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Maternal and Child Health Integrated Program

Zimbabwe

Situation Analysis

Updated June, 2010

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Acronyms and abbreviations

AMTSL	Active Management of the Third Stage of Labor
BEmONC	Basics Emergency Obstetrical and Newborn Care
CB-MNC	Community-based Maternal and Newborn Care
CCM	Community Case Management (usually of diarrhea, pneumonia and malaria)
CEmONC	Comprehensive Emergency Obstetrical and Newborn Care
cMYP	comprehensive Multi-Year Plan
DFID	United Kingdom Department for International Development
DH	District Hospital
DHE	District Health Executive
DTP	Diphtheria, pertussis and tetanus vaccine
EGPAF	Elizabeth Glazer Pediatric AIDS Foundation
ENC	Essential newborn care
EOC	Emergency Obstetric Care
EU	European Union Commission
FANC	Focused Antenatal Care
FP	Family Planning
GAVI	Global Alliance for Vaccines and Immunization
GDA	Global Development Alliance
GRN	General Registered Nurse
HBB	Helping Babies Breathe
Hep B	Hepatitis B vaccine
Hib	Haemophilus influenza type b vaccine
ICC	Immunization Interagency Coordinating Committee
IEC	Information and Education Campaign
IMCI	Integrated Management of Childhood Illness
IMNCI	Integrated Management of Newborn and Childhood Illness
IPT	Intermittent Presumptive Treatment for malaria
JSI	John Snow, Inc.
KMC	Kangaroo Mother Care
LAM	Lactation Amenorrhea Method
LIST	Lives Saved Tool
MCHIP	Maternal and Child Health Integrated Project
MER	Most efficacious regimen
MIMS	Multi-Indicator Monitoring Survey
MNCH	Maternal, newborn and child health
MNH	Maternal and newborn health
MOHCW	Zimbabwe's Ministry of Health and Child Welfare
OPHID	Organization for Public Health Interventions and Development
ORS	Oral rehydration solution
PCN	Primary Care Nurse
PCV	Pneumococcal vaccine
PE/E	Pre-eclampsia, eclampsia
PMTCT	Prevention of Mother-to-Child Transmission of HIV

PP/PNC	Postpartum/Postnatal Care
PPFP	Postpartum Family Planning
PPH	Prevention of postpartum hemorrhage
PSI	Population Services International
QOC	Quality of Care
RED	Reaching Every District
RHC	Rural Health Center
SC	Save the Children
TT	Tetanus Toxoid
UNFPA	United Nations Population Fund
UNICEF	United Nations Children Fund
USAID	United States Agency for International Development
VHW	Village Health Worker
WHO	World Health Organization
ZACH	Zimbabwe Association of Church-related Hospitals
ZAPP	Zimbabwe AIDS Prevention Project
ZEPI	Zimbabwe Expanded Program on Immunization
ZNFPC	Zimbabwe National Family Planning Council

Zimbabwe Situation Analysis – Draft for Review

1. Background

At USAID/Zimbabwe's invitation, a four-person MCHIP team visited Zimbabwe from January 18-29, 2010. The team's objective was to conduct a rapid assessment and to develop a strategy and an initial workplan for MCHIP technical assistance in the areas of maternal, newborn and child health, including immunization and post-partum family planning. USAID/Zimbabwe requested MCHIP technical support to address core challenges facing the health sector after a decade of economic deterioration and a human resource crisis that has left its district hospitals and rural health centers without fully qualified staff and crumbling infrastructure.

In the course of the assessment, the MCHIP team conducted an extensive literature review (see list of references in the annexes), key informant interviews with MOHCW, bilateral and multilateral agencies and international and national non-government agencies working the health field in Zimbabwe, and several site visits, including a visit to the Harare Central Hospital and its Midwifery Training School, to an urban health center with the Elizabeth Glazer Pediatric AIDS Foundation (EGPAF) and to a rural district hospital. The team was briefed at the start of its mission by the USAID/Zimbabwe health team and debriefed with them and with the USAID Mission Director prior to our departure from country. (See annexes for a list of the individuals contacted during the assessment visit).

The findings and recommendations from the assessment are summarized in this Situation Analysis. MCHIP's proposal for a multi-year, integrated technical assistance program to address the problems highlighted here can be found in the MCHIP Zimbabwe Proposed Workplan, which is meant to be a companion to this document and vice versa.

2. Basic Facts (2009 or closest year for which data are available)

Demographic indicators

- Total population – 13.3 million (Population Reference Bureau, mid 2007)
- Live Births – 384,000 per year (UNICEF, 2009)
- Life expectancy at birth (years) – 44 males, 43 females (WHO Statistics, 2006)
- Healthy life expectancy at birth (years) – 34 males, 33 females (WHO Statistics, 2006)
- Maternal deaths – 2,784 per year (calculated based on MMR of 725)
- Child deaths <5 yrs - 36,096 per year (calculated based on CMR of 94/1,000 live births)
- Infant deaths – 25,728 per year (calculated based on IMR of 67/1,000 live births)
- Newborn deaths – 11,520 per year (calculated based on NBMR of 30/1,000 live births)

Administrative units

- Provinces – 8 provinces and 2 cities

Districts - 62

Public health facilities (MOHCW)

National Hospitals – 5

Provincial Hospitals – 7 (or 10?)

First referral level hospitals (district, rural and mission) - 181

Clinics and Rural Health Centers – 1,331

Nurse training schools – 45 (MOH)

Midwifery training schools - ? not clear how many are functioning

Nursing schools training Primary Care Nurses (PCN) - 17

Zimbabwe Association of Church Hospitals (ZACH)

Mission hospitals – 126

District hospitals that are church managed – 13

Church-run health facilities have 65% of hospital beds in the country and provide 35% of all medical services

3. Magnitude and causes of maternal, newborn and child mortality

In the 1980's and early 1990's, Zimbabwe had one of Africa's strongest health systems and among its lowest maternal, infant and child mortality rates. HIV/AIDS, the economic crisis of the last decade, and the exodus of trained health workers by the thousands have shaken the country's previously robust public health system and led to a precipitous decline in life expectancy at birth and increases in preventable maternal, newborn and child death.

WHO estimates that life expectancy for Zimbabweans fell from approximately 62 years in 1990, to only 44 in 2008. The life expectancy of women and men is not significantly different; urban rural estimates were not found during this assessment. Internal and external migration as a result of the economic crisis, the government's resettlement schemes and several droughts in recent years make it difficult for the Government of Zimbabwe to accurately track the health status of its population overall. However, several important population-based surveys and special studies have been conducted in recent years including the 2005/2006 DHS, the MOHCW's Maternal and Perinatal Mortality Study carried out in 2007 and the Multiple Indicator Monitoring Survey (MIMS) carried out in 2009.

The MCHIP team reviewed these and other secondary analyses, including the Child Health Epidemiology Reference Group's (CHERG) 2008 analysis for the Countdown to 2015 report¹, the Government of National Unity's Health Sector Investment Case 2010-2012 (draft), the National Strategic Plan for Accelerated Child Survival and Development, Zimbabwe 2010-2015 (draft),

¹ http://www.countdown2015mnch.org/documents/countryprofiles/zimbabwe_20080314.pdf

the Report on the Review of the Expanded Programme on Immunization in Zimbabwe, April 2009, among others. In the following sections we use data from these reports to summarize what is known about the current levels and causes of maternal, newborn, infant and child mortality in Zimbabwe.

	DHS 1994	DHS 1999	DHS 2005/06	Other rates from more recent sources	
Maternal Mortality Ratio (MMR) deaths per 100,000 live births	283	696	555	725	Maternal/ perinatal mortality study, 2007
Under Five Mortality Rate (U5MR) deaths per 1,000 live births	77	102	82	94	MIMS 2009
Infant Mortality Rate (IMR) deaths per 1,000 live births	53	65	60	67	MIMS 2009
Neonatal Mortality Rate (NMR) deaths per 1,000 live births	24	29	24	30	MIMS 2009

Maternal mortality: The probability of dying during pregnancy, childbirth or the postpartum period has increased according to the 2007 Maternal and Perinatal Mortality Study (Manjana, et. al. 2007). In 1994, before the full impact of the HIV/AIDS epidemic or the more recent economic crisis, Zimbabwe's maternal mortality ratio (MMR) was estimated to be one of the lowest in sub-Saharan Africa at only 283 per 100,000 live births. But by 1999, the MMR had almost tripled to 696. And although some improvement was noted in the five years prior to the 2005/06 DHS (MMR estimated at 555 per 100,000), by 2007 MMR had once again risen to an estimated 725 per 100,000 live births. This translates to approximately one maternal death for every 140 live births that take place annually in Zimbabwe. The primary causes of maternal death, as reported in the 2007 study, were HIV/AIDS (26%), post-partum hemorrhage (14%), elampsia/pre-eclampsia (13%), sepsis (8%), abortion complications (6%) and malaria (6%).

The 2007 Maternal and Perinatal Mortality Study assessed the relative importance of the three delays on maternal death. In this study, two different sets of indicators were generated. The first was based on an audit of maternal death notification forms which found that 47% of the maternal deaths were avoidable; 66% were due to the delay in recognizing danger signs and making the decision to seek care; 8% were related to the delay in reaching care after the decision to seek it had been made; and, 26% were related to the delay in receiving appropriate care at a health facility once the woman arrived there. The second part of the study, tracking of over 45,000 pregnancies and investigation of 243 maternal deaths, showed that..."The first delay contributed to maternal death in 137 cases (56.4%), the second to 13 cases (5.3%) and

the third to 27 cases (11.1%). Altogether, the delays contributed to death in 72.8% of the deaths. The main avoidable factors in the deaths were institutional (42.8%), family (31.7%) and personal (25.5%).”

Infant and child deaths: Zimbabwe’s <5 year mortality rate has also increased in recent years, rising from 77 per 1,000 live births in 1994 to 102 in 1999, then declining to 82 during the five years preceding the 2005/06 DHS and climbing once again to 94 per 1,000 live births prior to the 2009 Mixed Indicator Monitoring Survey (MIMS). Infant mortality accounts for over two thirds of <5 mortality and neonatal deaths account for approximately half of all deaths during infancy. The primary causes of infant and young child death are HIV/AIDS (42%), neonatal causes (28%), pneumonia (15%) and diarrhea (12%). (Figure 2)

Neonatal deaths: Neonatal mortality represents approximately one third of all deaths in children < 5 years of age and one half of all infant deaths; there has been no change in its proportional contribution to child or infant mortality over the last decade. The CHERG estimates that the primary causes of newborn death in Zimbabwe are complications of preterm births (34%), birth asphyxia (24%) and neonatal infections (23%). The 2007 Maternal and Perinatal Mortality Study investigated 628 neonatal deaths, with the cause of death known in 616 and the age at death in 506 cases. The timing of newborn deaths followed the global pattern: nearly half of the newborn deaths occurred in the first 24 hours (49%), more than two thirds (69%) occurred during the first 72 hours and 83% occurred before the end of the first week. These findings once again emphasize the importance of intervention during the immediate postpartum/ postnatal period and the first days of life.

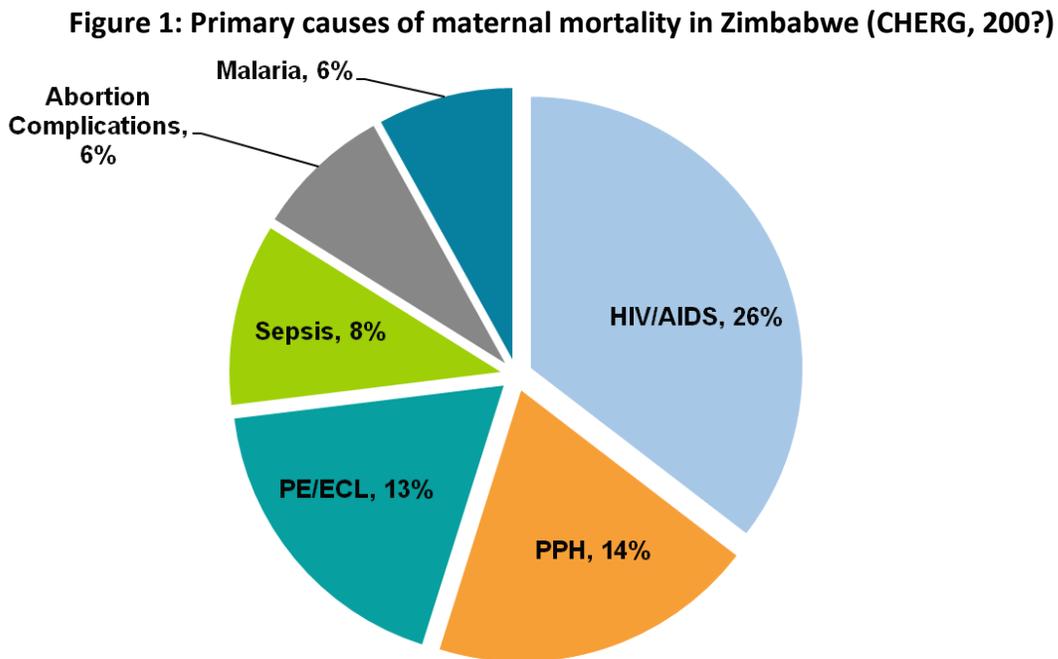


Figure 2: Primary causes of mortality in children <5 years in Zimbabwe (CHERG, 200?)

