/TBA/GM Rose Kafuta-TBA Brendah Kawina-CHW Dany Ilunga - Emmanuel Kamalanda– NHC Member Laban Kafisa – NHC Chairperson Derrick Mwepu- NHC Member John Kakinga – NHC Chairman General Ambrose Ntembeni – NHC Secretary Sara Kapungwe – NHC Member Domiya Muyeye – NHC Treasurer Sunday Simutowe – CHW
11	Mushingashi Health Center	Miriam Mutale – TBA Supervisor (Nurse/Midwife) Allason Kaluba – CHW Supervisor (Nurse) Hollies Chungu – Community Mobilizer Eneless Njema, TBA Gladness Chalata, TBA Christine Kakoma, TBA Iness Lupiya, TBA Rosemary Katuta, TBA Lessy Mukowenda, TBA Benson Mulusa, CHW Agrey Kyombela, CHW Oscar Chimankata, CHW Jackson Mwale, CHW Beatrice Mupaka, NHC 1 child caretaker
12	Mukutuma Health Center	Martin Kashila-Health Worker Moses Luli-CHW Mibenge Training Center (MFTC) Doris Manimani-TBA (MFTC) Crispin Lwayo-CHW (Longwani) Samuel Bukama-Chairperson General (Chilumba) Robina Chapashingwe-TBA (Longwani) Justina Mupashi-TBA (Kanyange) Samuel Kunda-Chief Retainer (Mukutuma) Elijah –NHC Member (Longwani)
13	Lumpuma Health Center	Evelyn Shajilwa – CHW

		<p>Nervy Shimukolofya- TBA Petronella Makausu – NHC Member Patson Munkupa-CHW Mavis Mazabe – TBA Elias Kalinda – NHC Chairman General Moureen Falanga – NHC Member Charity Kanyima – NHC Memeber Adrian Kabebe – NHC Member Winter Munkupa – NHC Member Paul Musole – Community Mobilizer Scriviner Saili-Clinical Officer General Catherine Mfune-Zambia Enrolled Midwife</p>
14	National MOH	<p>Dr. Vichael Silavwe, Chief of IMCI, MOH Dr. X</p>
15	WHO	<p>Dr. Olusegun A. Babaniyi, WHO Representative Dr. Mary Katepa Bwalya, National Professional Officer Child and Adolescent Health</p>
16	UNICEF	<p>Dr. Rogers Kamata Mwale, Health Specialist, Maternal, Newborn and Child Health</p>
17	ZISSP	<p>Dr. Nanthalile Mugala, Director of Technical Support Ms. Musanda Kaluba – Management Specialist Ms. Wendy Nyekele – Community Health Coordinator Ms. Mary Kaoma – Training Specialist</p>
18	JICA – SCHePS (Project for Strengthening Community-based Child Health Promotion System in Urban Areas)	<p>Shunsuke Suzuki, Chief Advisor Kaoru Ozeki, Assistant Resident Representative</p>

ANNEX 11: Project Data Form

Child Survival and Health Grants Program Project Summary

Oct-06-2012

Save the Children (Zambia)

General Project Information

Cooperative Agreement Number:	GHS-A-00-09-00013
SC Headquarters Technical Backstop:	Karen Waltensperger
SC Headquarters Technical Backstop Backup:	David Marsh
Field Program Manager:	Chilobe Muloba Kambikambi
Midterm Evaluator:	John Murray
Final Evaluator:	
Headquarter Financial Contact:	Carmen Weder
Project Dates:	9/30/2009 - 9/29/2014 (FY2009)
Project Type:	Innovation
USAID Mission Contact:	William Kanweka
Project Web Site:	www.savethechildren.org

Field Program Manager

Name:	Chilobe Muloba Kambikambi (Project Manager)
Address:	Save the Children 120 Kudu Road, Kabulonga Lusaka , Lusaka 10101 Zambia
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Alternate Field Contact

Name:	Petronella Mayeya (Assistant Country Director- Programs)
Address:	Save the Children 120 Kudu Road, Kabulonga Lusaka , Lusaka 10101 Zambia
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Grant Funding Information

USAID Funding: \$1,750,000	PVO Match: \$583,275
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General Project Description

Save the Children, a 2009 Innovation category grantee, is implementing the *Lufwanyama Integrated Neonatal and Child Health Project in Zambia* (LINCHPIN) in Lufwanyama District, Copperbelt Province, Zambia. Principal LINCHPIN partners are the Lufwanyama District Health Management Team (DHMT), and the Ministries of Health (MOH) and Community Development, Mother and Child Health (MCDMCH). The project goal is to decrease under-five mortality by increasing use of life-saving interventions through delivery channels that are accessible, available, high-quality, demanded and supported.

LINCHPIN's strategy is to support an integrated, community-based newborn care and community case management (CCM) package delivered through innovative TEAMS comprised of traditional birth attendants (TBAs) and community health workers (CHWs), supported by Neighborhood Health Committees (NHCs), linked to health facilities, and consistent with national plans and policies.

Project Location

Latitude: -12.91	Longitude: 27.36
Project Location Types:	Rural
Levels of Intervention:	Health Center Health Post Level Community
Province(s):	Copperbelt Province
District(s):	Lufwanyama District
Sub-District(s):	--

Operations Research Information

OR Project Title:	Feasibility and Effectiveness of an Integrated TBA-CHW Team on the Delivery and Use of Treatments for Infections among Children 0-59 Months of Age in Lufwanyama District, Copperbelt Province, Zambia
Cost of OR Activities:	\$199,424
Research Partner(s):	Boston University
OR Project Description:	"Teaming" is a common service strategy in high-income countries, especially in serious outcome settings, such as emergency wards and operating theaters. Health teaming, though not reported in low income countries, seems a sensible strategy to improve outcomes for vulnerable young infants. The LINCHPIN Project aims to train and deploy TBA-CHW teams to provide essential newborn and continuous curative care for infants 0-59 months of age in Lufwanyama District, Zambia, thus closing the gap for infants 0-2 months in the continuum of care.

The level of teaming achieved – both structurally and functionally – will be evaluated and the factors that influence it will be assessed. We will also use service statistics to measure (a) delivery of interventions by TBAs and CHWs before and after teaming training and (b) the association between teaming achieved and the delivery of interventions.

The findings will contribute to the scant teaming literature from low-income countries and, more importantly, may inform strategies to reduce newborn and young infant mortality in settings where TBAs and CHWs are policy-sanctioned.

