

Zambia Health Facility Assessment BASELINE to ENDLINE Comparison



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International donors and SMGL Zambia partners:

Government of Zambia

Zambia Ministry of Community Development, Mother and Child Health (MCDMCH)

Zambia Ministry of Health

Zambia Central Statistics Office (CSO)

District and Provincial Medical/Health Officers Community Health Workers and Safe Motherhood Action Groups (SMAGs)

CDC Zambia Country Office

US Agency for International Development (USAID) Zambia Country Office

Center for Infectious Disease Research in Zambia (CIDRZ)

Zambia Center for Applied Health Research and Development (ZCAHRD) (Boston University)

Maternal and Child Survival Project (MCSP)

Zambia Integrated Systems Strengthening Program (ZISSP)

Communication Support for Health (CSH)

Safe Motherhood 360+ (SM360+)

Systems for Better health (SBH)

Africare

University of Zambia (UNZA), Department of Population Studies

American College of Obstetricians and Gynecologists

Every Mother Counts

Merck for Mothers

Government of Norway

Government of Sweden

Project CURE

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Peace Corps

US Department of Defense (DOD)

Office of the US Global AIDS Coordinator (OGAC)

LIST OF ACRONYMS

AMDD	Averting Maternal Death and Disability program
AMTSL	Active Management of the Third Stage of Labor
ANC	Antenatal Care
ARV	Anti-retroviral Medication
AVD	Assisted Vaginal Delivery
BEmONC	Basic Emergency Obstetric and Newborn Care
CDC	Centers for Disease Control and Prevention
CEmONC	Comprehensive Emergency Obstetric and Newborn Care
CFR	Case Fatality Rate)
CSO	Central Statistics Office
DHIS	District Health Information System
ELMIS	Electronic Logistics Management Information System
EmONC	Emergency Obstetric and Newborn Care
HC	Health Center
HFA	Health Facility Assessment
HMIS	Health Management Information System
ICD-10	International Classification of Diseases – 10th edition
IPT	Intermittent Preventive Treatment in Pregnancy
ITN	Insecticide Treated Bed nets
LLIN	Long Lasting Insecticide Nets
M&E	Monitoring and Evaluation
MCH	Maternal and Child Health
MMR	Maternal Mortality Ratio
MOH	Ministry of Health
PEPFAR	President’s Emergency Plan for AIDS Relief
PMTCT	Prevention of Mother-to-Child Transmission
PMR	Perinatal Mortality Rate (in facilities, at discharge)
RAMOS	Reproductive Age Mortality Study
RAPID	Rapid Ascertainment Process for Institutional Deaths
SMAG	Safe Motherhood Action Group
SMGL	Saving Mothers, Giving Life
WHO	World Health Organization
WRA	Women of Reproductive Age

A. Summary of Key Findings

The Global Partnership of Saving Mothers, Giving Life (SMGL) is an ambitious 5-year initiative designed to aggressively reduce maternal and newborn mortality in sub-Saharan African countries. In Zambia, SMGL is a public-private partnership between the Zambia Ministry of Community Development, Mother and Child Health (MCDMCH), Zambia Ministry of Health (MOH), United States Government—primarily represented by the Centers for Disease Control and Prevention (CDC) and United States Agency for International Development (USAID)— and other partners including Merck for Mothers, the Zambia Central Statistics Office (CSO), Center for Infectious Disease Research in Zambia (CIDRZ), Zambia Center for Applied Health Research and Development (Boston University) (ZCAHRD), Zambia Integrated Systems Strengthening Program (ZISSP), Communication Support for Health (CSH), University of Zambia (UNZA) Department of Population Studies, and Africare (with the University of Michigan).