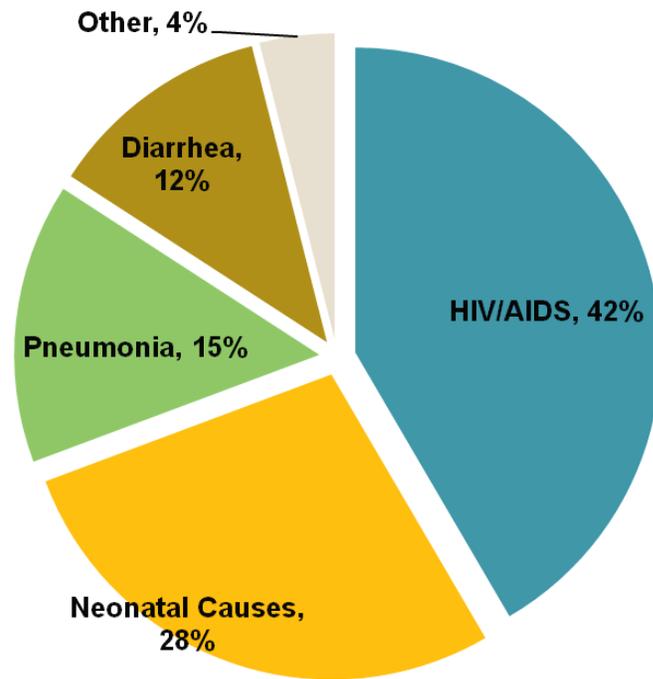
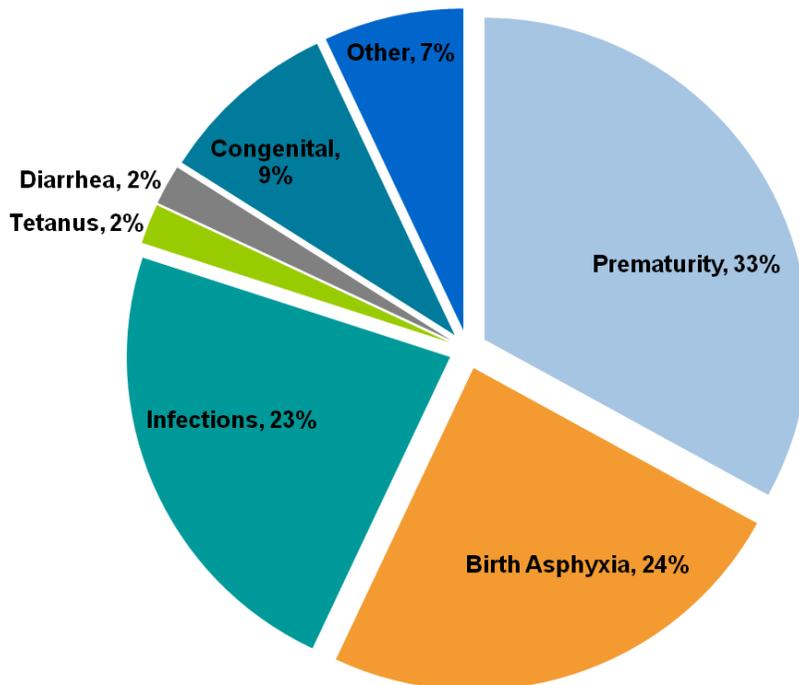
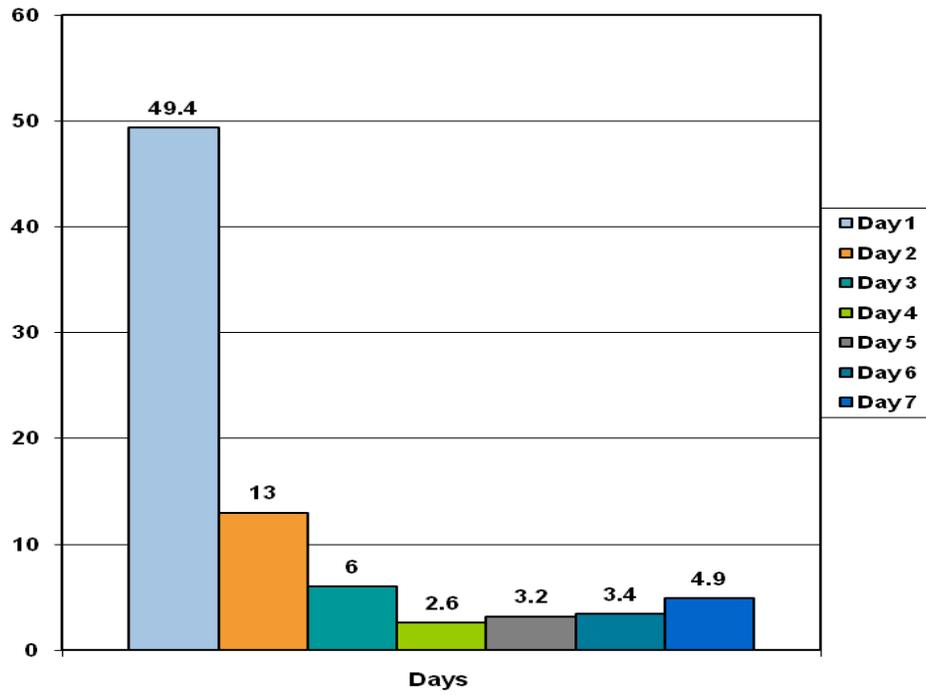


Figure 3: Primary causes of neonatal mortality in Zimbabwe (CHERG, 200?)



**Figure 4: Timing of newborn deaths (% of newborn deaths days 1-7 of life)
MOHCW, Zimbabwe Maternal & Perinatal Mortality Study, 2007**

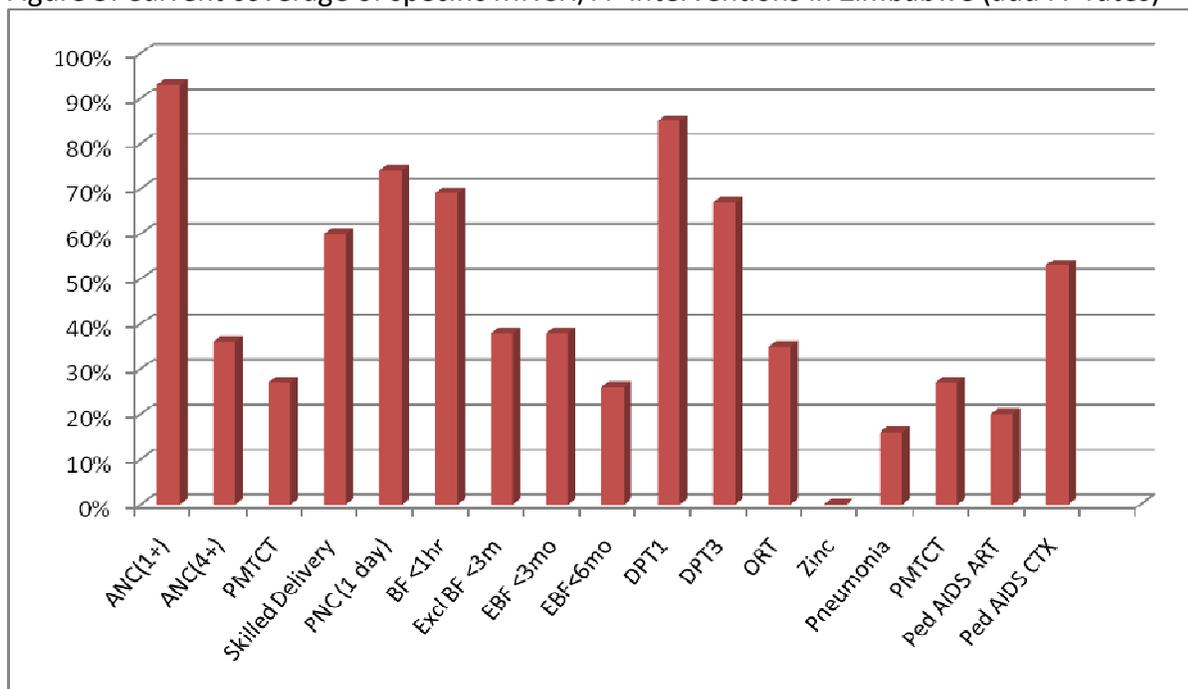


4. Current coverage of high impact MNCH Interventions

Even under the difficult circumstances in Zimbabwe today, the lives of many women and children could be saved by ensuring the quality and increasing the coverage of specific high-impact, evidence-based MNCH/FP interventions. What is known about the current coverage of these interventions is discussed below, with interventions grouped according to when they are provided during the lifecycle and with the other interventions that make up the evidence-based packages that have been shown to lead to significant reductions in maternal, newborn and child mortality. (see Annex 1 for list of packages and specific interventions that are included in each).

In addition to current coverage levels, we summarize what is known/reported about the providers who deliver each of the interventions or intervention packages, at which level of the health system, the enabling policies and strategies that are or are not yet in place and the donors that are investing in each of the intervention areas that were considered for USAID and MCHIP support. We also include our initial conclusions and thoughts about USAID’s role, through MCHIP in addressing coverage and quality.

Figure 5: Current coverage of specific MNCH/FP interventions in Zimbabwe (add FP rates)



Sources: 2009 MIMS and 2005/06 DHS where not collected by MIMS.

a. Focused Antenatal Care (FANC)

The number of antenatal care visits a woman makes during pregnancy is one of the common maternal health indicators, but it does not tell us what happened during antenatal care and this is what is most important. Focused Antenatal Care is defined as antenatal care that includes the following:

- tetanus toxoid vaccination (according to prior vaccination status)
- iron/folate supplements
- malaria prevention and treatment in endemic areas (includes intermittent preventive treatment [IPTp], use of insecticide treated net [ITN] and treatment for malaria disease during pregnancy)
- prevention of Mother to Child Transmission of HIV (PMTCT) (includes voluntary counseling and testing [VCT] during pregnancy, ARV treatment including MER for HIV+ women when indicated)
- detection and referral for maternal complications
- birth preparedness/complication readiness
- counseling about nutrition, hygiene, breastfeeding
- counseling on FP options based on woman's desire to space or limit births (birth spacing, LAM, and interval methods for women who want to space their families and long-acting and permanent methods (LAPM) immediately postpartum for women who want to limit their families)

Antenatal care in Zimbabwe is provided at Rural Health Centers (RHCs) by Primary Care Nurses (PCN), and at District Hospitals by Midwives and General Registered Nurses (GRN). Antenatal and PMTCT services are integrated and VCT, niverapine and cotrimoxazole prophylaxis are provided by both RHCs and DHs. Treatment of HIV+ women requires a CD4 test; treatment is initiated only if CD4 count is below the cutoff. CD4 tests and initiation of Anti-Retroviral Therapy (ART) are available only at DH level in most of Zimbabwe, although ARV prescriptions are refilled by RHCs.

Antenatal care coverage is very high for at least one visit (93%), but low for the prescribed 4 visits (36%). The most recent data on coverage with TT2 and iron folate during pregnancy is from the DHS 2005/06. At that time, TT2 coverage was 55% during the last pregnancy, while coverage with iron/folate was 43%. VCT rates in antenatal clinics are high, but the number of HIV+ women who are enrolled in PMTCT is still only 27%. (Source unclear; need to confirm this rate). PMTCT and treatment issues are dealt with in the separate PMTCT section below. Coverage rates for other components of FANC were not found. There is clearly room for improvement in the delivery of quality antenatal care.

Donor support: UNICEF provides the basic FANC commodities in the PHC packages it supplies to DHs and RHCs. Support for PMTCT and antenatal care clinics is coming from GFATM, USAID, DFID, and other partners (see PMTCT/pediatric HIV section below.) The World Bank is currently conducting a facility assessment, with participation by the Zimbabwe Association of Church Hospitals (ZACH) and others. This assessment should provide useful information about the readiness of health facilities and providers to provide FANC and the other packages of maternal and newborn care described below, but not necessarily the content or quality of that care.

Conclusions: Use of antenatal care is high, but more in-depth information about the quality and the barriers to its use are needed before deciding whether and how to prioritize MCHIP's attention to FANC. Raising the PMTCT enrollment rate for HIV+ women is highest priority given high HIV rates and role of HIV/AIDS as cause of death in women and young children. (see PMTCT discussion below).

b. Skilled Birth Attendance and Essential Maternal and Newborn Care – all births

Countries define skilled attendance at birth differently. Evidence shows that the essential elements of skilled birth attendance and care for women and newborns include:

- Essential care during labor and delivery
 - Clean delivery
 - Use of partograph
 - Active Management of the Third Stage of Labor (AMTSL), including use of a uterotonic, controlled cord traction, and uterine massage to prevent postpartum hemorrhage (PPH)
- Essential newborn care
 - clean cord care
 - thermal control (drying and warming; delayed bathing)
 - immediate and exclusive breastfeeding
 - basic newborn resuscitation

Ideally, skilled birth attendance and essential maternal and newborn care should be available at all RHCs and all DHs. This should include support of normal labor and birth through use of infection prevention practices; use of the partograph to detect abnormal progress of labor and prompt timely referral; AMTSL to prevent postpartum hemorrhage; and essential newborn care. These interventions alone will contribute to decreasing complications caused by infection, prolonged labor/fetal distress, and postpartum hemorrhage, all of which contribute to maternal and newborn morbidity and mortality. After becoming proficient in these skills, providers need continuous supportive supervision to ensure that they put them into practice correctly and have the necessary equipment and supplies to continue to do so. As the facility and the providers are perceived by the community as offering valuable services, women are generally more likely to seek their services for labor and birth.

According to the Maternal and Perinatal Mortality Study (2007), 38% of deliveries are in hospitals, 27% occur at the RHC or municipal clinic level and 30.5% are at home or in the home of a TBA. The 2009 MIMS showed comparable findings at the hospital level but further drift away from formal health facilities and back to home births, particularly in rural areas. In the two years prior to the MIMS survey, 40% of women reported delivering in hospitals, only 17% in clinics, 39% at home (50% in rural areas), and 4% in other locations. This represents a significant decline in institutional births since 1999 when 72% of Zimbabwe's women delivered in hospitals or clinics.

The MOHCW and Zimbabwe Nursing Council have trained over 4,000 Primary Care Nurses since 2004. The pre-service curriculum for the PCNs includes the basics of essential maternal and newborn care, but to our knowledge, there has been no systematic refresher training and only limited supervision for trained PCNs once they are posted. Their skills in maternity and newborn care are reported to be weak and as the figures above show, although all PCN posts are filled, they are attending fewer and fewer births. A number of factors are blamed, but most important is the perception on the part of the PCN and the prospective client that the PCN does not have the skills or the equipment to provide quality maternity care.

Essential newborn care (ENC) should be available for all newborns regardless of the place of delivery. By definition, ENC includes early initiation and promotion of exclusive breastfeeding; maintenance of warmth by drying and delaying first bath by at least 24 hours (note: need to determine if the delayed bathing recommendation is applicable in the context of Zimbabwe's high HIV prevalence), hygienic cord and skin care, and basic stimulation/resuscitation when this is required. According to the 2005 DHS, only 69% of newborns were breastfed within the first hour of birth and this rate may be worsening with the increasing numbers of home births. Essential maternal and newborn care should be available at all levels of care, from home to hospital. Very little is known about whether it is or not in Zimbabwe today.

Donor support: Except for the on-going PCN training program, we found no donors or specific government programs directly supporting safe birth or essential (versus emergency) maternal and newborn care at any level. The European Union will fund the MOHCW (Nursing Services) to address the gap in PCN maternity knowledge and skills beginning in 2010, but only one year of funding has been committed and future support is uncertain.

Conclusions: MCHIP should support the MOHCW, EU and others to design and test different approaches to PCN capacity building, both in-service and on-the-job. Consensus does not exist on the appropriate role in birthing care for the PCN/RHC (versus the district hospital). Before embarking upon or joining the MOHCW and EU in their ambitious PCN training efforts, USAID and MCHIP should first document the knowledge and skills of the PCNs and then participate in discussions at the national level about their future.

c. Basic and Comprehensive Emergency Obstetric and Newborn Care

- Basic Emergency Obstetrical and Newborn Care (BEmONC) for women with complications:
 - Intravenous antibiotics, uterotonics and MgSO₄
 - Removal of retained products of conception
 - Manual removal of placenta
 - Assisted vaginal delivery
 - Neonatal resuscitation (bag and mask)
- Comprehensive Emergency Obstetric and Neonatal Care (CEmONC)
CEmONC includes all seven BEmONC functions plus:
 - Cesarean section
 - Blood transfusion

Approximately 15% of all women are at risk of the pregnancy and childbirth-related complications that require BEmONC and/or CEmONC capability. WHO recommends 4 BEmONC and 1 CEmONC sites per 500,000 population. Zimbabwe's compliance with this recommendation was previously high but is currently unknown given changes in health personnel at the DH and RHC level.