Partners

Save the Children Sweden (Subgrantee)	\$844,320
Boston University (Subgrantee)	\$199,424
Lufwanyama District Health Management Team (Collaborating Partner)	\$0
Copperbelt Provincial Medical Office (Collaborating Partner)	\$0
Ministry of Health (Collaborating Partner)	\$0
Ministry of Community Development, Mother and Child Health (Collaborating Partner)	\$0

Strategies

Social and Behavioral Change Strategies:	Community Mobilization Interpersonal Communication
Health Services Access Strategies:	Emergency Transport Planning/financing Addressing social barriers (i.e. gender, socio-cultural, etc) Implementation in a geographic area that the government has identified as poor and underserved
Health Systems Strengthening:	Supportive Supervision Task Shifting Developing/Helping to develop clinical protocols, procedures, case management guidelines Developing/Helping to develop job aids Providing feedback on health worker performance Monitoring CHW adherence with evidence-based guidelines Referral-counterreferral system development for CHWs Community role in supervision of CHWs Coordinating existing HMIS with community level data
Strategies for Enabling Environment:	Create/Update national guidelines/protocols Advocacy for revisions to national guidelines/protocols Stakeholder engagement and policy dialogue (local/state or national) Advocacy for policy change or resource mobilization Building capacity of communities/CBOs to advocate to leaders for health
Tools/Methodologies:	Rapid Health Facility Assessment

Capacity Building

Local Partners:	National Ministry of Health (MOH) Dist. Health System Health Facility Staff Health CBOs Government sanctioned CHWs TBAs
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Interventions & Components

Control of Diarrheal Diseases (20%) - Hand Washing - Feeding/Breastfeeding - Care Seeking - Case Management/Counseling - Zinc - Community Case Management with Zinc (Implementation) - Community Case Management with ORS (Implementation)	IMCI Integration	CHW Training
Malaria (20%) - Training in Malaria CM - Access to providers and drugs - Care Seeking, Recog., Compliance - ACT - Community Case Management of Malaria (Implementation)	IMCI Integration	CHW Training
Maternal & Newborn Care (40%) - Recognition of Danger signs - Newborn Care	IMCI Integration	CHW Training HF Training
Pneumonia Case Management (20%) - Case Management Counseling - Access to Providers Antibiotics - Recognition of Pneumonia Danger Signs - Community Case Management with Antibiotics (Implementation) - Policy Advocacy for CCM of Antibiotics	IMCI Integration	CHW Training HF Training

Operational Plan Indicators

Number of People Trained in Maternal/Newborn Health			
Gender	Year	Target	Actual
Female	2010	63	
Female	2010		125
Male	2010		1
Male	2010	0	
Female	2011	75	
Female	2011		485
Male	2011		326
Male	2011	95	
Female	2012		110
Male	2012		50
Female	2013	26	
Male	2013	60	
Female	2014	0	
Male	2014	0	
Number of People Trained in Child Health & Nutrition			
Gender	Year	Target	Actual
Female	2010	35	
Female	2010		13
Male	2010		36
Male	2010	150	
Female	2011	65	
Female	2011		424
Male	2011		388
Male	2011	45	
Female	2012		30
Male	2012		85
Female	2013	91	
Male	2013	60	
Female	2014	0	
Male	2014	0	
Number of People Trained in Malaria Treatment or Prevention			
Gender	Year	Target	Actual
Female	2010		13
Female	2010	25	
Male	2010		36
Male	2010	50	
Female	2011		514
Female	2011	64	
Male	2011		393
Male	2011	45	
Female	2012		18
Male	2012		54
Female	2013	26	
Male	2013	60	
Female	2014	0	
Male	2014	0	

Locations & Sub-Areas

Total Population:

85,033

Target Beneficiaries

Children 0-59 months
Women 15-49 years
Beneficiaries Total

Zambia - SC - FY2009

15,136
18,537
33,673

Rapid Catch Indicators: DIP Submission

Sample Type: 30 Cluster				
Indicator	Numerator	Denominator	Percentage	Confidence Interval
Percentage of mothers with children age 0-23 months who received at least two Tetanus toxoid vaccinations before the birth of their youngest child	439	465	94.4%	3.0
Percentage of children age 0-23 months whose births were attended by skilled personnel	168	465	36.1%	6.2
Percentage of children age 0-5 months who were exclusively breastfed during the last 24 hours	110	134	82.1%	9.2
Percentage of children age 6-23 months who received a dose of Vitamin A in the last 6 months, card verified or mother's recall	293	329	89.1%	4.8
Percentage of children age 12-23 months who received a measles vaccination	163	191	85.3%	7.1
Percentage of children age 12-23 months who received DTP1 according to the vaccination card or mother's recall by the time of the survey	176	191	92.1%	5.4
Percentage of children age 12-23 months who received DTP3 according to the vaccination card or mother's recall by the time of the survey	164	191	85.9%	7.0
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	20	178	11.2%	6.6
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	93	126	73.8%	10.9
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	48	72	66.7%	15.4
Percentage of households of children age 0-23 months that treat water effectively	196	465	42.2%	6.3
Percentage of mothers of children age 0-23 months who live in households with soap at the place for hand washing	279	465	60.0%	6.3
Percentage of children age 0-23 months who slept under an insecticide-treated bednet (in malaria risk areas, where bednet use is effective) the previous night	237	465	51.0%	6.4
Percentage of children 0-23 months who are underweight (-2 SD for the median weight for age, according to the WHO/NCHS reference population)	93	408	22.8%	5.8
Percentage of infants and young children age 6-23 months fed according to a minimum of appropriate feeding practices	171	329	52.0%	7.6
Percentage of mothers of children age 0-23 months who had four or more antenatal visits when they were pregnant with the youngest child	255	463	55.1%	6.4
Percentage of mothers of children age 0-23 months who are using a modern contraceptive method	217	465	46.7%	6.4
Percentage of children age 0-23 months who received a post-natal visit from an appropriately trained health worker within two days after birth	21	77	27.3%	14.1

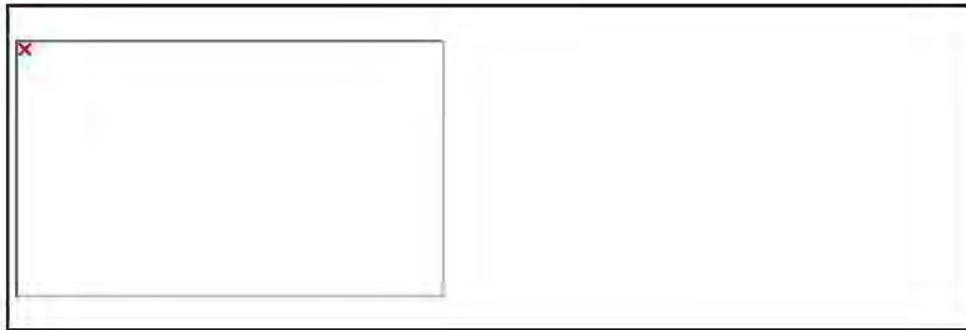
Rapid Catch Indicators: Final Evaluation

Rapid Catch Indicator Comments

Sample Size and Sampling

The sample size calculation was based on the least prevalent condition among the key outcomes (indicators) which is treatment for pneumonia. It was assumed that 10% of children aged 0 – 23 months will have a history of cough and fast and/ or difficult breathing (pneumonia) during the last two weeks. The proportion of these children who received antibiotic treatment was 38.8% from the Zambia DHS 2007. The target for this project is to increase the proportion of children receiving antibiotic treatment to 70%. With 80% power at 95% confidence intervals (CI), we will need to enroll 45 children with fast/difficult breathing. Since the prevalence of fast/difficult breathing in children aged 0-23 months was estimated at 10%, we needed to recruit 450 women with children aged 0-23 months in the baseline survey. This sample size calculated from the formula below (Figure 1) would give a high level of precision for the other outcomes since the prevalence of these conditions is higher.

Figure 1



The sample size was recruited from all of the 19 HF catchment areas proportional to their population. In each HF catchment area one or more villages were randomly selected to ensure that no more than 15 households were enrolled from each village.

In each village, households with mothers with young children (0-23 months) were selected systematically. The center of the village was identified with the help of the village headman and a bottle was spun to determine in which direction to select the first house. An integer "n" from 1-9 was randomly selected by the data collector and the nth house along the ray was selected as the first house. The next house selected was the one with the door nearest to the previous selected house and this continued until the number of survey participants for the village which was 15 was attained. If the selected household did not have a mother with 0-23 month old child, it was replaced by going to the next household. If the household has more than two mothers with a child of this age, the first to be introduced will be recruited.

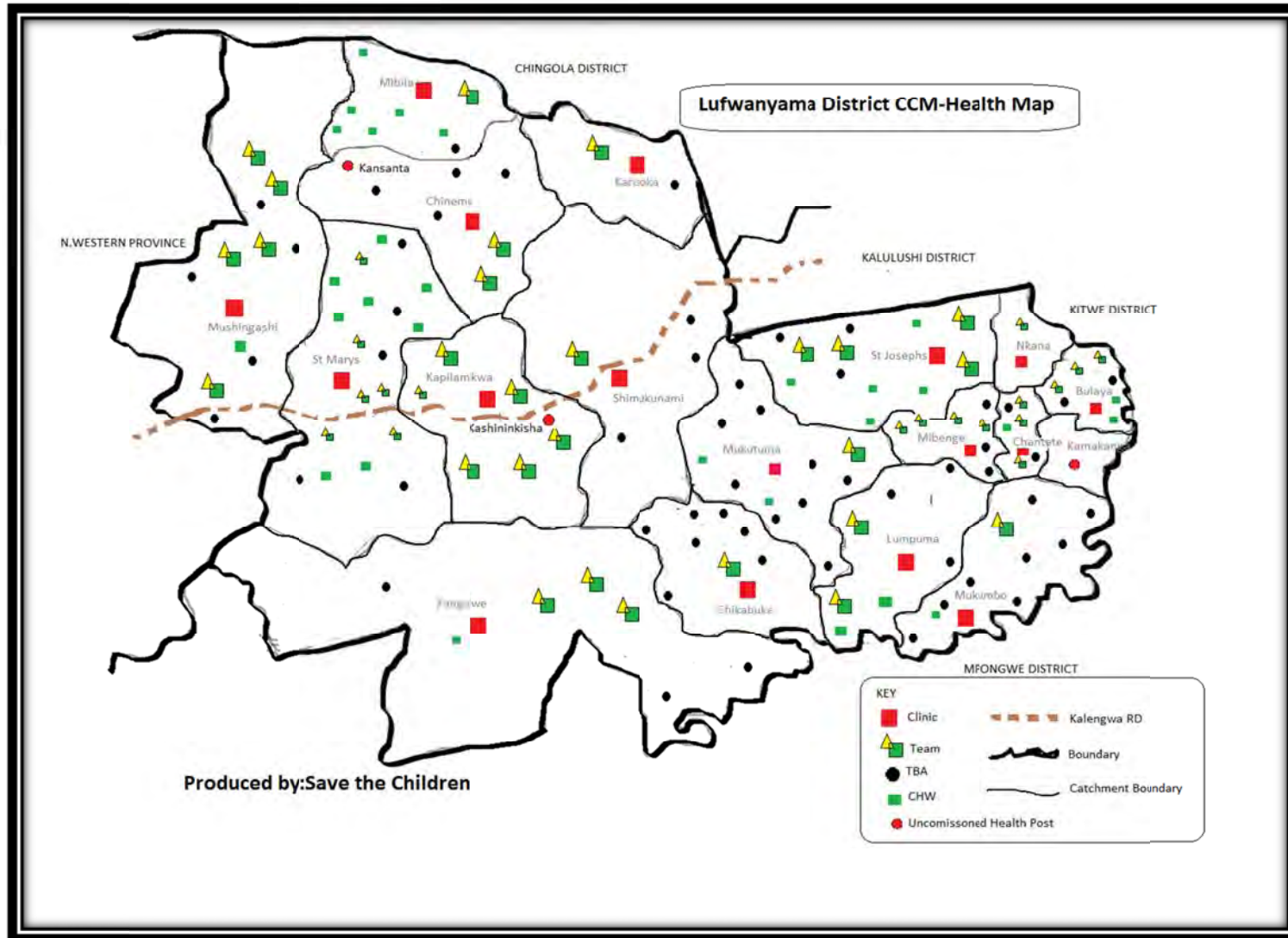
A total of 465 care givers of children 0-23 months were interviewed in all the 19 HF areas ranging from 15 (one village) to 60 (four villages).

ANNEX 12: Special Reports

The following additional information is presented:

1. Luftwanyama district map, showing health centers and the location of CHWs, TBAs and CHWTBA teams.
2. Outline of proposed changes in the project monitoring and evaluation approach as follows:
 - Summary of changes in project indicators
 - Proposed data for monthly project monitoring
 - Proposed outline for Monthly District Summary Report
 - Summary of proposed changes to community registers and other forms
 - Proposed PNC observation checklist and case histories for use by TBA supervisors when PNC cases are not available
3. Summary of community mobilization achievements and challenges

1. Lufwanyama District Map: showing locations of CHWs, TBAs, CHW/TBA Teams and Health Facilities



2.1 Proposed mid-term modifications to monitoring and evaluation indicators LINCHPIN Maternal, Newborn and Child Health Program

	Previous Indicator (s) or Indicator Area	Proposed Change	Comments
SO 1: Increased use of key newborn and child health services and practices	Timely treatment ratio for pneumonia with amoxicillin Timely antimalarial treatment ratio for RDT positive malaria with ACT Treatment ratio for diarrhea with ORT and zinc	Use population-based household survey indicators instead of indicators calculated using register data (numerator) and census estimates of the number of children and expected number of cases (denominator)	Census-based estimates of denominators (number of children and expected cases) are unreliable Difficult to get data on “timeliness” of treatment from registers
	Health worker density – no indicators	Add measures of TBA and CHW coverage – using density measures	Density useful for tracking overall district coverage
IR1: Increased access to and availability of services	NHC with trained, deployed CHW NHC with trained deployed TBA	Change to training coverage – add training coverage of NHCs	Easier to measure; clearer measure of program inputs; not clear what % of NHCs should have CHW or TBA
	Referral compliance	Change wording	Clearer definition needed
	Access to PNC and facility deliveries – no indicators	Add indicators on newborn contacts within 24 hours and % of mothers delivering at facilities	Improving early PNC visits important to reducing newborn mortality; TBAs trained to send mothers to facilities for delivery
IR2: Improved service quality	CHW and TBA case management practices using observation	Remove observation-based indicators – add measures of TBA and CHW case-management practice from register review	Case –observation too difficult for routine collection – now collected 6 monthly by periodic analysis of clinical case-observation forms completed by supervisors Register data on treatment of children relatively easy to collect
	Availability of medicines and supplies for CHWs and TBAs	Remove TBA indicator. Define CHW indicator more clearly - % of CHWs with no stock-outs in the previous month – for all categories of essential medicines. From CHW registers.	Focus on CHW medicines