In Zimbabwe, midwives receive didactic information about essential and some BEmONC interventions and may practice skills on anatomic models, but opportunities for hands-on clinical practice are limited. This means that many front-line midwives are unprepared to provide this care as new graduates. Until recently, the national health policy was not supportive of their management of assisted deliveries (forceps or vacuum). Although a recent circular has now given permission for midwives in RHCs to perform assisted deliveries, there are reportedly very few midwives remaining at this level (because of the human resources and economic crisis that has seen an exodus of post-diploma nurses, including midwives, from the public service). PCN training does not prepare them to perform many essential obstetric and newborn care skills or the majority of the BEmONC signal functions. Since PCNs are now the primary personnel in almost all RHCs, we conclude that BEmONC is available at DH but not at RHC level.

CEmONC includes all of the BEmONC functions, plus caesarian section and blood transfusion capability. By policy, CEmONC is available at all District and Provincial Hospitals. Clinical officers and junior doctors are both authorized and trained to perform c-sections, with the assistance of nurse anaesthetists. In reality, the availability of blood at a reasonable cost is a problem in the country and nurse anaesthetists are in short supply. Many hospitals are also reported to be in need of repair and basic supplies, to the point that women are said to have to bring their own water and supplies for both normal and emergency deliveries in some facilities.

For women in rural areas who live at great distance from the nearest BEmONC or CEmONC provider, Zimbabwe has a tradition of **maternity waiting homes** or shelters at district and

provincial hospital level. These centers are well attended, but many have deteriorated in recent years because of the economic crisis. There is high interest in the MOHCW and among the donors in resurrecting or rehabilitating maternity waiting shelters. The MCHIP team does not question the demand for this intervention, but we do have concerns about the cost benefit in terms of potential lives saved. Because it is very difficult to predict who will develop the complications that require CEmONC services, all women would have to be referred to the maternity waiting homes. Even if half of them complied with referral, they would quickly overwhelm the shelters and the DH birthing facilities and this would lead to lower quality care and potentially worse outcomes for women and their newborns. There has been a recent assessment of maternity waiting homes and there is reportedly a new government policy that the MCHIP team was not able to access during its brief visit. We look forward to reviewing these documents when they become available and to formulating a recommendation to guide USAID's support.

Donor support: DFID, UNFPA, European Union and UNICEF are supporting improved maternal and newborn care in the following ways:

- DFID funded the 2007 Maternal and Perinatal Mortality Study and the development of the Zimbabwe National Maternal and Neonatal Health Road Map 2007-2015. DFID also contributes to and is acting as the coordinator for the Multi-Donor Trust Fund, which will provide block grants to districts to strengthen their health services, including their maternal and newborn health services. DFID has contracted with LATH to provide technical support to the Reproductive Health Division (Unit?) of the MOHCW's Preventive Health Directorate and staff support for the Technical Working Group on Maternal and Newborn Health. DFID has also supported a classroom-based refresher training pilot for district hospital staff involved in maternal and newborn emergency care, principally junior doctors, clinical officers, midwives and nurse anesthetists. This training was not competency based and it appears to have been conducted at the national level. In addition no follow up occurred of providers who attended this training to ensure use of newly acquired skills or even that they had the necessary equipment, medicines and supplies to carry them out. Several people interviewed expressed concerns about the approach, including the current LATH advisor.

Update from 4/2010: DFID continuing support for MNH: DFID has been supporting MNH through LATH (advocacy, coordination and support to RH Unit through MNH Working Group) and the Liverpool School Life Saving Skills (LSS) Training for district and RHC staff, while also providing major support for PMTCT and HIV and FP commodities. LATH is working primarily on advocacy and coordination. Their Advisor believes this is paying off, as MOHCW is now leading the MNH working group (RH Unit Acting Head, Mrs. Nyandoro). LATH is also attempting to revitalize the RH Steering Committee, which is at a higher level than the MNH working group and should be informing/making policy. This group exists but has been dormant. Director of Preventive Care, Dr. Munlanga (sp?) is taking an interest and will probably lead this higher level

group. The RH assessment described above was important effort of the MNH working group. It was undertaken to guide action planning. There is a planning meeting in May that will involve the MOHCW, UNFPA, WHO, UNICEF, University, EU and USAID; goal is to operationalize the MNH Road Map. It would be good for MCHIP's first MNH TA visits to coincide with this meeting. (Get dates and identify MCHIP TA)

DFID is also supporting the **Life Savings Skills Training** through a grant to the Liverpool School, the University Medical School and the MOHCW RH Unit. The training is in service and based on modules developed by the Liverpool School that have been used in five countries in the subregion, to date. An initial TOT course was held about three years ago; approximately 75 trainers have been trained across the country since then. They are mostly provincial hospital staff and staff of the University and large urban hospitals. LATH estimates that 32 of 66 districts have now had the LSS training. The recent RH assessment showed that 33% of the RHCs sampled (N=32) and 63% of the District Hospitals sampled (N=21) have at least one staff member who has received training. The next round of training is already being planned (Mrs. Nyandoro has the details) and Liverpool will be putting in a new proposal. DFID and LATH recognize that training is not competency based; lack of monitoring and follow-up after training is also an acknowledged problem. To date, there has been no systematic effort to assess the results of the LSS training or the approach used. Louise Robinson believes that this because the training program is part of a regional effort that has fallen through the cracks at country level; consequently, there has been a gap in funding for active follow-up.

The LSS training network is also involved in work on **maternal death audits** in hospitals. A recent workshop held with 50 OB/Gyns and Pediatricans, as well as nursing staff. The LATH Advisor is excited about the potential for these audits; he mentioned that Bob Pettison, Pretoria Medical School, is one of the technical advisors.

Plans for the **MNH Resource Center** are firming up, with Dr. Steven Munjanja in the lead. The Center should pull resource persons from various department of the University. Its primary function is intended to be Ops Research. There is already an MOU with the MOHCW and a constitution has been written. DFID's objective is to get the MNH Center to the point where it can sell its services to others. DFID was not expecting it, but links have been forged between the MNH Center and a new UNICEF-supported M&E/OR group that is being partially funded by CDC and led by Sue Laver. At present, it is very likely that the MNH Resource Center and Dr. Munjanja himself will also be housed within this UNICEF center. This is not entirely to DFID's liking, but because of the additional resources, they will not stand in the way. (Need to find out more about the UNICEF M&E center and CDC's involvement.) The connection between the MNH Resource Center and UNICEF should not affect Dr. Munjana's and his group's ability to work for others; however, DFID warned that his ability to administer funding is still limited, so careful consideration should be given to best way to bring the group into MCHIP activities, i.e., QoC study and other formative and baseline data collection, as previously discussed. LATH has money

for operations research activities and UNICEF will also do some networking with funders on the Center's behalf (not clear which Center).

- UNFPA provides essential reproductive health commodities in package form to an unspecified number of DHs and RHCs every year. (We were not able to get an estimate of the number of facilities covered by this donation.) UNFPA is also subsidizing a voucher program to allow equitable access to blood transfusion. Blood transfusion is extremely costly in Zimbabwe at \$100/unit of blood. In addition, UNFPA in collaboration with UNICEF and WHO is supporting the rehabilitation (cooking facility; waste disposal) of 10 maternity waiting homes which will be linked to sites that provide CEmONC services. 10 initial sites have been selected for this purpose. Finally UNFPA is also providing HIV testing kits including rapid syphilis tests.
- European Union has supported PCN pre-service training and has 1.5 million Euro set aside in 2010 for retraining of 600 PCNs in maternal and newborn care. A plan for this training was being developed by the Nursing Division of the MOHCW's Curative Health Directorate during the assessment visit. The possibility of extending the pre-service PCN training by six months (to 24 months) for new PCNs and of offering a refresher training of up to 6 months to improve essential obstetrical and newborn skills of PCNs who are already in post was being discussed. The EU is also supporting a study of the blood supply system with the intention to provide technical assistance and funding to increase the availability of blood transfusion and reduce the cost.

Update April 2010: EU Support for PCN training and measles/child health days campaign: *EU is still the only supporter of the PCN training planned by the Directorate of Nursing Services. The Rep has not yet seen the plan, but EU supported the consultant we met in January who was doing a review of the midwifery curriculum and PCN training needs. EU believes that the PCNs should be upgraded to midwifery status over time and trained incrementally. 6 month course will not be enough, but competencies of a midwife are known, so training should be designed to develop those competencies over time. This is how the Environmental Health Assistant training has been viewed—as a path to EHTechnician. EU will administer training funds through Crown Agents (service contract). Crown Agents will develop the program estimate with the MOHCW for the training.*

- UNICEF has not worked in maternal or newborn health until recently but plans to support the midwifery schools and has a proposal before the Japanese government that would provide \$2.2 million for refurbishment of maternity waiting homes.

UPDATE April 2010: UNICEF's growing support for maternal/newborn/child health and posting of new Child Health Advisor : *UNICEF has secured a \$2 million Japanese government grant in support of midwifery schools (\$200K for books, computers and other IT resources; no*

models) and rehabilitation of maternity waiting shelters (\$1.8 million, approximately 50 shelters attached to provincial and district hospitals, but sites not yet defined). Their new Child Health Advisor, Dr. Assaye Kassie, has been in country since March. He is working with the group that is working on the Child Survival and Develop Strategy and is interested in promoting “newborn corners” in hospitals and RHCs and investing in resuscitation and neonatal sepsis. He is familiar with HBB field test in Ethiopia and supportive of involving Ethiopia in the GDA. However, he stated that mannequin used by the Latter Day Saints is preferable to Laerdal’s because it is more rigid and easier to practice use of bag and mask. We agreed that this should not be a show stopper. He was not as keen on investing in KMC as a standalone intervention (i.e., quick win), but was supportive of including it as part of the essential and BEmOMNC package for facilities conducting births. UNICEF is also supporting national child health days in May and national measles campaign (see below).

- World Bank is planning to support a health facility assessment in conjunction with a proposed Results-Based Financing grant. We were told that this assessment will provide useful information about facility readiness, but not the quality of BEmONC or CEmONC provided by DHs and RHCs. We have not yet been able to review copies of the protocols for this study.

Conclusions: The need to make hospitals CEmONC ready is clear, but relatively few women will ever need CEmONC services and it is difficult to predict who those women will be. On the other hand, essential maternal and newborn care should be readily available to all, and if access to the seven BEmONC signal functions was more widely available, as shown in the LiST analysis, many more maternal and newborn lives could be saved. There are a number of donors supporting or planning to support CEmONC through facility upgrades, including renovations of maternity waiting homes, CEmONC provider training and equipment. These inputs are not normally USAID’s comparative advantage, nor do we believe that MCHIP would be a cost-effective vehicle for tackling CEmONC at current funding levels.

MCHIP recommends that USAID support, instead, the design and implementation of BEmONC refresher training for District Hospitals and high-volume Rural Health Centers, and that the project work with the MOHCW, EU and others to improve the quality of the essential maternal and newborn care that should be provided by all PCNs/RHCs. To document current gaps in knowledge and practice and to guide the design of a competency-based training/mentoring program, a formal Quality of Care (QoC) study is recommended. The scope of the QoC study should be national; the proposed refresher training program would start in a few sites and be expanded based not only on the experience in those sites but also on MOHCW and partner buy-in. The national QoC study results would also be used for advocacy and to mobilize the government and its partners around a coordinated plan of action.

MCHIP should also consider including Zimbabwe in the Helping Babies Breathe Global Development Alliance that is currently being planned as a “quick win” in Year 1. See discussion of this new GDA in the MCHIP/Zimbabwe workplan.

d. Special care for low birth weight newborns, Kangaroo Mother Care (KMC)

Kangaroo Mother Care – also known as skin to skin care - has proven to be as effective as an incubator for temperature control of low birth weight babies at facility level. KMC is defined as “early, prolonged and continuous skin-to-skin contact between a mother and her low birth-weight infant, both in hospital and after early discharge, until at least the 40th week of post-natal gestational age, with ideally exclusive breastfeeding and proper follow-up” (*Acta Paediatrica 1998*). There has been a long history of KMC implementation in Zimbabwe. Introduced for the first time in Manama missionary hospital in 1988², KMC is reportedly practiced in some central hospitals as well as select district hospitals. A KMC booklet exists but there are no service guidelines or indicators for tracking KMC services.

While only 11% of Zimbabwean babies are low birth weight/preterm (UNICEF 1999), we know that they contribute from 40%-60% of all neonatal deaths. In light of this, there is a need to increase the coverage and quality of interventions targeted at preventing and managing preterm/low birth weight babies. The current situation (lack of skilled staff, limited equipment including incubators, lack of electricity /power outages, poor maintenance) limits the capacity of the health system to provide access to incubator care for all LBW babies who need it. KMC has been shown to be a low-cost, effective alternative to incubator care in reducing mortality among LBW babies. For KMC to be widely available, there is a need to ensure large scale coverage by: 1) standardizing /harmonizing guidelines for KMC; 2) ensuring access to KMC in most district hospitals ; 3) ensuring appropriate follow up of discharged KMC newborns at the RHC level

Donor support: There is no donor support for KMC that we were able to identify at this time.

Conclusions: Because of its proven benefits to mothers and infants (see List analysis below), revitalizing facility-based KMC where it is not being practiced could be another “quick win” for MCHIP and USAID. More information is needed about the degree to which KMC is known and practiced in government health facilities before deciding to move this forward with this under MCHIP.

e. Early and exclusive breastfeeding

Epidemiology: Early and exclusive breastfeeding is a critical component of essential newborn care and should be initiated in all newborns. Trends show a steady increase in newborns

² *Tropical Doctor, April 1994, 24: 57-60*

breastfed within the first hour of life from 43% in 1994, to 63% in 1999, and 69% in 2005/2006 (DHS data). However, exclusive breastfeeding for children under six months remains very low in Zimbabwe. Only 38% of children under 3 months and 26% of children less than 6 months were exclusively breastfed (MIMS 2009). 2005/2006 DHS data showed that only 17% and 14% of babies were exclusively breastfed at 3 and 6 months respectively. Challenges persist in changing community practices with respect to adherence to exclusive breastfeeding in the first 6 months of life. In addition, mixed guidance about regarding breastfeeding particularly in HIV exposed infants may be contributing to the low prevalence. A major positive finding is that a significant proportion of mothers continued to breastfeed their children up to 2 years.

Appropriate breastfeeding is one of the most cost-effective interventions to ensure child survival (Lancet series 2005). WHO recommends 1) initiating breastfeeding within the first hour of life as part of ENC and 2) exclusive breastfeeding, from birth until six months of age and thereafter, continuation of breastfeeding until 2 years or beyond. At six months, appropriate complementary foods should be introduced.