**Proposed modifications to monitoring and evaluation indicators
LINCHPIN Maternal, Newborn and Child Health Program**

	Indicator(s) or Indicator Area	Proposed Change	Comments
IR2: Improved service quality	CHW activity level (average number of cases seen/unit time)	Remove from indicator list	Use for routine program monitoring
	Supervision – no indicators	Add indicators on clinical supervision with observation received in the previous 3 months by TBAs and CHWs	Important for sustaining quality practice
IR3: Increased demand for services and healthy practices	Care -seeking practices – no indicators	Add indicator on care seeking for fast breathing	Improving care-seeking for pneumonia is a key program element – and measure of demand
IR4: Enabled environment	Development of Lufwanyama living university Research findings presented	Remove indicators Add indicator on SMAG development and incorporation of CCM activities into annual district plan	Living university not currently a program element Research findings not an important element of enabled environment

2.2 LINCHPIN Monthly and Annual Project Monitoring

Use data to produce quarterly reports which summarize data as graphs. Make the summary a DHMT report on community-based MNCH, not a LINCHPIN report. Each graph summarizes trends for the previous 12 months – including the most recent quarter. Quarterly reports should be no more than 4 pages – preferably 2 pages double-sided. Use reports for monthly DHMT CCM implementation update, clinical care meeting and district and provincial quarterly performance review. Distribute reports to facility-based supervisors.

Activity Area	Indicator	Source	2011-12	2012-13	2013-2014
TBA availability	TBA density by health facility	Project records and census population estimates			
	Total number of TBAs available (attrition)				
TBA performance	Proportion of TBAs reporting	TBA registers			
	Average number of mothers and newborns seen per TBA				
	Proportion of all registered deliveries escorted by the TBA to the health facility				
	Proportion of TBAs who received clinical supervision				
CHW availability	CHW density by health facility	Project records and census population records			
	Total number of CHWs available (attrition)				
CHW performance	Proportion of CHWs reporting	CHW registers			
	Average number of children seen per CHW				
	Proportion of confirmed malaria cases treated with ACT				
	Proportion of cases of fast breathing treated with amoxicillin				
	Proportion of cases of diarrhea treated with ORT				
	Proportion of cases of diarrhea treated with zinc				
	Proportion of CHWs who received clinical supervision				

2.3 DHMT Quarterly Summary Report: example draft

Community-based Maternal, Newborn and Child health

Page 1: 4 graphs

TBA density by health facility

Total number of health workers available over time (attrition)

CHW density by health facility

Total number of health workers available over time (attrition)

Page 2: 4 graphs

Proportion of TBAs reporting

Average number of mothers/newborns seen per TBA

Proportion of all registered deliveries escorted to health facilities by TBAs

Proportion of TBAs who received clinical supervision

Page 3: 4 graphs

Proportion of CHWs reporting

Average number of children seen per CHW

Proportion of confirmed malaria cases treated with ACT

Proportion of cases of fast breathing treated with amoxicillin

Page 4: 3 graphs

Proportion of cases of diarrhea treated with ORT

Proportion of cases of diarrhea treated with zinc

Proportion of CHWs who received clinical supervision

On this page present a short summary of main findings from data:

- Areas where CHW density is low or high
- Any new drop outs and reasons for them
- Status of CHW and TBA reporting
- Comments on the number of cases seen and how they are treated
- Comments on mothers accompanied to health facilities by TBAs
- Comments on clinical supervision

2.4 LINCHPIN Register and Form Review

Register	Proposed changes	Technical emphasis needed in supervision
CHW register	No changes	CHWs must record all sick children including young infants who are brought to them, whether or not they have a supply of medicines
TBA register	Re-print Each column has picture to illustrate meaning, as well as English words and Bemba words PNC referral box has words changed to: “newborns with danger signs referred”	Explain to record only newborns referred for danger signs in the PNC referral column
Daily availability of medicine and RDT form	Remove the register	Supervisors ask CHWs whether they have had “One or more stock-outs” of each category of drug or RDT when they complete the monthly register review – and enter findings directly into aggregation register
Supervisor checklist CHW and TBA	Remove the register	Use monthly review of CHW registers to review drug and equipment availability and case management practices
Supervisor clinical mentoring form CHW and TBA	Frequency – clinical observation and completion of mentoring checklists for CHWs and TBAs should be conducted once every 6 months – twice a year - by facility supervisors Currently CHWs have 1 clinical observation form for management of sick child TBAs have 2 clinical observation forms – for immediate essential newborn care, and possible severe bacterial infection Add PNC observation checklist for PNC – include case histories when PNC cases are not available – for use by TBA supervisors	Continue to promote clinical review at outreach sessions when possible – data do not need to be collected Every 6 months collect completed mentoring checklists and enter and analyze the data to track quality of case-management practices

2.5 Postnatal Care Supervision Checklist for TBA (draft June 3, 2012)

Date: _____ Date of Birth: _____ Postnatal Day Number: _____

TBA: _____ Community: _____

Supervisor: _____ Facility: _____

#	TBA Activity	Yes	No	NA	Comment
1	Greet the mother				
2	Ask about mother's well being				
3	Ask about maternal danger signs				
	a) Excessive bleeding				
	b) Headache				
	c) Fits				
	d) Fever				
	e) Feeling very weak				
	f) Breathing difficulties				
	g) Foul smelling discharge				
	h) Painful urination				
	i) Severe abdominal or perineal pain				
4	Refer to a health facility for any of these signs				
5	Counsel on prompt recognition of danger signs				
6	Counsel on prompt, appropriate care-seeking for danger signs				
7	Ask for swollen, red or tender breast or nipples				
8	Manage breastfeeding problems or refer her to a health facility for care				
9	Ask about newborn's well being				
10	Promote and support early (within the first hour after birth) breastfeeding				
11	Promote and support exclusive breastfeeding				
12	Help to keep the newborn warm				
13	Promote skin-to-skin care				
14	Promote hygienic umbilical cord and skin care				
15	Ask or look for newborn danger signs				
	a) Not feeding well				
	b) Reduced activity				
	c) Difficult breathing				
	d) Fever				
	e) Feels cold				
	f) Fits or convulsions				
16	Refer to a health facility for any of these signs				
17	Counsel on prompt recognition of danger signs				
18	Counsel on prompt, appropriate care-seeking for danger signs				
19	Promote birth registration				
20	Promote timely vaccination				
21	Assess if the newborn needs additional care (e.g. LBW, sick, mother HIV infected)				
22	Refer newborns who need additional care				

TBA Case Scenario #1

Read: Mrs. Kachule gave birth to her first child 2 days ago at the health center. All went well. She has been home for 1 day. You pay a call to see how she and her infant son are doing. Pretend that I am Mrs. Kachule and that this (doll or wrapped towel) is my infant son. What will you do?