Recent WHO guidelines released in November 2009 reaffirm the guidance to be applied to all babies including HIV exposed babies. To reduce HIV transmission through breast milk, HIV infected mothers should be provided with ART or antiretroviral prophylaxis. Breastfeeding should only be stopped gradually (over a period of one month) and only after nutritionally adequate and safe alternatives can be provided. Programmatic implications include the need to increase uptake of PMTCT in order to better identify HIV positive mothers and assess the need for ARV or AR prophylaxis.

Exclusive breastfeeding also confers benefits to the mother including pregnancy prevention in the first six months in the absence of menses. To maximize the benefits of EBF, there is a need to strengthen infant and young child feeding guidance and to ensure early and exclusive breastfeeding is promoted along the continuum of care.

Donor support: DFID is funding a breastfeeding campaign that is deemed to be successful and would be interested in increasing funding if additional donor support were available. UNICEF has highlighted the need to strengthen early and exclusive breastfeeding as part of the infant and young child feeding guidance. EGPAF is rolling out the new guidance on MER and IYCF.

Conclusions: MCHIP will collaborate with EGPAF and UNICEF to ensure ENC/PNC/PPFP/PMTCT guidelines and training at all levels include appropriate guidance on early and exclusive breastfeeding. More information is required about the PSI-supported breastfeeding campaign before determining if there is a role for MCHIP in its support.

f. Postpartum/postnatal visit within first 2 days

Epidemiology: According to recent studies, early postnatal care could prevent 30%-60% of newborn deaths in high mortality settings. For this reason, WHO and UNICEF now recommend

home visits in the first week of life to improve newborn survival.³ The Zimbabwe Maternal and Perinatal Mortality Study, 2007, found that 49% of newborn deaths occurred within the first 24 hours of life and that two thirds were within the first 72 hours. The study found many more newborn deaths among infants born at home than among those born in a hospital or clinic. With the increasing numbers of home births, this is indeed cause for alarm. Of concern is also the fact that women who deliver in health facilities are normally released from the hospital or health center with their newborns within 12 hours of a birth.

Zimbabwe's rate of postpartum care is high compared to other African countries. According to the Maternal and Perinatal Mortality study, 74% of women attend the prescribed 10-day postnatal visit and over 80% attend the 6-week visit. Women giving birth in facilities and at home were equally likely to attend. The problem is that the first postpartum/postnatal visit at 10 days is clearly too late to make any real difference in newborn mortality.

The growing number of home births and the lack of community-based care of any type for women and newborns in the days after a birth are a serious problem when considering alternatives for reducing newborn deaths and infant mortality.

Donor support:

- We did not hear of any donor or MOHCW initiative to change the post-natal care visit.
- WHO and UNICEF report assisting the MOHCW to adapt and print the *Community-Based Care for Mothers and Newborns: Manual for Village Health Workers, 2009*; however, the recommendations contained in the recent WHO/UNICEF Joint Statement have not yet been included, so it is in need of updating and adaptation.
- UNICEF's support for the VHW training in 4 districts is a start at revitalizing this important link between health facilities and families in their own communities. We were not able to get a copy of the VHW training curriculum, but were told that it will, once the training starts up again, including the CB-MNH content.

Conclusions: Raising awareness about the importance of early home visits for mothers and newborns and contributing technically to the reformulation of national policies on postpartum and postnatal visits would be very appropriate USAID investments through MCHIP. MCHIP suggests a national launch of the joint WHO/UNICEF statement encouraging early home visits and is prepared to participate with the MOHCW, UNICEF and others in updating and adapting the Community-Based Care for Mothers and Newborns module before it is rolled out in VHW training nationwide. In future years, MCHIP would also be prepared to assist the MOHCW as it rolls out this content as part of the effort to revitalize and retrain the VHWs.

³ WHO/UNICEF Joint Statement: Home visits for the newborn child: a strategy to improve survival, 2009

g. Immunization

Immunization is one of the most cost-effective child survival interventions, preventing over 2.5 million child deaths globally each year. There is the potential to cut the remaining 9+million child deaths by up to 25% each year with the introduction of existing vaccines that have not been available until recently in most developing countries—including vaccines against haemophilus influenza type b (hib), pneumococcal and rotavirus disease. (This estimate is based on WHO global estimates. Impact may be higher or lower in Zimbabwe’s case because of high HIV-related infant and child death rates.)

After having successfully increased immunization coverage in the 1980’s and 90’s, Zimbabwe has experienced declining coverage rates since around 1998. The 2009 MIMS (2007/08 coverage) found that only 49% of children aged 12-24 months of age were fully immunized by the time of the survey--DTP/HepB+Hib1 coverage was 85%, DTP3/HepB+Hib coverage was 67%, and measles coverage was 77%.⁴ The MOHCW/EPI estimates that routine immunization coverage in 2009 was lower than in 2008 (DTP/Hepb+Hib1 84%, DTP/Hepb+Hib3 60% and measles 64%). The DTP1-3 drop-out rate is very high at 28.5%. WHO recommendations are that drop-out should not exceed 10%. High drop-out in situations with good coverage of at least the first dose of DTP/HepB+Hib normally indicates a problem with the regular and reliable provision of immunization services.

Because of the decline in routine coverage, Zimbabwe increasingly depends on semiannual Child Health Weeks and disease control campaigns to reach children with even one or two doses of vaccine per year. Prior to the economic crisis, Zimbabwe also used a mobile outreach strategy to take multiple maternal and child health services, including routine immunization, to more remote communities. This supermarket approach was reportedly popular among staff and villagers alike, and there are calls to reintroduce it. The costs may be prohibitive, however, except in the most remote locations. There does not appear to be a tradition of outreach from RHCs into surrounding communities, which would be much less expensive if implemented as it is implemented in other countries.

The 2009 EPI Review addressed falling coverage rates and pointed to human resource issues (loss of trained/experienced staff in RHCs), problems with the cold chain, rejection of vaccination and other medical services by those practicing the Apostolic faith, vaccine stock outs, poor planning and data use, lack of community involvement (because of inactive VHW cadres), the discontinuation of mobile outreach sessions and limited supervision of peripheral health facilities as major implementation problems.

⁴ The standard routine immunization indicator is based on a denominator that includes only children up to 12 months of age. MIMS rates therefore overestimate coverage and underestimate the decline since the 1990’s.

The results of declining immunization coverage are being felt in the measles epidemic that started in September 2009. As of February 19, 2010, over 1,480 suspected cases of measles and 106 deaths (104 in the community, 2 institutional deaths) had been reported. Very few of the measles cases have been fully investigated, but of those that have, 77% of cases reported not being vaccinated and 23% reported having received at least one measles vaccination. Although older children are also affected, the attack rate has been highest in children under 5 years of age. The scope of the current measles epidemic is surprising because Zimbabwe has conducted at least 3 national measles supplementary immunization activities (campaigns) since 2002, the last one in 2009.

Resistance to vaccination and medical care among those practicing the Apostolic faith is associated with low measles immunization coverage. The quality of last year's measles SIA has been pinpointed as a problem and it is possible that some districts have vaccine management and cold chain problems that are leading to vaccine failures among those who were vaccinated but contracted measles anyway. The MOHCW and its immunization partners have identified high risk districts and are intensifying surveillance and investigation of suspected measles deaths. Efforts are also being made to ensure proper case management by health facilities, to inform the public and media about the symptoms and need to seek medical care for measles, and to conduct targeted vaccination activities in high-risk districts and among high risk population groups. (WHO Inter-country Support Team for Eastern and Southern Africa, Feb 2010)

Increasing Zimbabwe's infant immunization coverage with existing vaccines, including but not limited to measles vaccination, would save the lives of many infants and young children in the future. Adding the two new vaccines that are now available through the GAVI Alliance— pneumococcal and rotavirus vaccines—would more than ____ the number of lives saved (see LiST analysis). Although Zimbabwe had intended to apply for pneumococcal vaccine this year, it does not currently meet the new eligibility criteria established by the GAVI Alliance because its routine immunization coverage has fallen below the 70% threshold.

Donor support

- WHO and UNICEF are the primary supporters of the national EPI. UNICEF purchases all of the country's vaccines except for the pentavalent vaccine, which is provided by the GAVI Alliance, and supports the delivery of vaccines and other EPI commodities nationwide.
- Rotary and Helen Keller International are members of the immunization ICC, but they seem to participate primarily in the Child Health Weeks and disease control SIAs.
- USAID has also contributed to the campaigns in the past, but not to the routine immunization program.

Conclusions: The MCHIP team recommends assistance to the national immunization program, first to raise routine coverage and then to assist ZEPI to prepare a plan and application for the introduction of pneumococcal vaccine. This is considered by the MCHIP team to be a child

health “best buy” and one in which USAID has a comparative advantage through MCHIP. Revitalizing and using the RED approach to improve the planning, management and monitoring of routine immunization services, specifically in districts with large numbers of unimmunized and partially immunized children would make sense as RED is a known approach. Orientation/refresher training and more regular supervision of the PCNs who provide most of the country’s routine immunization services also appear to be necessary.

Update April 2010: *Measles campaign is being combined with Child Health Days and will include children from 6 month to 15 years of age. Dates are early May; a month earlier than last year because of the epidemic. According to UNICEF, the goal is to break transmission by protecting those areas that haven’t yet had cases. Vitamin A and other antigens will also be offered during campaign to children who have missed vaccinations. WHO and UNICEF have been successful in raising funding for the campaign/health days. Budget is over \$8 million. EU and UN emergency funding of approximately \$5.5 million is committed and vaccine supply seems to have been promised through UNICEF/Copenhagen. Nature of post-evaluation coverage survey is not well described. MCHIP has expressed interest in standard 30-cluster coverage surveys at province or district level so that findings can be used to establish the actual baseline coverage and to target routine immunization support to districts with largest numbers of unimmunized children. It is not clear who is conducting this study.*

Update June 2010: *Measles campaign and Child Health Days were underway. Provincial coverage surveys planned and ready for start-up immediately following the Child Health Days. Survey protocol divided into three parts to measure results of measles campaign on children <12 months and <15 years.*

h. Management of childhood illness with a focus on diarrhea - ORT/zinc, pneumonia, and malaria in malaria endemic areas

Pneumonia: Pneumonia is one of the leading causes of child mortality. Per the MIMS 2009, only 16% of children <5 with suspected pneumonia had received an antibiotic, with a bias toward those in urban (25%) versus rural (14%) areas. Haemophilus influenza and pneumococcus bacteria are major causes of pneumonia in young children.

With assistance from the GAVI Alliance, Zimbabwe’s EPI started giving Hib vaccine (in the form of pentavalent DTP/Hepb+Hib vaccine) in 2007. This is expected to have an impact in lowering the incidence and mortality from pneumonia. Introduction of pneumococcal vaccines would further reduce child morbidity and mortality, but as explained above, Zimbabwe is not yet eligible to receive subsidized pneumococcal vaccines from GAVI. Amoxicillin is the first-line antibiotic recommended for pneumonia treatment in health facilities. PCN training has included IMCI, so it is believed that PCNs are providing an acceptable quality of pneumonia care, but there has been no formal assessment or evaluation to confirm this.

Zimbabwe has not adopted a policy of community-based treatment for pneumonia, which could also have a major impact on mortality from the disease. Other challenges in managing pneumonia at the district hospital and RHC level include the lack of oxygen concentrators. The European Union (EU) Commission to Zimbabwe is supporting (600,000 Euros in 2010) an activity that will address the availability of medical gases (with a focus on oxygen) in district hospitals, which may help to address this problem.

Diarrhea: Diarrhea is another cause of preventable child mortality in Zimbabwe. As in most countries, diarrhea prevalence in children and adults is seasonal. Population-based surveys, including the 2005/6 DHS, 2009 MIMS and 2008 Zimbabwe Micronutrient and Nutrition Surveillance survey) estimate diarrhea prevalence in children under five (during the 2 weeks preceding each survey) to range from 11-20%, with no sex or urban/rural differentials. The MIMS 2009 found that 72.8% of households had access to an improved source of drinking water and that 33% of households with unimproved sources were using appropriate treatment methods. It also found 60% of households using a sanitary means of excreta disposal. Although these rates are relatively high when compared with other countries in the region, Zimbabwe's recent cholera epidemic highlights problems with the country's deteriorating potable water and sanitation systems. As of January 2009, WHO reports that cholera has caused 1937 deaths with 38334 suspected cases in 55 of Zimbabwe's 62 districts. The case fatality rate (CFR) is 5.1%.

Until 2009, national policy was to recommend homemade sugar salt solution for treatment for diarrhea in the home and packaged Oral Rehydration Salts (ORS) only in health facilities. There appears to have been a high rate of compliance at household level with this policy, as the DHS 2005/6 and the MIMS 2009 reported that 61% and 58% of under-5s with diarrhea in the two weeks prior to each survey were given homemade salt and sugar solution. This is an indicator of high community awareness and acceptance of this particular technology; however, it has also been pointed out that sugar and salt have been in scarce supply in some communities during the economic crisis, including since the start of the recent cholera epidemic.

In 2004, WHO and UNICEF issued a joint statement recommending the treatment of diarrhea with zinc and a new low osmolarity ORS formula, instead of the previous WHO/UNICEF product. Zinc is associated with a 25% reduction in the duration of acute diarrhea, as well as a 40% reduction in treatment failure and death in persistent diarrhea. Low osmolarity ORS has been shown to reduce stool output, vomiting and the use of intravenous therapy when compared to the original ORS formula.⁵ Zimbabwe started the rollout of low osmolarity ORS and zinc in 2007, through the IMCI program (see below). A laminated job aid was produced to introduce the new protocol for diarrhea management, but it has been slow to reach all the health facilities. This may be because the national drug policy changed to include both low osmolarity ORS and zinc only in 2009 or because of lack of resources for the roll-out or both. Based on the policy change, ORS may now be supplied at community level (a change over the earlier facility-

⁵ WHO, The Treatment of Diarrhoea: A manual for physicians and other senior health workers, Geneva 2005

only policy), but zinc is available only at the health facility level for prescription by a health worker.

Malaria prevention and treatment: The importance of malaria in Zimbabwe as a cause of maternal and child mortality is not well documented. Because malaria was controlled in much of the country through spraying, only some of the country's districts were considered until recently to be malaria endemic. That number has now been revised upwards, but there does not seem to be consensus on the current number of districts that require malaria interventions or the importance of additional investments because of the small number of deaths attributed to malaria nationwide. National surveys and health statistics underestimate the importance of the disease, as there is undoubtedly much more morbidity and mortality in the malaria endemic areas than is reflected in national or even provincial statistics.