Note: You (Mrs. Kachule) say that you are fine. When asked maternal danger signs one-by-one, you say you have no danger signs. When asked, you say that your breasts are swollen and that breastfeeding is difficult. When asked newborn danger signs one-by-one, you say that your infant son's only problem is that he is not feeding well.

Correct TBA Activities: The TBA should perform all activities except #4 (refer mother), #8, (manage breastfeeding problem), and #17-22 because these are Not Applicable. The main activity is #16 (refer the infant) because he has a danger sign (not feeding well).

TBA Case Scenario #2

Read: Mrs. Mwale gave birth to her third child 3 days ago at the health center. All went well. She has been home for 2 days. You pay a call to see how she and her infant daughter are doing. Pretend that I am Mrs. Mwale and that this (doll or wrapped towel) is my daughter. What will you do?

Instructions: You (Mrs. Mwale) say that you are fine. When asked maternal danger signs one-by-one, you complain of a headache.

Correct TBA Activities: The TBA should perform all activities except #10 (early breastfeeding), and #16 and #22 (refer newborn) because these are Not Applicable. #19 and #20 are optional on this visit. The main activity is #4 (refer the mother) because she has a danger sign (headache).

TBA Case Scenario #3

Read: Mrs. Phiri's sister calls on you to report that she unexpectedly just gave birth to her second child half an hour ago at home. She says that things seem OK, but she wants you to check. You go to the home. Pretend that I am Mrs. Phiri and that this (doll or wrapped towel) is my daughter. I am resting on my bed. My newborn is loosely wrapped lying opposite my bed. What will you do?

Instructions: You (Mrs. Phiri) say that you are fine. When asked about maternal danger signs one-by-one, you deny any.

Correct TBA Activities: The TBA should perform all activities except #4 (refer mother), #7-8, #15-20, and #22 because these are Not Applicable right now. The main activities are essential newborn care: #10 (early breastfeeding), #11 (exclusive breastfeeding), #12 (keep newborn warm), #13 (promote skin-to-skin), and #14 (promote hygienic cord and skin care).

3. LINCHPIN Community Mobilization: Midterm Achievements and Challenges

Community mobilization is a supportive strategy to the Community Case Management (CCM) and the *teaming* approaches being implemented by the LINCHPIN Project. The intent of this strategic approach is to ensure an enabling environment for MNCH community-generated action that supports positive maternal and newborn healthy behaviors. The approach also works to develop community capacity to successfully address their needs. The effort to date has required a shift in attitude and aim among technical staff and MOH partners which moves away from directive ‘health talks’ and campaigns to co-learning, empowering participation, and community reflection and action.

The CM goal within LINCHPIN is: To increase communities’ capacity to collectively analyze, plan, implement, and evaluate actions to improve maternal and neonatal health and prevent MN morbidity and mortality in Lufwanyama District.

Specific CM objectives are:

- To empower Neighborhood Health Committees (NHCs) in particular and the community in general to make informed decisions regarding maternal and neonatal health care;
- To strengthen and/or develop community-based referral systems to increase demand for CHW/TBA ‘teams’ applying community case management (CCM), and/or other trained health workers and/or health facilities for antenatal, postnatal care, safe delivery and newborn/child health;
- To increase collective efficacy to respond to newborn, child health and obstetric referrals and emergencies;
- To help change social norms that result in or are related to harmful practices; and
- To strengthen the social-support networks/systems for pregnant women.

Save the Children defines community mobilization as: “*a capacity-building process through which community individuals, groups, or organizations plan, carry out, and evaluate activities on a participatory and sustained basis to improve their well-being, either on their own initiative*”.

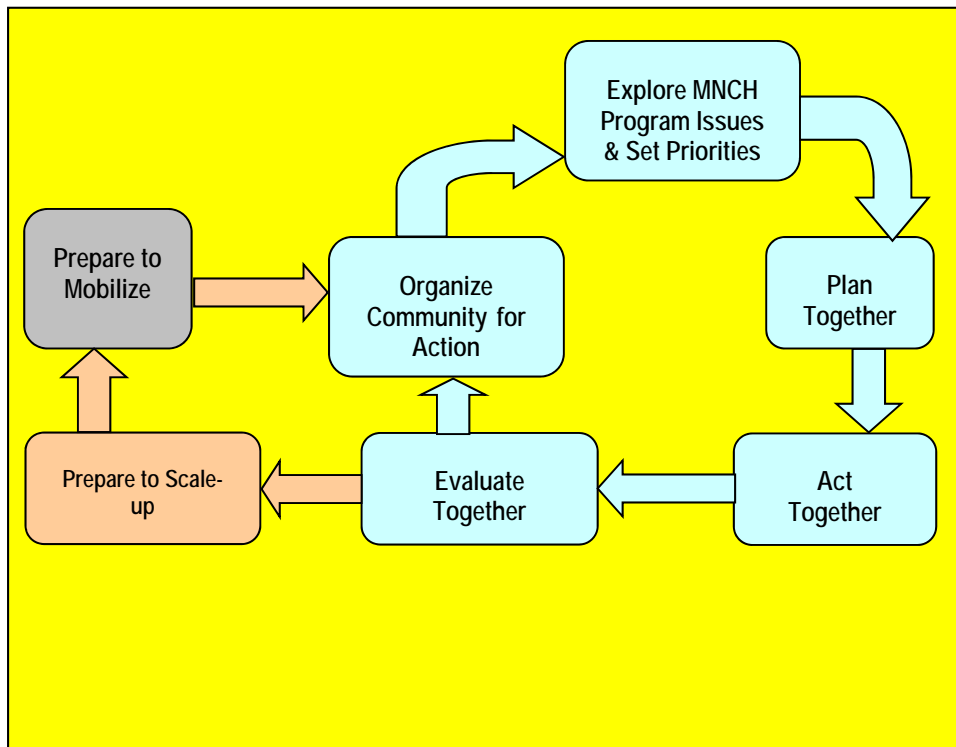
LINCHPIN began applying this CM definition in earnest in January 2011 when the *Community Action Cycle* (CAC)² process was introduced at the catchment area level through the Ministry of Health Neighborhood Health Committee (NHC) structure. NHCs are community-based groups made up of community members who work to meet the health needs of their communities. They also act as a link between the formal health system and the community. NHC members ideally comprise a broad representation of community members such as village headmen, religious leaders, traditional leaders, civil society organizations (CSOs), TBA/HWs, women’s group representatives, school teachers and other community members. At the start-up of CM efforts, LINCHPIN’s inventory of NHCs in Lufwanyama revealed little activity in the area of MNCH; only 10-30% of membership was held by women. A total of 118 NHCs were identified,

² Save the Children, *How to Mobilize Communities for Health and Social Change Field Guide*, 2002, Health Communication Partnership.

corresponding to the **118 Catchment Areas** in Lufwanyama District. The district has 140 health zones, which represent either a single village or small cluster of closely spaced villages.