A comparison between the DHS 2005/6 and MIMS 2009 shows that use of insecticide treated nets (ITNs) has improved. In rural areas, 17% of children aged 0-59 months slept under an ITN in 2009 compared to only 2% in 2005/6 (ZDHS). Twice annual child health days and National Immunization Days have been used as a vehicle for net distribution. Zimbabwe has adopted the use of rapid test kits and the Artemisinin-based combination drug, Coartem, as the first line treatment for malaria. According to the Child Survival Strategy draft shared with us, "an audit of case management of malaria showed a wide variation by province with respect to diagnosis with rapid diagnostic tests and Coartem prescribing". (Unfortunately, the MCHIP team was not able to locate this document.) The MIMS of 2009, also shows that of the 8% cent of children <5 year olds who had experienced episodes of fever in the two weeks preceding the survey, only 14% had received an anti-malarial drug. These rates and those above are difficult to interpret, first because not all children in the country are at risk of malaria, and second because not all fevers should be treated as if they were malaria. Nonetheless, this low treatment rate indicates that there is a need to address problems with malaria testing and treatment.

Integrated Management of Childhood Illness (IMCI). Zimbabwe introduced IMCI at RHC level a number of years ago. WHO's standard 11-day course was abbreviated to be 6-day course for reasons of cost and the original IMCI guidelines have been reviewed and adapted to include HIV/AIDS. In 2007, a health facility assessment showed high levels of performance against IMCI standards, but the individuals who were originally trained and assessed (mostly midwives and GRNs) are no longer staffing the RHCs, having been replaced by PCNs in recent years. PCNs are trained in IMCI, both theory and practice, during their 18-month pre-service course, but training follow-up has been minimal and PCN knowledge and skills in IMCI have not been evaluated. IMCI has a tool for integrated supervision, but there has been little money for supervision and PCN supervisors, themselves, have not been trained in IMCI. There is a recognized need for in-service training in IMCI for the PCNs and supervisors. WHO reported that 23 of 62 districts are implementing IMCI.

Community IMCI (cIMCI) materials have been adapted and printed, but this was a number of years ago and they were never rolled out for lack of funding to do so. We assume that they would need updating before being used as part of new or refresher training for VHWs. In terms

of community case management, as we understand current policy, only the treatment of diarrhea is sanctioned at community level by VHWs. Until last year, the recommendation for treatment of diarrhea was with homemade ORS. Now that low osmolarity ORS has been endorsed for home use, the VHW curriculum should also be revised to reflect this and the issue of supplying and resupplying VHWs with ORS packets must be addressed. Zinc is not approved for community distribution/use and neither are antibiotics for the treatment of pneumonia. (We are not clear about the policy on treatment of malaria symptoms by VHWs. Need to check on this.)

The former VHW cadres that were key to mobilizing communities for immunization and other maternal and child health services in the past are no longer as active as in the past. Their numbers have declined dramatically since 2004, the last year that the MOHCW was able to offer the US\$20 per month incentive for their participation. At present, the MOHCW reports that only around 350 of the former VHWs are still active in primary health care. Reports are that community based distributors (CBDs) and HIV/AIDS community volunteers are, however, still active in many communities, supported by NGOs.

Donor support:

- IMCI training is part of PCN pre-service training curriculum, so to the degree that donors are or have supported PCN training, they have also supported IMCI.
- Past support for IMCI refresher training has come from WHO and UNICEF; WHO has only \$30,000 for IMCI training this year and it is not clear whether UNICEF or others will support the 6-day refresher course in the future.
- It is not clear whether there is specific donor support for the roll-out of the new diarrhea treatment guidelines.
- UNICEF is providing cotrimoxazole, amoxicillin, low osmolarity ORS and zinc in the standard Primary Health Care package, but these products are intended for use at RHC level only.
- UNICEF is also supporting VHW training in 4 districts this year--500 VHWs have been trained so far, but the policy on VHW compensation is not clear and this has caused the VHW training to stall.
- The GFATM is providing Zimbabwe with large quantities of ITNs, rapid test kits and Coartem. UNICEF (or UNDP?) is the procurement agent for these products.
- USAID | DELIVER assists with delivery of malaria commodities and PHC packages through the ZIP and DTTU systems.

Conclusions: Since all PCNs have had some degree of training in IMCI, a formal assessment of PCN skills, based on the current job description, should be the first step in improving their skills. USAID obviously cannot take on the refresher training of the entire PCN cadre, but improving the quality of care provided by PCNs will be required to increase the coverage of the key child health interventions.

Community interventions are also very important, but until the VHW cadre is revitalized, investing in anything but a district-by-district approach is not likely to result in increased coverage of the child survival interventions described above. The focus should therefore be on working with the MOHCW and a group of like-minded partners to develop and jointly support a plan to revitalize the VHW cadre nationwide. Until the government and donors are willing to make a multi-year commitment to this effort, MCHIP does not recommend USAID support for the national VHW training program.

MCHIP recommends a more thorough analysis of the available data to determine what level of priority the prevention and treatment of malaria should be given in the MCHIP program. Certainly, in malaria endemic districts, malaria in pregnancy (MIP), bednet distribution and behavior change and case management of malaria in children should be included in all program assessments. Thereafter, work to increase health provider competency, facility readiness (including commodity availability) and/or BCC should be included in the program based on the quality of care findings.

i. PMTCT and pediatric HIV

Epidemiology: HIV/AIDS is the primary cause of mortality in women, infants and young children in Zimbabwe and the reason for the increasing mortality in all age groups since the early 1990's. In 2008, UNAIDS estimated that 15% percent of the adult population was HIV positive, compared with 18% percent reported by the 2005–2006 DHS, and over 30% reported earlier in the decade.⁶ UNAIDS estimates that HIV prevalence among pregnant women declined from 26% of pregnant women attending antenatal clinics in 2002 to 18% in 2006.⁷ Continuing this positive trend, the MOHCW reported that the sero-prevalence rate in ANC clients had declined further in 2009, to 16.1%. In 2010, the MOHCW estimates that there are just under 50,000 HIV-positive pregnant women needing care and support.

According to the draft Child Survival Strategy, “Of the 1.1 million Zimbabweans estimated to be living with HIV and AIDS in 2009, 105,740 (10 per cent) are children under the age of 14...and 15,791 (CI 8 054 – 22 431) children were newly infected with HIV in 2008. In the last 3 years, an estimated 33,345 children have died of AIDS.” (no source given) According to MOHCW national estimates, there were 13,016 (2007), 10,842 (2008), 9,397 (2009) child deaths due to HIV/AIDS.

Interventions: Zimbabwe introduced PMTCT services (voluntary counseling and testing (VCT) of women during antenatal and/or postpartum visits, ARV therapy with nevirapine for HIV+ mothers) in the 1999. Since that time, more and more women and children each year have

⁶ In 2009, the MOHCW estimated that adult HIV prevalence has declined further to 13.7%

⁷ It is not clear what proportion of the overall decline in HIV-related mortality is due to fewer new infections each year and what proportion is related to deaths among those with the disease.

been enrolled in PMTCT during antenatal care and put on ARVs. According to the MOHCW, there are 920 comprehensive PMCTC sites providing HIV testing and counseling and ARV prophylaxis (most with single dose nevirapine) and another 640 sites providing ARV prophylaxis but no testing. The government has recently moved to the More Efficacious Treatment (MER) protocol for pregnant women and Early Infant Diagnosis (EID), but these services had reached only about 200 of the approximately 1,600 health facilities in the country by the end of 2009. (IATT presentation by MOHCW) As they are rolled out, more and more HIV-infected women should be put on ARV treatment (versus nevirapine prophylaxis only) during pregnancy and the postpartum period.

In 2009, the national HIV/AIDS coordination unit estimated that 91-94% of pregnant women booked at ANC, 84% of ANC clients were tested for HIV (compared to 78% in 2008 and 77% in 2007) and 91% of those testing positive were given nevirapine.⁸ This does not tell us if the women actually took the nevirapine as directed, only that they were given the required dose. Only 48% of women testing positive for HIV had a CD4 count done; approximately 23% of those women had CD4<350 and thus qualified for ART for their own health. The distance from the RHCs, where most of the antenatal care takes place, to the district hospitals where women who test positive must go for follow-up testing and initiation of ARV treatment, has meant that far fewer women currently receive treatment than should receive it.

The MoHCW started providing pediatric ART in 2004. According to the draft Child Survival Strategy, approximately 24.8% of children who needed ART were on it in 2007; this improved to 38.7% in 2008, and to 57.1% in 2009.⁹ However, only 6% of the more than 1,600 health facilities were offering pediatric ART at the end of 2008. (ART Report, 2008). (We were not able to get a copy of this report. Source for this paragraph is the draft Child Survival Strategy. We assume that these rates and numbers come from the MOHCW statistics.) 35 sites provide PCR testing and send samples to National Medical Reference Laboratory in Harare. In 2009, 5075 tests were done; 17.1% were positive. (MoHCW data)

The MOHCW updated its Child Health Card in 2006 to include a record of the child's HIV status. This should permit closer monitoring and follow-up by health providers and better continuity of care as women and their infants move between levels of care.

The national breastfeeding guidelines were recently revised to coincide with the new WHO guidelines that encourage exclusive breastfeeding through 6 months of age and continued breastfeeding through the first year as an adjunct to complimentary feeding. This is an important change that should make the breastfeeding guidance to HIV+ mothers more understandable and help in increasing compliance.

⁸ These government reports do not coincide with the MIMS 2009 findings, which showed that only 58% of women had been tested for HIV during their last pregnancy (53% had been tested and received their test results).

⁹ Zimbabwe UNGASS Report on HIV and AIDS, 2009

HIV indicators collected from various sources

Indicator	~2000/01	~2004/05	~2006/07 MOH	2008 UNAIDS/ WHO	2009 UNGASS MOH
Death per year attributed to HIV/AIDS	150,000			140,000	
Adults aged 15 to 49 prevalence rate	33.7%	18.1%	15.6%	15.3%	14.3%
Women 15-49% testing + for HIV in antenatal clinics	25.7%	21.3%	17.7%	NA	16.1%
Adults and children infected with HIV	2.3 million	1.7 million	1.5 million	1.3 million	1.2 million
Sites providing ARVs		48	89		
Sites providing ANC/PMTCT					1560 (920 with testing and ARV)
% of HIV+ pregnant women who received ARVs for PMTCT		6.6%	22%		42.6%
Number of children on ART in public sector					20,303 (9.5%)
People receiving ARVs		8,000/ 25,000	99,408	148,144	218,589
Percentage of adults and children with advanced HIV infection receiving antiretroviral therapy		8.3% (adults only)	26.5%		56.1%

Sources: USAID/Zimbabwe HIV/AIDS Profile; Epidemiological Fact Sheet on HIV and AIDS, 2008; UNGASS Zimbabwe Country Report for 2009

Donor support

- USAID is a major supporter of Zimbabwe's HIV/AIDS control program. USAID's assistance is delivered through the:
 - Supply Chain Management System (SCMS) and USAID | DELIVER projects provide support for the procurement and delivery of condoms, rapid test kits, ARVs and contraceptives through the Delivery Team Topping Up (DTTU) and the Logistics SubUnit ARV and Fluconazole Distribution System (LSU).
 - Elizabeth Glazer Pediatric AIDS Foundation (EGPAF) second key staff to the MOHCW PMTCT unit; works in 32 of 62 districts through the Family AIDS Initiative Consortium and its partners (Kapnek Trust, Organization for Public Health Interventions (OPHID) and Zimbabwe AIDS Prevention Project (ZAAP); currently supports activities in 620 sites (training, supervision and mentorship) through its partners and has conducted pivotal operations research, such as the studies that led to the introduction of MER, demonstrated the advantages and disadvantages of combining immunization and HIV screening and testing for women and infants, and are testing the provider-initiated HIV testing and care

strategy. EGPAF is also one of the country's principle advocates and supporters of greater integration of MNCH and PMTCT services, including pediatric HIV testing and treatment when this is required. One of the priorities for 2010 is supporting increased decentralization of ART services, specifically in MCH.

- PSI: social marketing of condoms (male and female), voluntary counseling and testing, provision of post-test services, and demand creation and male circumcision services.
- DFID, GFATM, CDC and others support the national HIV/AIDS program and contribute commodities and funding for different PMTCT and HIV care and treatment activities. PSI and EGPAF are, for example, recipients of not only USAID but also DFID funding.
- UNICEF is the current procurement agent for most PHC drugs and medical supplies, including cotrimoxazole for pediatric prophylaxis in HIV-exposed infants. UNICEF also administers the Orphan and Vulnerable Children-POS (Program of Support?) program will pooled funding by multiple donors, which includes grants to a number of NGOs. UNICEF is actively pushing for early diagnosis and treatment of HIV-exposed children and supporting the decentralization of equipment for point-of-care testing (is this correct terminology?) (per discussion with Dr. Aboubacar Kampo, UNICEF)
- WHO has contributed to the development of PMTCT guidelines and training of trainers in different aspects of PMTCT.

Conclusions: There are already significant resources going into expanding and improving the quality of PMTCT services for women and infants. Although progress is steady, there is still much to be done to reduce missed opportunities and thereby ensure that women and their newborns are provided the best care and advice possible during pregnancy, the post-partum/post-natal periods and thereafter. MCHIP recommends a focus, in conjunction with its work to improve the quality of MNCH/FP care overall, on strengthening the links between MNCH/FP and PMTCT and increasing the coverage and the continuity of appropriate care for HIV-infected women and their newborns.

i. Post-partum Family Planning

Zimbabwe has had a successful family planning program over the last 2 decades with an increase in the contraceptive prevalence rate (CPR) from 54% in 1999 to 60% in 2005/2006 (Source: DHS 1999 and DHS 2005/2006). This has resulted in a steady decrease in the Total Fertility rate (TFR) from 4 in 1999 to 3.8 in 2005/2006 (DHS). However, unmet need for family planning has remained steady at 13%; with 7% of women expressing an unmet need for spacing compared to 7.1% of women who reporting an unmet need for limiting births.

A recent DHS analysis (DHS working paper, 2010) revealed that:

- women with unmet need for spacing births are younger, have fewer children, are less educated and less likely to be working, and live in lower wealth quintile households.

- women with unmet need for limiting births are older, more educated, live in higher wealth quintile households, and are less likely to have exposure to family planning messages in the mass media.

This means strategies to address unmet need must be tailored to each group. Unfortunately, the current method mix relies heavily on short acting methods with 43% and 10% of women using pills and injectables respectively, as compared to only 1% of women using the IUD or implants and only 2% having undergone tubal ligation or feminine sterilization. There is a need, therefore, to improve access and availability of longer acting methods.

Recent analyses of birth-to-pregnancy intervals have demonstrated the considerable risks of adverse pregnancy outcomes when these intervals are less than 24 months¹⁰. Short birth-to-pregnancy intervals are associated with increased risks of miscarriage, low birth weight, preterm birth, maternal death, and child malnutrition. In addition, research has shown that outcomes for mother and child during a subsequent pregnancy are improved when conception is delayed for at least six months following an abortion or miscarriage¹¹. The analysis of birth-to-birth intervals in Zimbabwe indicates that 37% of children are born 35 months or less apart, indicating a birth-to-next-conception interval of 26 months or less. Birth-to-next-conception intervals of 36 to 47 months have the lowest risk of neonatal, infant, and under-five mortality.¹²

To promote healthy outcomes for mother and child, women need to be counseled and supported to practice family planning for at least 24 months after the birth of their last baby before attempting a new pregnancy. This can be achieved by promoting exclusive breastfeeding and the use of Lactation Amenorrhea Method (LAM); the gateway for transition to other modern family planning methods. The use of family planning is also important for all women and particularly for HIV positive women as a cost effective intervention in reducing the number of unwanted pregnancies and the risk of HIV transmission from mother to child.

In Zimbabwe, postpartum family planning (PPFP) is offered during postnatal care and integrated into PNC service guidelines. Mothers have access to FP information and services during the 6 week postpartum visit; which highlights a missed opportunity to reach them earlier with information related to optimal birth spacing and the use of LAM and other modern interval methods. In addition, women who require longer acting and permanent methods such as the IUD and tubal ligation could receive these immediately postpartum if counseling were available earlier during antenatal care and immediately postpartum.

¹⁰ Conde-Agudelo, A. 2006. Birth Spacing and the Risk of Adverse Outcomes; A Meta Analysis; Journal of the American Medical Association. 29. April 2006. DaVanzo, J et al. 2007

¹¹ Conde-Agudelo, A, et al. Effect of the inter-pregnancy interval after an abortion on maternal and perinatal health in Latin America. International Journal of Obstetrics and Gynecology, Vo.89. supplement 1, April 2005.
¹² Rutstein 2008

Zimbabwe National Family Planning Council (ZNFPC) is the main organization that has traditionally implemented FP activities. ZNFPC is responsible for setting standards for FP services, coordinating training of providers, providing certification and conducting TOTs in FP. ZNFPC also implements community-based distribution (CBD) of FP, working with CBD agents. ZNFPC has experienced attrition at all levels similar to other programs, limiting their ability to provide services and also to support training. ZNFPC has 2 training centers based in the main cities (Harare and Bulawayo) and it offers in-service training that includes 1) TOTs for tutors; 2) clinical course in General FP (theory 2 weeks; practicum 2 weeks); and 3) IUD and Implant insertion and removal (1 week each). They also have 12 sites offering FP and other reproductive health services - 1 in each rural province (8) and 2 each in Bulawayo and Harare urban sites. At the community level, they operate with CBD agents who only resupply oral contraception and condoms (salaried workers who are trained for 6 weeks-- 4 weeks theory and 2 weeks practicum) and depot holders (volunteers who are trained for 2 weeks). In each ward, there are 5 depot holders supervised by 1 CBD agent. The CBD agents are supervised by a group leader (1/district). A recent mapping exercise revealed that only 321 of the previous 800 trained CBD agents are still functional. The total needed to ensure appropriate coverage is 1300 while those in place need refresher training.

Contraceptives are free with the exception of urban areas.

Donor support

- DFID funds contraceptive methods and cost of delivery with USAID providing condoms. Distribution is managed by JSI through the DDTU (push system). Stock-outs are rare at less than 5%.
- UNFPA is funding the CBD program though details were not provided.
- IPPF supports youth programming and safe abortion services.
- PSI supports social marketing of all hormonal methods including injectables and has trained 320 providers in implant insertion and removal (using the cascade approach to reach registered nurses working at RHC level).

Conclusions: The MCHIP team recommends a more thorough review of current policies and guidelines related to postpartum family planning, an assessment of health providers' ability to counsel women on and provide long-acting and permanent contraceptive methods, and more information about commodity availability in government-run health facilities. Based on the findings of this initial assessment, PPFP and LAPMS content and practice should be part of the competency-based maternal and newborn training program for DH and large-volume RHC staff. MCHIP's contribution might be working with the MOHCW and partners to strengthen service delivery guidelines, incorporate training content, address supply issues and supervise PPFP and LAPM provision in selected health facilities.

5. Organization and Staffing of MNCH/FP Functions in Zimbabwe's Health System

In the following sections, we summarize key features of Zimbabwe’s current health system and the types of health providers who currently deliver the high impact interventions described above.

a. The organization of health services

Zimbabwe’s public health service is divided into four levels of care—primary (Rural Health Centers, or RHCs), secondary (District Hospitals), tertiary (Provincial Hospitals) and specialty hospitals and unit at central level and in the countries primary cities – Harare, Bulawayo, etc. The table below summarizes the services provided and the staffing at each of these levels. Zimbabwe’s public health services are managed by the Ministry of Health and Child Welfare at the central, by Provincial Health Offices in each province and by District Health Executives (DHE) at district health level. Provincial Health Directors have from __ to __ officers working with them, including the Provincial Nursing Officer who oversees much of the nursing care and the training of nurses by District Hospitals, as well as the RH, EPI and other programs. At district level, the DHE oversees the operations of the district hospital and all of the Rural Health Centers in the district. The DHE is assisted by a District Nursing Officer who is further assisted by other nurses and Environmental Health Technician, where they are still posted,

Municipal governments (Harare, Bulawayo, others) also own and operate their own health facilities. At the time of this assessment, the Harare Municipal Government was in active competition for staff (midwives in particular) with the MOHCW-operated Harare Central Hospital. Having set its compensation rates significantly higher than the MOHCW, there has reportedly been a recent exodus of more nurses and midwives, including midwifery tutors, to the municipal government.

Mission- or church-managed health facilities reportedly have 65% of the country’s hospital beds and provide 35% of its health care. (ZACH interview) Of the 126 church-managed facilities, 13 are also MOHCW district hospitals. How many of the others are categorized as hospitals and how many urban or rural health centers is not known. The Zimbabwe Association of Church Hospitals represents the interests of the mission facilities, conducts both technical and administrative/management capacity building activities, facilitates donations by lending its import exemption to its members, negotiates fees scales and carries out special programs and studies in the area of HIV/PMTCT and pediatric HIV, maternal care, quality improvement, etc.

Types of health facilities by level, MNCH/FP services provided and staffing pattern

Type of facility (N)	Services Provided	Staffing
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Type of facility (N)		Services Provided	Staffing
Level 4	Central Hospital (5)	<ul style="list-style-type: none"> • Speciality services including NICU and ICU • Management of complicated cases such as congenital diseases • Also responsible for pre-service training (MDs, postgraduate, MWs?) 	<ul style="list-style-type: none"> • Obstetricians, gynaecologists, neonatologists, paediatricians, paediatric surgeons.
Level 3	Provincial hospitals (7) none in urban sites	<ul style="list-style-type: none"> • Management of complicated cases 	<ul style="list-style-type: none"> • Staffing pattern: obstetricians, gynaecologists, neonatologists, paediatricians, anesthetists? (most posts vacant)
Level 2	District /mission hospitals (164) average capacity is 65 beds none in urban sites so all patients are referred to tertiary institutions population of 140,000	<ul style="list-style-type: none"> • BEmONC; CEmONC • KMC units (select) • Comprehensive HIV/AIDS care including staging and initiation of ART • Long-acting and permanent contraceptive methods • Supervision of lower levels: RHC and community 	<ul style="list-style-type: none"> • District medical officer (1) • MD (GPs - 3-5) , • Nurses (30-40), including midwives, GRNs, nurse anesthetists, clinical officers (1) • Environmental health Officer (1); Environmental health technicians ; Lab technician, pharmacist
Level 0 and 1	Clinics/Rural Health Centers Urban municipal clinics (1000) population of 10,000 accessible within 8km of HHs	<ul style="list-style-type: none"> • ANC • Basic delivery care including ENC; BEmONC? (large RHCs) • PP/PNC • PMTCT, VCT, re-supply of HAART • FP (limited LAPMs), IMNCI • (average # delivery: 10/month – larger RHCS perform 10-30 deliveries /month) 	<ul style="list-style-type: none"> • Staffing pattern: Midwife (1); GRN (1) and Environmental Health Technician (1) • Currently staffed by 1-2 PCNs
Community	Village Health workers 1 per 100 families	<ul style="list-style-type: none"> • Immunization; CDD; health promotion • FP: counseling, resupplies and referrals 	<ul style="list-style-type: none"> • VHW cadre decimated by economic crisis • CBD and depot holders still functioning but small numbers

b. MNCH/FP and immunization service providers

The principle providers of the high impact MNCH interventions are:

Medical Doctors: General practitioners provide MNCH services at the district level. Currently all recently graduated doctors are expected to spend some time at the district level as a precondition for unrestricted registration. The lack of specialists and more senior staff at this level means that junior doctors receive minimal supervision and mentoring.

General Registered Nurses (GRNs): GRNs have three years of training prior to service. There are 26 RGN training schools in the country and all but one are government or mission hospital run. All of these schools use a standard curriculum. Nursing students are funded by the government and then bonded to the state for three years service when they graduate from their 3-year course.

Midwives: Midwives have one additional year post nursing diploma. Midwives used to staff RHCs and DHs, but most midwife positions are vacant. The retention scheme is expected to provide incentives to increase the proportion of DHs with MWs, but the future of that scheme is uncertain. Midwives should be providing BEmONC and CEmONC, as appropriate. Partographs are used, but it is not clear that AMTSL is being routinely practiced. Post-basic trainees, such as midwives, receive full study leave with full pay during their training and a 67% supplement on GRN salary. Demand is still high for midwifery training, however, of the country's 15 midwifery schools, only 7 are still functioning and 2 of these have had to reduce admissions because they have lost tutors. There are said to be few midwives left in the MOHCW system, and those that are still at work are said to be administrators and no longer working on the wards.

Clinical Officers (CO): GRN /midwives who receive 18 months additional training including surgery such as cesarean sections. Ideally posted at district hospitals, but there are very few occupied posts at this time. CO training was suspended for a time but recently resumed. Issues about COs include the lack of career paths as they cannot be promoted beyond the matrons. There are plans to revive the training of this cadre to fill the gap at district hospital level.

Nurse Anesthetists: GRNs who are trained for an additional XX months to perform anesthesia. This cadre is critical to ensure the provision of 24/7 CEmONC services, though in most cases only one has been posted in each district hospital.

Primary Care Nurses (PCNS): This second-level nursing cadre was revived and renamed in 2003 to fill the staffing gap at the PHC level. PCNS are professional nurses who are trained for 18 months to provide ANC, normal delivery care, identification and referral of obstetric complications, postnatal care, FP and IMCI. Each RHC is staffed by 1-2 PCNs. Over 4,000 PCNs have been trained and 95% of PCN posts are said to be filled. Pre-service training for PCNs includes a six-week rotation in obstetrics; however, the lack of supervision and poor working conditions mean PCNs graduate and function with limited experience and confidence. A 2006

evaluation by the MOHCW included interviews with of PCNs, PCN trainers and supervisors. Trainers and supervisors noted a lack of PCN confidence in their ability to attend births. There is a plan to extend the PCN program to 24 months; increasing the emphasis on obstetrics and a companion plan for bringing the PCNs that are already deployed in for training. EU will support this training in 2010, as mentioned above. The Director of Nursing Services is also proposing the addition of a third PCN at RHC level to increase community focus. The PCNs training in community participation is currently very weak and with only two PCNs at an RHC, it is not possible for them to do the kind of outreach into the community that is necessary to increase coverage. The policy decision to add a third PCN post and this community focus has not yet been made.

Village Health Workers link communities to the health system. Trained for XX weeks and normally supervised by the RHC, VHWs are supposed to provide health promotion, management of childhood diarrheal diseases and support outreach activities including immunization. For the last 3 years, the MOHCW has not been able to offer refresher training nor pay the \$20/month stipend and VHW bicycles have not been repaired or replaced. Most VHWs currently work under the HIV/AIDS home-based care programs. UNICEF is currently conducting a mapping of functional VHWs who have a very important role to play particularly in the resettlement areas. UNICEF is also supporting the roll out of a community-based maternal and newborn care (CB-MNC) package that could be used to train VHWs to provide visits to pregnant women and recently delivered mothers and newborns. 500 CHWs have been trained to date in 4 pilot districts; but training has stalled because the government is not able or has not made the decision to resume VHW incentive payments. There are plans to adapt the 2009 WHO/UNICEF training module to support further CB-MNC training.

c. Factors affecting the coverage and quality of MNCH/FP services

The current coverage of high-impact, evidence-based MNCH interventions is significantly lower than it was in the past and the quality of care provided in public health facilities at all levels has deteriorated. Although in need of repair and renovation, Zimbabwe's physical health infrastructure is still in place. However, shortages of well-trained staff (particularly the midwives and other post-diploma nurses who used to staff the country's hospitals and RHCs), hyperinflation, unregulated user fees, and a general lack of government resources for health have all had a profoundly negative impact on the population's access to and use of available MNCH services. Even the country's formerly robust cadre of village health workers and its health development committees are much depleted.

Human resource crisis: The economic crisis has resulted in an exodus of skilled staff, particularly midwives, registered nurses and doctors seeking more stable sources of income. The primary care level is most affected by the crisis; once staffed by registered general nurses and in some cases midwives; RHCs are currently staffed by Primary Care Nurses only. These nurses, as mentioned above are a second tier nurse, who is trained for only 18 months and has minimal hands-on experience or skills in maternity care, in particular. The quality of care at this level is

further affected by limited supervision, communications and transport, all of which make it difficult for staff to refer complicated cases from the RHC to higher levels of care.

Supplies and equipment: Broken equipment and stock outs of drugs and supplies have hindered the delivery of quality MNCH services at all levels of the system. The fragmented procurement and supply of commodities is a result of multiple donor funding streams, procurement agents and delivery systems until recently when efforts have been intensified to coordinate and combine delivery of commodities to health facilities whenever this is possible. Numerous donors, including USAID, are addressing the HIV/AIDS, malaria, TB, FP, labor and delivery and PHC commodity issues and reportedly making progress in support of the Unity Government.

Deteriorating infrastructure: Zimbabwe's health infrastructure is dilapidated, including surgical theatres, labor wards and maternity waiting shelters. A substantial proportion of facilities report no piped water, electricity or working toilets (UNICEF essential med & supplies report); in some instances, staff have to draw water from boreholes or request patients to provide water themselves. These conditions clearly pose a threat to women and newborns because of the inherent difficulty in maintaining infection control standards without the minimal conditions required to do so.

Unregulated user fees: Government policy stipulates that pregnant women and children under five are exempt from paying for services at the RHCs and district level and at higher levels, as well, but only if the referral system is respected. Nonetheless, all levels of the health system are currently charging user fees for their services; this is reportedly because of the economic crisis and the central government's inability to fund its health facilities. At present, women are charged up to 50 USD at ANC booking (to cover provision of care through pregnancy, labor, delivery and up to 6 weeks postpartum) and they are required to cover the cost of complications when they occur; this includes a fee of \$100 USD or more for two units of blood if a transfusion is required. This has led to falling ANC coverage and to women booking later for ANC than in the past. It is also leading to women relocating from cities to rural villages for the births of their babies, and to traveling longer distances to access care where fees might be less (and consequently worsening the situation at a few already overburdened and under-resourced facilities).