The CAC phases include preparing to mobilize; organizing for action; exploring the health issues and setting priorities; planning, acting, and evaluating together, and “scaling up” successful efforts. The (CAC) is currently being implemented at the Catchment Area level by the Neighborhood Health Committees (NHCs).

The Community Action Cycle (CAC)



LINCHPIN’s presently has four Community Mobilizers³ and one CM Supervisor who work with their counterparts: the District Health Management Team (DHMT) NHC Focal Person; and Environmental Health Officer⁴. The role of the Mobilizers includes strengthening the capacity of NHCs, monitoring CM activities, mobilizing key district stakeholders to engage in MNCH, building linkages between communities and external resources, and building MOH counterpart CM skills. Because of the scale of the CM efforts in Lufwanyama, and poor transportation infrastructure, each Community Mobilizer must work strategically within their catchment area to ensure that NHCs receive the support and capacity building necessary to carry out their Community Action Cycle (CAC). It was decided with DHMT partners that the CAC should initially begin in 80 NHCs in selected Catchment Areas.

³ One (1) additional Community Mobilizer has been hired by the project as of March, 2012.

⁴ Public Health Officer - Nelson Waitolo (NHC focal person); Mr. Moses Chomba – Environmental Health Officer (assist NH focal person)

Community Mobilization Strategies

CM strategies are designed to support improved community case management practices, home visits along the continuum of care and TBA/CHW teaming. Strategies were developed by discussions with DHMT and LINCHPIN staff and community groups, and by reviewing available data on local culture and community structure. The principal strategies include:

1. **Building Capacity of NHCs to develop actions plans based on factors affecting MNCH and rollout of CCM with specific focus on:**
 - a) Development of **community emergency transport systems**;
 - b) **Support for CCM** (advocating for supplies/drugs; promoting CCM; supporting referral systems; using data for improved case management);
 - c) **Support for TBA/CHW teams** in particular, and integration of existing volunteer cadres – including TB, CBDs, and PMTCT counselors.
 - d) **Formation of Safe Motherhood Groups** – to provide a safe and supportive environment for pregnant women in order to create dialogue for reinforcing positive practices related to MNCH
 - e) **Use of Grandmother/Wise Elders Groups** (aunties/elderly gate-keepers) – these women are often important to decision-making related to early recognition and seeking care for dangers signs in pregnant women. In most communities, one (1) Grandmother/Wise Elders Group that would be supported by NHC; CHW/TBAs.
 - f) **Male Motivators** – a cadre of male motivators for reproductive and community health have been trained in Lufwanyama District to promote family health and can be incorporated into NHC plans for promotion of MNCH.
2. **Creating dialogue** using above structures to support behaviors for early recognition and care seeking behaviors. Shifting from *unidirectional* health talks (which are often used) and less likely to create the necessary questions/discussion and support for improved child health practice.
3. **Identifying CCM Champions/Communities of Promising Practice** amongst the NHCs. Their role will be to support and lead key stakeholders in their communities towards a greater understanding of CCM and how early recognition and treatment of newborn and childhood illnesses will save lives. Community Exchange Visits are being currently organized to enable NHCs ‘Promising Practice’ to share best practices.
4. **Developing strategic communication approaches** in order to support a broader enabling environment to reach the general population of Lufwanyama District. In particular the following activities will be undertaken:
 - Utilization of local Community Radio (*Icengelo* = Light) – based in Kitwe;
 - Creation of Radio Listening Groups (where broadcasting is possible);
 - Development of radio dramas on CCM; content to be developed jointly and approved with DHMT/Lusaka-based CCM Working Group; and
 - Free-play radios – 300,000 Kwacha for 30 minutes airtime.

Implementation of Community Mobilization

The following elements of the Community Action Cycle (CAC) have been conducted by community mobilizers working in collaboration with NHCs.

Preparing to Mobilize

The Preparing to Mobilize phase focused on ensuring that LINCHPIN key staff and DHMT and other partners had the community mobilization skills and strategies necessary to build capacity of NHC and communities. During this phase a detailed CM Framework was prepared providing a road-map for staff and partners.

A series of capacity strengthening workshops for LINCHPIN Community Mobilizers and DHMT counterparts were facilitated by the Save the Children's Senior Africa Area Capacity Building Advisor for Health based in Johannesburg.⁵ These workshops were facilitated according to the Phases of the CAC, allowing participants to apply what they learned in the field prior to proceeding to the next phase. LINCHPIN staff and DHMT then trained and mentored NHCs on this phase. A full inventory of all 118 NHCs in Lufwanyama was also carried out to ascertain the level of NHC functionality - including number of members; gender balance; management committee structure (existence of NHC Constitution); when and where they meet; and HC focal point person.

Getting Organized

Many NHCs were formed back in 2003/4 as part of a nationwide effort to encourage community action. However, few received the necessary capacity building skills and support to sustain their group activity. It was necessary to work with the NHCs to revitalize their membership composition and group function. The project worked to ensure participation of those *most affected* by the issues (in this case MNCH) and those *most interested* in working to address MNCH in their communities. LINCHPIN mobilizers worked during the Organize Phase to focus on revitalizing 80 of the 118⁶ NHCs in Luwanyama. Greater women's participation was established, new governing constitutions developed, clear roles and responsibilities and most importantly a vision towards improved MNCH in their communities. NHCs finished this phase with an average membership of between 15-20 members.

Explore with NHCs newborn/child health issues and set priorities

The Explore and Setting Priorities phase of the CAC supported communities to understand the underlying issues affecting MNCH in *their communities*. Simple participatory tools including use of role plays and the Problem Tree analysis were taught to NHCs so that they can explore local causes of newborn and child death. Problem trees were undertaken for all LINCHPIN target groups (0-28 days; < 5 years old; pregnant woman) in order to assure that appropriate focus was given and to set the stage for action planning. A community resource map was also drawn up to outline resources that were available for addressing some of these issues. Based on what was

⁵ Workshops held: Nov. 15-18, 2010; Feb. 21-25, 2011; Nov 28-Dec 3, 2011; March 13-16, 2012.

⁶ The decision to reduce numbers of NHC's being supported included: limited number of LINCHPIN mobilizers to cover the large distances, poor road access, and improved likelihood of providing quality support. Selected NHCs were representative of all catchment areas and included those that were currently active or had been active in the past two years.

learned during the explore phase, NHCs and community members set MNCH priorities for the issues that would be addressed first. A selection of Problem Trees and community resource maps were found in many HCs during the mid-term evaluation.

Planning Together

During the Planning Together Phase of the CAC NHCs were taught how to create a Community Action Plan specific to *their zone*, based on their own priorities. NHCs did not plan alone during this time, but involved key stakeholders from their community (formal/non-formal leaders; women's groups, etc.). NHCs initial Community Action Plans summarized activities for about 6 months. This was to allow communities to engage in their own health activities and see results based on short-term plans. A review of all 80 NHC action plans was undertaken to monitor quality of strategies and activities being suggested. While all plans addressed issues for infants 0-28 days and children < 5, only 20% or less addressed issue of pregnancy and delivery. Mobilizers were able to mentor NHCs to review their Problem Trees and add strategies specific to pregnancy and delivery. The following strategies are prominent in current NHC Action Plans:

- Malaria: promotion of ITNs; early health seeking behavior; promotion of quality antenatal care (IPT);
- Diarrhea: promote availability and use of chlorine, construction and rehabilitation of water wells and bore holes;
- Maternal health: emergency transport systems, rehabilitation of Primary Health Care Units; and
- Newborn care: CCM; support to TBA/HW teams; early referral.

Acting Together

In the Act Together phase of the CAC, NHCs work to carry out the activities in their Action Plans. Ongoing small capacity-building trainings are being organized by LINCHPIN and DHMT staff for NHCs during this time to focus on improved leadership; planning; resource mobilization and management and conflict resolution skills. All NHCs participated in Child Health Week in their zones, and are meeting monthly to monitor their activities and review activities as needed. More work is needed to ensure that implementation takes place; in many communities availability of resources remains a problem. Ongoing guidance is needed to help communities identify sources of local resources or other outside sources.

Monitor and Evaluate Together

Success Stories and lessons learned are being gathered by LINCHPIN Community Mobilizers to be shared with DHMT partners and circulated amongst NHCs.

Prepare to Scale Up

LINCHPIN is currently identifying 'communities of promising practice' in order to begin community-to-community exchange visits amongst NHCs for learning and application of good practice. Lesser functioning NHCs will be selected to visit well-functioning NHCs who are successfully carrying out collective action for improved MNCH in their communities.

Summary of successes: community mobilization

- All NHC have been organized with at least 50% women's participation, a written constitution to guide their work, and a list of members.
- All NHCs have carried out the Explore Phase and set MNCH priorities, have an Action Plan of their own and have begun to carry out activities.
- All NHCs meet monthly and send representative to meet with at their respective Health Center Management Committee once a month.
- Twenty-three Safe Motherhood Groups have been formed.
- NHC members provide support at various levels for TBA/HW CCM *teaming* activities.
- NHCs spearheaded community activities during Child Health Week.
- Sixty-three community leaders have been trained on the CAC
- Linkages have been built with six traditional rulers.

Summary of challenges: community mobilization

1. Key behavioral messages for LINCHPIN have been developed however counseling cards for CCM and MNCH for use by local stakeholders (TBA/CHW teams; NHCs; Safe Motherhood Groups; Male Motivators; and Grandmothers Groups) are still not available. *Afya Mzuri* a local Zambian NGO organization based in Lusaka has a large archive of materials which LINCHPIN can use as a resource for message development.
2. During the development of the LINCHPIN CM plan, NHCs mentioned the need for basic knowledge in a number of areas, including: newborn and child survival; motivation of community volunteers (CHW/TBAs), male motivators and NHCs; improved action plan strategies; and improved resource mobilization and management. Additional mentoring and resource materials in these areas are needed in local language for each member of the NHCs.
3. Closer planning and co-learning needed between LINCHPIN Community Mobilizers, DHMT and HC Environmental Health Officers.
4. Community Mobilizers still thinly distributed over vast distances. Shifts are needed in the placement of some Mobilizers in order to improve their reach.
5. A few NHCs may still be waiting for their respective HC Committee or Environmental Office approval/support before acting on their own plans – this situation needs to be supported by ongoing monitoring of those NHC who are not taking action and support to begin action.
6. Closer monitoring of the 'goat' resource 'pass-it-on' is needed to ensure a clear understanding by NHC members of this resource. Guidelines have been developed, but are not always properly understood. Community mobilizers can help clarify areas of confusion.

Basic guidelines for CAC implementation

The following guidelines will help to steer CM staff, NHCs and stakeholders:

Guideline	Rationale
Doable actions	People need and want to see results. Setting objectives that are attainable in a short period of time will build enthusiasm and empower people by strengthening their sense of collective efficacy (i.e. “ <i>We can do it</i> ”). For instance, the mapping of community resources can be done in a short period of time as part of the villages’ action plans.
Focus on strengths versus deficits	The focus will be placed on strengths, positive attributes, and existing capacity in the villages. For instance, women’s interest in their babies’ <i>safety and wellbeing</i> will be at the center of CM activities. Also, existing local capacity at different levels (e.g. for planning, organizing chanting, acting, etc.) will be identified and stimulated during the various CAC phases.
Based on people’s experiences	Testimonials and real-life stories are powerful tools for reflection and action. Whenever possible, testimonials will be used as the start point of discussions and activities.
Participatory experiential learning	Related to the point above, the CAC will be built around actions and activities that facilitate participatory and experiential learning. This will require a <i>major shift</i> from traditional education/’health talks’ and information sessions to participatory models of learning and (informal) education.
Entertaining activities	Villagers, and in particular women, have a heavy workload. They may be afraid of getting involved in activities that add yet another task to their schedules. Using existing socialization places/spaces and participatory and entertaining activities such as radio listening groups will greatly facilitate their involvement and increase their interest in MNCH and CCM issues.
Short, medium, and long-term objectives	Community action plans will contain short, medium and long-term objectives to assure visible results while at the same time encouraging continuity.
Development of a common vision	Beyond the attainment of specific objectives, people will develop a “dream” and a common vision regarding MNCH in their villages. Developing a common vision as well as solidarity around MNCH will help develop local ownership of the project and assure long-term sustainability.
Focus on MNCH and CCM	LINCHPIN should stay focused on MNH. LINCHPIN staff and volunteers will have to be transparent about the project’s scope and constraints while entering the communities as well as during discussions with government officials at Provincial, District, Health Center and Community levels. While the focus of the project and LINCHPIN project staff inputs will be MNCH and CCM related, it is likely that communities will identify strategies and activities outside of the health sector that can justifiably contribute to better maternal and newborn health outcomes. To the extent possible, LINCHPIN staff will encourage communities to realize these activities by utilizing their own resources and by helping to link them whenever possible to other organizations that may assist with these other-sector activities.
Broad-based and inclusive; Encouraging community-to community exchange	The findings, decisions and proposals for action by NHCs will be systematically shared with the broader community. Likewise, exchange mechanisms between and among villages will be developed for “horizontal networking” (i.e. among communities).