Lack of confidence in the PCN's ability to manage labor and delivery has resulted in an increase in homebirths (58.5% facility births according to MIMS 2009 with more than 50% of births in rural areas occurring at home, most with untrained attendants) and a preference to deliver at the district hospital even for normal deliveries. The increase in home births, rising user fees, and obstacles that women face in getting to a district hospital when there are complications all contribute to increasing rates of maternal and newborn mortality and morbidity.

Remaining policy issues: Important policy decisions that have not been made or on which there is not total consensus include the role of the PCN and RHC in maternity care, the approach to increasing PCN and GRN labor and delivery skills, VHW roles and incentives, the degree to

which HIV testing and treatment will be decentralized, the policies related to the use and operations of maternity waiting shelters, and others. Many of these decisions will be made in the course of program planning; others require decisions at higher levels of authority. Until they are made, demonstration activities designed to influence or operationalize final decisions are warranted, but larger scale efforts are not advisable.

6. Lives Saved Tool (LiST) Analysis – Setting MNCH/FP Intervention Priorities

a. What is LiST and why do we use it?

MCHIP uses the Lives Saved Tool, or LiST, to assess the relative benefits of investing in different packages of high-impact interventions. LiST is a computer-based application that estimates the impact of scaling-up maternal, newborn and child health interventions and intervention packages, at different coverage levels and at country, state and district levels.

LiST combines the best scientific information about effectiveness of interventions for maternal, neonatal and child health with information about cause of death and coverage levels. It is intended to help program managers and ministries of health in prioritizing investments, evaluating the impact of existing programs and setting targets for the future. LiST was developed by a consortium of academic and international organizations, led by Institute of International Programs at the Johns Hopkins Bloomberg School (an MCHIP partner), and supported by a Gates Foundation grant to the US Fund for UNICEF.

MCHIP uses LiST as one of several approaches to priority setting. We have found it to be an excellent tool for demonstrating the impact of the different maternal, newborn and child health interventions and intervention packages on child survival, as measured by *additional child lives saved per year*. Because of the much smaller numbers of maternal deaths and continuing work to determine the impact that some interventions have on maternal survival, MCHIP does not use LiST to weigh the relative value of different investments in maternal survival. However, because many of the conditions that kill and cause preventable morbidity in women also kill or put their newborns and young children at high risk of death, the LiST analysis produces a useful tool for making decisions about investments in interventions that have an impact on both maternal and newborn survival. The complete LiST results and assumptions behind the following analysis are available upon request.

b. Estimating the impact of individual MNCH/FP interventions and intervention packages

We used LiST in Zimbabwe's case to estimate the number of maternal and child lives that might be saved by scaling up different interventions and combinations of interventions between 2010 and 2015. Key features and assumptions behind the LiST analysis include:

- The 2008 CHERG analysis, estimating the most common causes of maternal and child mortality in Zimbabwe, was the starting point for the LiST analysis.
- Population-based survey results, MOHCW administrative reports, and special studies were used to establish the baseline coverage levels for each of the high-impact MNCH interventions; only when such data were not available did we use the LiST tool's global coverage estimates.
- Coverage targets were set for 2015 based on the complexity of the services to be provided and the challenges involved in changing specific behaviors (i.e., exclusive

breastfeeding, provider practice). The targets are admittedly ambitious under the current circumstances in Zimbabwe. They reflect the hope that the Unity Government and its international partners, including USAID, will decide to join forces in a concerted effort to strengthen the country's MNCH/FP services and dramatically reduce the current levels of preventable maternal, infant and child mortality.

- Annual coverage increases between 2010 and 2015 were interpolated automatically by the LiST software, using a straight line method.
- LiST then calculated the impact of each intervention and of progressively more complex packages of interventions on mortality.
- In the analysis below, impact is expressed in terms of the numbers of additional child lives that could be saved each year between 2010 and 2015 if the different interventions and intervention packages were scaled up to the target coverage levels.
- LiST also calculates the total numbers of expected deaths and the maternal mortality ratio and child mortality rates for each year of the analysis; this additional information is available upon request.

The analysis below compares the potential impact on maternal and child survival (additional lives saved each year) of single and combined interventions as they are scaled up. The results for single interventions are shown in the first set of tables below, beginning with those that have the greatest potential to save additional lives each year and ending with those that have the least according to this analysis. The second set of tables shows the results of scaling up more comprehensive MNCH/FP intervention packages and combining those packages to save additional maternal and child lives.

c. Which single MNCH/FP interventions are likely to be the most effective in reducing child deaths?

Results of the LiST analysis are presented below according to the numbers of additional lives that could be saved (highest, intermediate and lowest impact) and the timing of each intervention during the lifecycle, i.e., from pregnancy to labor/delivery, to postpartum/postnatal care and infant/child care.

Highest impact on child mortality in term of potential lives saved (>1,000 lives saved per year)

Intervention Package	Child Deaths Averted – Lives Saved							
	2009 Value	Target Value	Target Year	2011	2012	2013	2014	2015
ARV triple therapy during pregnancy	8%	40%	2015	284	534	788	1,120	1,475
BEmONC	30%	65%	2015	230	461	689	920	1,154
CEmONC	15%	40%	2015	362	722	1,072	1,421	1,767
KMC	10%	60%	2015	209	423	637	857	1,082
Exclusive Breastfeeding (EBF) 1-5 month	5%	20%	2015	300	606	917	1,232	1,555
Pneumococcal vaccine intro by end of 2012	0%	80%	2015	0	0	526	1,062	1,609
Antibiotics for Pneumonia	16%	60%	2015	492	995	1,511	2,037	2,576
ORT diarrhea treatment	35%	60%	2015	429	866	1,316	1,775	2,245
ORT/Zinc diarrhea treatment	35%/0%	60%/60%	2015	563	1,120	1,672	2,215	2,752

Intermediate impact on child mortality (600-1,000 lives saved per year)

Intervention Package	Child Deaths Averted – Lives Saved							
	2009 Value	Target Value	Target Year	2011	2012	2013	2014	2015
Essential Maternal and Newborn Care	58%	80%	2015	122	246	371	499	631
Postnatal Care (PNC)	29%	60%	2015	147	296	446	600	758
Rotavirus vaccine intro by end of 2012	0%	80%	2015	0	0	278	563	856
PMTCT Nevirapine prophylaxis	27%	60%	27.0%	156	279	402	563	734

Lowest impact on child mortality (<600 lives saved per year)

Intervention Package	Child Deaths Averted – Lives Saved							
	2009 Value	Target Value	Target Year	2011	2012	2013	2014	2015
Complete Antenatal Care (ANC) *	various (see notes)			96	195	295	398	505
EBF < 1 month	48%	60%	2015	85	172	260	349	442
DPT/Hib Vaccine	60%	80%	2013	160	321	486	490	496
Measles Vaccine	64%	80%	2013	98	199	303	306	311
Cotrimoxazole prophylaxis for HIV-exposed	6%	50%	2015	176	258	326	424	536

ART for HIV + Children	5%	50%	2015	41	252	301	376	472
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Maternal/newborn interventions' that Save Maternal Lives

Intervention Package	2009 Value	Target Value	Target Year	Maternal Deaths Averted – Lives Saved				
				2011	2012	2013	2014	2015
Complete ANC		Various		14	30	45	60	76
Essential Routine Care *	58%	80%	2015	2	5	7	10	12
AMSTL	6%	60%	2015	23	48	72	98	124
BEmONC	30%	65%	2015	68	140	212	286	363
CEmONC	15%	40%	2015	144	294	445	601	761

Note: Complete ANC includes relatively ambitious package and targets for 2015: Tetanus Toxoid from 58.0% in 2009 to 80% by 2015; Multiple Micronutrient Supplementation from 0.0% in 2009 to 60% by 2015; Folic Acid Supplementation or Fortification from 0.0% to 60%; Syphilis Detection & Treatment from 35.0% to 80%; Case Mgmt During Pregnancy 71% to 80%; and Calcium Supplementation from 0.0% to 60%.

c. Combining intervention packages for greatest impact

By combining high-impact interventions, significantly more maternal, newborn and child lives could be saved each year than if support were given to scaling up single interventions alone.¹³ The tables on the next two pages demonstrate the advantages of building the most complete package of interventions possible for mother and child. The powerful effect that simple interventions could have is clear, such as diarrhea treatment with ORT/zinc and the treatment of pneumonia with antibiotics. The potential benefits of more complex interventions that would require improving the coverage of basic and comprehensive emergency obstetrical care, increasing coverage of triple ARV therapy during pregnancy and introducing pneumococcal vaccine are also clear in this analysis but more difficult to implement.

d. Assumptions and limitations

The MCHIP team offers the LiST analysis as a first attempt to prioritize and package the high-impact MNCH/FP interventions that could conceivably be scaled up to accelerate progress toward the MDGs and contribute to the rebuilding of Zimbabwe's health system. It is important to remember that LiST estimates the potential impact of a public health intervention based on what is known about 1) its effectiveness when delivered at an established standard, 2) its current coverage (interventions that are already at high coverage have less additional impact on child survival than those at low coverage levels with more room for improvement), and 3) the target coverage levels that the users set for the future, in this case for 2015. Although we have used the best available data and our understanding of the complexities of each of the interventions in this, we acknowledge that there are many in Zimbabwe who are much more knowledgeable about the country's situation and its possibilities than the members of our assessment team. Therefore, before finalizing the LiST analysis and using it to help in determining the packages of care that MCHIP will support, we propose to repeat this analysis with MOHCW and partner representatives.

¹³ When combining interventions in packages, the total numbers of lives saved is always less than the sum of the lives that might be saved by the individual interventions that are included in a package. This is because several different interventions may prevent the same death, i.e., antibiotics and vaccines (Hib and Pneumococcal vaccines) all prevent a pneumonia death.

Comparison of the Impact of Intervention Packages on Child Survival

				Child Deaths Averted – Lives Saved						
Intervention Package	2009 Value	Target Value	Target Year	2011	2012	2013	2014	2015		
Maternal/Newborn Packages										
Complete Antenatal Care (ANC)		various (see note)		96	514	649	322	505		
+ Essential Maternal/Newborn Care*	58%	80%	2015	216	436	656	879	1,106		
+ AMSTL*	6%	60%	2015	216	436	656	879	1,106		
+ BEmONC	30%	65%	2015	325	650	972	1,296	1,623		
+ KMC	10%	60%	2015	530	1,061	1,584	2,108	2,634		
+ PNC within 2 days	29%	60%	2015	669	1,327	1,963	2,588	3,203		
+ EBF < 1 month	48%	60%	2015	750	1,485	2,190	2,880	3,555		
+ PMTCT Nevirapine only	27%	0%	2015	907	1,766	2,594	3,447	4,294		
+ PMTCT Triple ARV in pregnancy	8%	50%	2015	1,001	1,961	2,895	3,884	4,879		
+ CeMOC	15%	40%	2015	1,132	2,215	3,261	4,356	5,446		
Child Packages										
Exclusive Breastfeeding (EBF) 1-5 months	5.3%	20%	2015	300	606	917	1,232	1,555		
+ DPT/Hib vaccine	60.0%	80%	2013	456	910	1,365	1,672	1,987		
+ Measles vaccine	64.3%	80%	2013	554	1,108	1,666	1,976	2,295		
+ Pneumococcal vaccine (intro 2012)	0.0%	80%	2015	554	1,108	2,118	2,865	3,604		
+ Antibiotics for pneumonia	16.0%	60%	2015	1,022	2,009	3,322	4,321	5,244		
+ Oral Rehydration Therapy (ORT)	34.9%	60%	2015	1,440	2,836	4,549	5,939	7,245		
+ Zinc	0.0%	60%	2015	1,598	3,126	4,946	6,419	7,785		
+ PMTCT cotrimoxazole prophylaxis	6.0%	50%	2015	1,773	3,385	5,273	6,847	8,327		
+ ARV for HIV+ children	5.0%	50%	2015	1,812	3,628	5,568	7,218	8,791		
Combined Maternal/Newborn/Child Packages above without CEmONC	As above			2,807	5,572	8,439	11,052	13,575		

Comparison of the Impact of Different Intervention Packages on Maternal Survival

Intervention Packages	2009			Target Value	Target Year	Maternal Deaths Averted – Lives Saved						
	Value	Value	Value			2011	2012	2013	2014	2015		
Maternal/Newborn Packages												
Complete Antenatal Care (ANC)			various (see note)			14	30	45	60	76		
+ Essential Maternal/Newborn Care*	58%	80%	2015		17	35	52	70	89			
+ AMSTL*	6%	60%	2015		40	83	124	168	213			
+ BEmONC	30%	65%	2015		105	213	319	425	533			
+ CeMOC	15%	40%	2015		180	362	539	718	897			

* Complete ANC includes relatively ambitious package and targets for 2015: Tetanus Toxoid from 58.0% in 2009 to 80% by 2015; Multiple Micronutrient Supplementation from 0.0% in 2009 to 60% by 2015; Folic Acid Supplementation or Fortification from 0.0% to 60%; Syphilis Detection & Treatment from 35.0% to 80%; Case Mgmt During Pregnancy 71% to 80%; and Calcium Supplementation from 0.0% to 60%.

** AMTSL has no impact on child but important impact on averting maternal deaths from postpartum hemorrhage

7. Recommendations for USAID investment through MCHIP

Based on the findings of this rapid assessment and the preliminary LiST analysis above, MCHIP recommends USAID support for the following packages of interventions at the district level and below.

a. Package for District Hospitals and Large Volume Rural Health Centers

MCHIP proposes to focus in select DHs and large volume RHCs on introducing, strengthening and/or scaling up an essential and basic emergency maternal and newborn care package that includes the interventions listed below.