NHC - Responsibilities and Norms

Role	Key Responsibilities
President or Chairperson	Day-to-day running of the group Disciplinary action Attending to community disputes regarding children Liaison with partners Chairing meetings to review progress and activities
Vice President	Supports president in his or her absence
Treasurer	Keeping a record of financial donations, disbursements and expenditures incurred by group Responsible for banking and withdrawals (with second signature)
Vice Treasurer (optional)	Supports treasurer in his or her absence
Secretary	Keep meeting minutes Keeps records of all group activities Calls meetings on behalf of president Keeps records of individual children
Vice Secretary	Supports Secretary in his or her absence May have additional responsibilities for record keeping
Representative of local government or traditional authority	Acts as focal point for communication between the group and local decision makers
Resource manager (community volunteer member)	Oversees quality assurance and monitoring; includes a 'logistician' to assist with tracking committee assets such as bicycles, rucksacks, office equipment.
Members and/or other community volunteers who work with NHCs (e.g. activists)	Individual house visits to pregnant women & families with children < 5 Ongoing support to women, children < 5 and their families Organizing activities within the community to carry out Action Plans

Example of Norms/Code of Conduct:⁷

- We will be transparent and open about what we do and why we do it.
- We will be clear about what we can/cannot do, and avoid raising expectations
- We will do what we say, and we will keep all the promises that we make.
- We will respect confidentiality relating to HIV/AIDS and sensitive information.
- We will make sure that all community members are involved in our activities, including people who are often stigmatized or discriminated against.
- We demonstrate respect for everyone at all times.
- We will actively seek to involve children fully by creating space for them to participate and demonstrating respect for and interest in their views.
- We will be accountable to community members at all times.
- We will strive to challenge harmful attitudes, behaviours or ideas.

All members read and understand the code of conduct. They have signed this and agree to be kept accountable.

⁷ Adapted from International HIV/AIDS Alliance, 2006, *All Together Now! Mobilizing communities for HIV/AIDS*

ANNEX 13: Operations Research Midterm Report: Study Progress and Achievements

The operations research (OR) within LINCHPIN is aimed at assessing the feasibility and effectiveness of TBA-CHW teams supported by NHCs to deliver high impact *integrated newborn and child interventions among children 0-59 months of age in Lufwanyama District*. The OR is being implemented in three phases. The first phase was formative research which used group discussions and pile sorting exercises to explore and identify domains and factors for measuring teaming. The second phase is an evaluation employing a pre- and post-intervention design to assess the use of high impact newborn and child care interventions and the assessment of level of teaming achieved. The third phase is a qualitative process documentation to assess community opinions and the acceptability of CHW-TBA teaming. Operations research has been planned and conducted by BU in collaboration with project and DHMT staff.

Main project OR achievements in the area of teaming include:

- Formative research. During this phase, six group discussions and pile sorting sessions were held with CHWs, TBAs, and NHCs. The sessions identified knowledge, attitude and practice factors that were important to creating successful community teams. These factors were incorporated into the teaming training manual for health workers.
- Training of teams and NHCs. Forty-six teams (composed of 46 CHWs and 46 TBAs) and 92 NHC members were trained, for a total of 184 participants. All passed knowledge tests at the end of training and were awarded certificates. Staff from the Lufwanyama DHMT served as facilitators for the teaming training.
- A population-based household survey of women with children 0-59 months selected from NHC areas with CHW/TBA teams. A total of 735 caregivers of children 0-59 months were interviewed from 46 NHC areas. The survey measured baseline indicators in several areas including treatment of key diseases and referrals for severe illness. A follow-up survey will be used to assess impact of teaming on key indicators over time.

Key findings included:

- 1) 41.1% of the children were classified as having malaria in the previous 2 weeks of whom 78.7% of those eligible to be treated actually received ACT. However, only 49% of those who were ACT-eligible received early and appropriate treatment;
 - 2) 21.8% of the children were classified as having diarrhea within the previous 2 weeks and 75.6% received recommended oral rehydration therapy (ORT) but only 5.6% received zinc and ORT; and
 - 3) 18% of the children were classified as having non-severe pneumonia in the previous 2 weeks and 59.8% received the MOH recommended antibiotics but only 31.1% received early and appropriate treatment for pneumonia.
- On-going assessments of teaming performance. Formative research data were used to identify several factors associated with team performance, including: 1) 18 factors grouped into 6 domains relevant for measuring teaming structure; 2) 20 factors as teaming

determinants; and 3) 7 performance functions needed to assess teaming function. These factors and functions were used to develop a teaming assessment tool to measure the level of teaming. Two teaming assessments have been completed. Data from the second assessment are yet to be analyzed. The findings from the first assessment involving 45 teams were encouraging and showed that CHWs and TBAs, with support from the NHCs, were functioning and performing well as teams.

Significant findings include:

- 1) All 45 teams were categorized as “Stage 3” on the teaming structure scale (average score of 92%, ranging from 70 to 98);
- 2) On the teaming function scale, 14 teams were categorized as “below average” with a score of ≤ 5 out of a possible 14, 25 teams scored “average” with a score of 6-10 and 6 teams scored “above average” with a score of 11-14; and
- 3) For the overall score (composite teaming level which is a combination of teaming function and structure), 14 teams were categorized as “medium” and 31 as “high”.

Teaming assessments will be used to assess quality of teaming during the period of the study.

- CHWs, TBAs, and NHCs have enthusiastically embraced the concept of teaming. Teams report making joint home visits in the postnatal period, conducting health education sessions for large and small groups, and helping each other facilitate referral of mothers, newborns and children when needed. In some areas, TBAs and CHWs have formed their own informal teams. In others, NHC members have joined teams to do home visits and community education. Community members and caretakers report that home visits by teams are more strongly accepted than when CHWs or TBAs visit alone.
- Two manuscripts have been drafted for publication⁸.

Program gaps and continuing challenges: OR teaming

1. Team attrition

Although 46 teams were trained, 45 teams were assessed during the first assessment and 43 teams during the second assessment. Teams ceased to function when CHWs or TBAs stopped working – reasons for staff attrition were discussed in sections 1.1.1 and 1.1.2.

2. Changing team structure

Teams were originally designed to be CHW/TBA pairs. NHC members were trained to provide support to teams, but not to operate as part of the team, and conduct home visits. In most areas, however, trained NHC members have considered themselves part of teams – and conduct joint

⁸ “Effective access to case management – worse than we thought” has been approved for publication in a special iCCM supplement in American Journal of Tropical Medicine and Hygiene.

“Measuring the structure, function and determinants of community-based “teams” delivering health care in rural Zambia” is being finalized for re-submission after having been rejected by the first journal where it was submitted.

visits. This appears to have been the result of miscommunication during training of participants. This was not the original intention of the teaming design. The extent to which team structure has been changed to include NHCs will need to be quantified, since it will change the teaming intervention being delivered.

3. More data needed

More data would be useful for determining the impact of teaming on practice in two areas:

1) Management of children under 2 months. Since one of the objectives of teaming is to improve the management of children 0-2 months of age – more data on this age group could be collected from community registers, during on-going teaming assessments. Key data includes, PNC visits at 24 hours, 2, 3 and 7 days, and the number of sick children 0-2 months seen, referred and completing referral; and 2) The baseline household survey reports that 38% of children had a suspected severe illness in the previous 2 month – a very high proportion. Survey screening questions for severity of illness included: "looks very unwell/not playing well" or "red swollen eyes/discharge" – suggesting that the current variable is not very specific for severe illness. The variable needs to be re-calculated by removing some non-specific signs and focusing on those more strongly associated with severity. This is important in order to better estimate referral rates for severe illness before and after the teaming intervention.