Level/Package	Targeted Providers
District Hospitals and Large Volume Rural Health Centers	
Intervention Focus: Improving quality of Maternal, Newborn and Postpartum FP care	
Focused ANC, with PMTCT (see below)	Physicians, midwives, GRNs in DHs PCNs in large volume RHCs
Basic emergency obstetrical and newborn care (BEmONC) including: Management of normal labor and delivery, Active Management of Third Stage Labor (AMTSL), and all 7 BEmONC signal functions, including newborn resuscitation	
Immediate post-natal care (prior to discharge)	
Kangaroo MotherCare for low birth weight infants	
Post-partum family planning – long acting and permanent methods	

Also: In all of the above, improved links to:

PMTCT – counseling and testing, nevirapine prophylaxis, cotrimoxazole prophylaxis, and initiation of ARV treatment	Physicians, midwives, GRNs in DHs PCNs, as appropriate, in large volume RHCs
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The MOHCW and its partners are already working to improve the coverage and quality of PMTCT services and to improve access to comprehensive emergency obstetrical and newborn care (CEmONC) at district hospital level. MCHIP is proposing active involvement in the effort to improve the coverage and continuity of PMTCT by reducing missed opportunities for testing, prophylaxis and treatment in MNCH/FP services. MCHIP also proposes to work hand in hand with UNICEF, DFID, UNFPA and others to improve the quality of the essential and basic emergency maternal and newborn care (BEmONC) that should be in place in all DHs and RHCs. We are not proposing USAID’s involvement in the upgrading of CEmONC capacity or maternity waiting shelters at this point due to resource constraints. Another area of attention at this level, increasing access to postpartum family planning (in particular to long-acting and permanent

contraceptive methods) is receiving very little attention from other donors and is, we believe, an area of USAID and MCHIP comparative advantage.

b. Package for Rural Health Centers and Communities

MCHIP proposes to focus in selected Rural Health Centers on improving the quality of an essential package of maternal, newborn and child health care, including improving the quality of ANC and the management of childhood illness and increasing the coverage of PMTCT and immunization. The following table summarizes the proposed interventions for MCHIP support at RHC and community level:

Level/Package	Targeted Providers
Rural Health Centers (regardless of size) and their surrounding communities	
Intervention Package: Maternal, Newborn and Child	
Focused ANC , including PMTCT (see below)	PCN provision, VHW promotion
Essential maternal and newborn care for normal births (where RHCs are attending normal births)	PCN, where they attend births
Promotion of birth preparedness, safe birth and ENC practices, exclusive breastfeeding 0-6 months of age, immunization, and other preventive measures	PCN and VHW
Early post-natal care	VHW
Monitoring of LBW babies after release from hospital	PCN
Immunization –current childhood schedule by 1 yr of age with addition of pneumococcal vaccine after 2012	Provincial and district EPI focal point, PCN, VHW
Integrated management of childhood illness – facility based (antibiotics for pneumonia, ORT/zinc for diarrhea, antimalarials, in malaria endemic zones)	PCN
Community management of childhood illness as permitted by Child Health policy (currently includes only ORT for diarrhea)	VHW - ideally once the VHW program is re-established, at least the initiation of pneumonia and malaria treatment will be permitted by trained VHWs
Also, in all of the above, improved links to:	
PMTCT - counseling, testing and referrals for pregnant women and HIV-exposed infants; nevirapine prophylaxis; pediatric cotrimoxazole prophylaxis; ARV refills	PCN

The MOHCW is beginning to address deficiencies at the RHC level, but there are currently only a few donors supporting planned work to improve the knowledge, skills and supervision of the PCNs or to revitalize the VHW cadre (EU and UNICEF only at this point). MCHIP recommends that USAID’s investments complement on-going work in this respect and that the primary objectives be to 1) learn about the approaches that work in improving PCN performance and

reactivating VHWs and 2) leverage a coordinated government and partner response to ensure a higher quality of MNCH/FP care at the RHC and community levels in the future.

Focus on national policies and donor coordination: Whether it is feasible to scale up an intervention or a package of interventions to the 2015 targets we used in the LiST analysis above depends upon the complexity of the intervention, the resources available for its introduction and expansion (human, financial and material) and the existence of an enabling environment, including the policies, guidelines and coordination mechanisms that will facilitate expansion and strong government and donor support. MCHIP recommends focusing attention at the policy level and on donor coordination to ensure that the roles and responsibilities of DHs and RHCs are rationalized and that the future approaches to training and deploying midwives, GRNs, PCNs and VHWs are aligned to meet the needs not only of the secondary but also of the primary levels of maternal, newborn and child health care. See the workplan for a list of the policy decisions that are pending and would benefit from MCHIP input.

c. Feasibility and risk assessment

Zimbabwe has the benefit of a committed group of partners as it moves toward scaling up the MNCH/FP interventions, but cost, absorptive capacity and the current fragility of the health system make us question how rapidly the full complement of life-saving interventions might be taken to scale. In moving forward, Zimbabwe and its partners will be able to build upon the following strengths, while also addressing a number of related threats.

- Zimbabwe has updated many of its maternal and child health policies and strategies in recent years. Unfortunately, there has been little funding to roll these strategies out so they do not appear to be uniformly known or practiced. (Refer to discussion of high impact interventions in Section 2 above.) Leveraging resources for roll out of the policies that are likely to produce the greatest impact should be given high priority.
- Zimbabwe has a strong network of partners and partner programs already working in support of a number of the high impact MNCH/FP interventions and/or health system strengthening overall. They include USAID, DFID, UNFPA, UNICEF, WHO, European Union and other bilateral donors who contribute to the Multi Donor Trust Fund. Coordinating donor inputs will be extremely important for scale up.
- Zimbabwe's MOHCW and its partners have functioning coordination mechanisms and technical working groups at the national level. These include the Maternal and Neonatal Health Technical Working group, the Immunization InterAgency Coordinating Committee and its subcommittees, the Multi Donor Coordination Group (not sure of the name), PMTCT working groups, and others. Participation in technical working groups and committees can be time consuming, but it is also an important way to influence national policy and leverage and coordinate donor investments.
- Zimbabwe and its partners have already carried out a number of assessments and program evaluations that will provide useful information for the design of future MNCH/FP interventions, including the 2007 Maternal and Perinatal Mortality Study. The

situation has changed since 2007, however, and there is currently very limited information (and conflicting opinions) about the quality of MNCH/FP care that is being provided in DHs and RHCs.

- Zimbabwe's different suppliers of essential MNCH/FP commodities have begun to work together to improve the availability of essential medicines, vaccines, and other supplies in RHCs and DHs. There is much work left to do, but the increased coordination and improved availability of key commodities are encouraging.
- Zimbabwe has extensive experience training doctors, midwives and other post-diploma nurses. The country also has a network of nursing and midwifery schools that could be used to retrain and improve the skills of the PCN cadres. Although many of the country's experienced nursing tutors have left the government system for more lucrative placements, there are said to be those who would rejoin the public service if compensation were to improve.
- The MOHCW is moving ahead with a plan to retrain PCNs (and to extend the pre-service training of new PCNs) in order to increase their exposure to the management of normal labor and delivery. This is a much needed effort, but resources for it are limited and its existence did not seem to be well known among the donors or inside the MOHCW. This may have to do with the fact that both the curative and preventive directorates of the MOHCW are involved in different efforts to improve maternal and newborn care and that the current PCN retraining plan has not yet been fully vetted within the MOHCW or with the MNH Working Group. Bridging these two directorates will be an important objective for MCHIP.
- Many of Zimbabwe's former VHWs are still in their communities. The VHW's contributions to educating and motivating his or her neighbors are recognized by those in the health system. The lack of resources to retrain and pay the small VHW incentives that were previously offered is the primary constraint to reactivating this community cadre. It is not clear whether the recurrent costs of the VHW program are going to be feasible for the MOHCW and its partners to absorb. Community interventions can be very powerful tools in reducing newborn and child deaths, so we hope that the VHW program receives adequate support. Revitalizing this program is beyond the current resources available to MCHIP, but working with VHWs in learning sites may provide an opportunity not only to reach into the community but also to test affordable incentives and support systems.
- Zimbabwe had a high functioning health system prior to the economic collapse. The know-how exists to improve services but the resources are now limited, so a great deal of creativity and openness to new ways of doing things will be required if essential services are to be made available at a lower cost than in the past and still as close to the population as possible. The MOHCW's recent policy documents reflect this new reality and the willingness to make hard decisions, however, it would be unnatural if there weren't resistance to some of the changes that may be necessary in coming years. Keeping this in mind will be important as the MCHIP program unfolds.

- The memory of and demand for quality MNCH/FP services among the population is still high. Demand creation is not the problem; improving the quality of care available to the population and making it affordable to those who need it most is the primary challenge for all working to reduce Zimbabwe's currently high rates of maternal, newborn and child morbidity and mortality.

Please see the Zimbabwe workplan for a detailed description of the work that MCHIP proposes in response to the needs, opportunities and threats detailed in this situation analysis.

Annex 1: Documents Reviewed

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40. Annex 2: Contact List

Organization	Interviewed
USAID	Karen Freedman, Mission Director
	Peter Halpert, PHN In-Charge phalpert@usaid.gov 0912565941 (mobile)
	Bill Jansen, Population and Health Advisor
	Ruth Tembo, HIV Advisor
Ministry of Health and Child Welfare	Permanent Secretary Dr. Gerald Gwinji
	RH/Maternal Newborn, Preventive Health Directorate Mrs. Margaret Nyandolo
	Director of Nursing Services, Curative Health Directorate Chief Nursing Officer Mrs. Cynthia Chasokela cmzchasolkela@yahoo.com (+263-11878014, +263-4-705968 Mrs. Garede (Community Nursing)
	Child Health Dr. Gonah, Chairperson of Child Survival working group and Mrs. Cecilia Machena, CH/IMCI unit, Nursing Services
	Immunization Mrs. Kampota
Zimbabwe Nursing Council	Not visited
Zimbabwe National Family Planning Council (ZNFPC)	Winnie to complete
PSI Block E. Emerald Office Part 30 The Chase West Emerald Hill, Harare	Michael Chommie, Country Director, phone: mchommie@psi-zim.co.zw
	Pester Siraha, HIV Services Manager psiraha@psi-zim.co.zw
	Roy Dhlamini, Male Circumcision Manager rdhlamini@psi.co.zw

Organization	Interviewed
WHO Country Office Highlands, Harare	Dr. T. Desta, Acting WHO Representative DestaT@zw.afro.who.int
	Trevor Kanyowa, Maternal, Child and Adolescent Health KanyowaT@zw.afro.who.int
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	Mrs. Shelley _____, Reproductive Health (Winnie to complete)
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University of Zimbabwe Medical School	Department of Obstetrics and Gynecology Dr. Stephen P. Munjanja
	Dr. Hilda Mujuru , Department of Pediatrics (Chair IMCI Working Group) Dr. Gonah (Chair Child Survival Strategy committee) Dr. Kusum J Nattroo
Kapnik Trust	Dr. Greg Powell, Country Director

Organization	Interviewed
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Zimbabwe Association of Church Hospitals (ZACH) 160 Baines Ave P.O. Box 1556, Harare, Zimbabwe 011 608659	Mrs. Vuylewa T.S. Chitimbire, Executive Director chitimbire@zach.org.zw
Save the Children P.O. Box 4689 10 Natal Road, Belgravia, Harare +263 (0) 4 793 198/9, 251 739	Rachel Cummings, Health Programme Manager rachaelc@savethechildrenzw.org
LATH	Rudolph Schumacher, Program Advisor in Maternal and Newborn Health (DFID support)
Site visits:	
Harare Central Hospital School of Nursing and Midwifery Ministry of Health and Child Welfare P.O. Box ST 14 Southerton, Harare	J.B. Nderere, Executive Chairman & CEO jbnderere@africaonline.co.zw 263-4-621 143, 621 100/19, 263-11-879 961 (cell)
	Margaret (Peggy) _____, Director/Tutor, Midwifery Training School
	_____, Head Nursing Officer, Harare Hospital
Urban health center	Patricia or Winnie to complete
Rural district hospital	Linda to complete

Annex 3: High-impact interventions that prevent maternal, newborn and child deaths

Pregnancy

- Focused antenatal care (FANC)
 - o tetanus toxoid
 - o iron/folate
 - o Malaria prevention and treatment in endemic areas: intermittent preventive treatment during pregnancy (IPTp); ITNs; treatment of malaria disease
 - o PMTCT – see below
 - o birth preparedness/complication readiness
 - o counseling about nutrition, hygiene, breastfeeding
 - o counseling about birth spacing, LAM, and interval methods for women who want to space their families
 - o counseling about availability of long-acting and permanent methods immediately postpartum for women who want to limit their families
- PMTCT
 - o voluntary counseling and testing during pregnancy
 - o appropriate ARV use including MER for HIV+ women when necessary
 - o counseling on FP options based on woman's desire to space or limit births
- Detection and management of maternal complications
 - o pre-eclampsia/eclampsia
 - o preterm births (use of antenatal steroids)
 - o antibiotics for premature rupture of membranes

Birth and immediate post-partum/post-natal period

- Skilled birth attendance
 - o Infection prevention
 - o use of partograph
 - o Active Management of the Third Stage of Labor (AMTSL)
- Essential newborn care for all newborns
 - o Clean cord care
 - o Thermal control - drying, warming
 - o Basic neonatal resuscitation
 - o Immediate and exclusive breastfeeding
- Basic Emergency Obstetrical and Neonatal Care (BEmONC) to treat complications:
 - o Intravenous antibiotics, uterotonics and MgSO₄
 - o Removal of retained products of conception
 - o Manual removal of placenta
 - o Assisted vaginal delivery
 - o Neonatal resuscitation (bag and mask)
- Comprehensive Emergency Obstetric and Neonatal Care (CEmONC) . CEmONC includes all seven BEmONC functions plus:

- Cesarean section
- Blood transfusion
- Management of premature and low birthweight newborns including Kangaroo Mother Care (KMC)
- PMTCT
 - VCT for women who do not know HIV status at time of birth
 - ARV at birth for HIV+ women and their newborns
 - Prophylactic treatment with cotrimoxazole for HIV-exposed infants
 - Counseling on exclusive breastfeeding and use of LAM; transition to another modern method for women who want to space
 - Provision of long-acting or permanent FP methods based on decisions made during ANC
- Vaccination: BCG and Polio 0 as early in life as possible (also monovalent Hep b, if available)

Women and newborns during extended postpartum period

- Assessment of mother and baby within 48 hours of birth for danger signs
- Assessment of breastfeeding
- Referral for and provision of early care for infection, bleeding, etc.
- ARV treatment and care for HIV+ women and their families
- Provision of counseling about optimal birth spacing and LAM
- Transition to another modern method at appropriate time, including long-acting methods

First month of life, with focus on first days and week

- Exclusive breastfeeding
- Postnatal care within the first 24- 48 hours to assess for danger signs, refer, provide early care for sick newborns, HIV exposed newborns and low-birthweight (LBW)
- Detection, management and referral for neonatal infection with antibiotics primarily and
- PMTCT: Cotrimoxazole for HIV-exposed infants
- Vaccination: BCG and Polio 0 (also Hep b, if available)

Infants and young children after the first month of life

- Exclusive breastfeeding to 6 months of age and breastfeeding and appropriate complementary feeding thereafter
- Vaccination
 - DTP/HepB + Hib (three doses)
 - Polio (three doses)
 - Measles
 - Future: Pneumococcal and Rotavirus
- Vitamin A supplementation
- Treatment of pneumonia with antibiotics

- Treatment of malaria with antimalarials
- Treatment of diarrhea with ORT and zinc
- Continued prophylactic treatment with cotrimoxazole for HIV-exposed infants
- HIV testing of infants at 6 weeks
- Initiation of appropriate ARV treatment for HIV+ infants and children

* Intermittent preventive treatment (IPT) of malaria during pregnancy or sleeping under an insecticide treated net (ITN)

**Essential routine care for women and newborns at time of birth