In Phase 1, the overall proportion of all births delivered in facilities increased by 35 % at the end of Phase 1; and proportions of births in EMONC facilities increased by 17%. Availability of basic and comprehensive EmONC facilities improved substantially because of SMGL. The number of BEMONC facilities increased from 3 to 6 in Zambia and CEMONC facilities increased from 4 to 5 in Zambia. In Zambia, the MMR for health facilities in the four SMGL districts declined by 35%, from 310 maternal deaths per 100,000 live births at baseline to 203 per 100,000 at the end of phase I. This endline HFA was conducted in the districts of Kalomo, Zimba, Lundazi, Mansa, Chembe and Nyimba. This assessment was critical to evaluate changes in the key indicators in the five years since baseline activities and to inform targeted efforts to reduce maternal and neonatal mortality.

- **Infrastructure improved** with availability of water, electricity, 24/7 service access and communication higher in Endline from Baseline
- **EmONC and CEmONC** status improved with BEmONC w/o AVD capacity up and blood transfusions and C-Section capacity higher from Baseline
- **Focus on patient care** with at least one skilled attendant on staff
- **Improved Routine Practice of Active Management of 3rd stage of labor** (AMTSL) with health centers and health posts demonstrating a higher proportion of routine practice of AMTSL
- **Support for ANC** activities with routine ANC medication stocks. Stocks for HIV rapid test kits remain high for hospitals and health posts at 100%, while increasing for health centers
- **Focus on HIV positive newborns**, with increase ARV's administered to newborns in maternity ward last 3 months up slightly

B. Background

The 2016 Endline Health Facilities Assessment

The Global Partnership of Saving Mothers, Giving Life (SMGL) is an ambitious 5-year initiative designed to aggressively reduce maternal and newborn mortality in sub-Saharan African countries.

Through a coordinated approach that strengthens maternal health services, SMGL's evidence-based interventions are focused primarily on the critical period of labor, delivery, and the 48 hours postpartum, when most maternal deaths and about half of newborn deaths occur. The SMGL initiative linked these interventions to an existing platform of programs that have an impact on maternal health and are provided during pregnancy and postpartum, including HIV (PMTCT Option B+), malaria (IPTp, ITNs and LLIN), nutrition and family planning. In Zambia, Phase 1 (June 2012–May 2013) activities were implemented in the four original districts of Mansa, Lundazi, Nyimba, and Kalomo.

Reliable and accurate information on the supply and quality of health services is necessary for health systems management and monitoring and evaluation (M&E). Extensive M&E of SMGL is further essential to assess potential changes in the key indicators closely related to maternal and neonatal mortality. A Health Facilities Assessment (HFA) was performed at baseline and end of Phase 1 to gather data on maternity care infrastructure, Emergency Obstetric and Neonatal Care (EmONC) availability and use, human resources, and drugs, equipment, and supplies.

Baseline to end of Phase 1 results showed availability of basic and comprehensive EmONC facilities in these districts in Zambia improved substantially because of SMGL. The number of BEMONC facilities increased from 3 to 6 and CEMONC facilities increased from 4 to 5. In Zambia, the MMR for health facilities in the four SMGL districts declined by 35%, from 310 maternal deaths per 100,000 live births at baseline to 203 per 100,000 at the end of phase I.

The endline HFA was conducted in the districts of Kalomo, Zimba, Lundazi, Mansa, Chembe and Nyimba. This assessment is critical to evaluate changes in the key indicators in the five years since baseline activities and to inform targeted efforts to reduce maternal and neonatal mortality.

SMGL's essential components and concepts include the following¹:

- **A comprehensive approach.** Maternal deaths cannot be prevented by any one intervention alone. Reducing maternal mortality requires a solution that addresses multiple health system issues at multiple levels. SMGL uses evidence-based interventions that are designed to address three dangerous delays that pregnant women face in childbirth: delays in deciding to seek care for an obstetric emergency, delays in reaching a health facility in time, and delays in receiving quality care at health facilities.
- **An adequate number of high-quality delivery facilities, including EmONC that are accessible within 2 hours** of the onset of labor or obstetric emergencies.

¹ Section from SMGL Phase 1 M&E Report, CDC Atlanta 2014

- **An integrated communication- transportation system** that functions 24 hours a day/7 days a week to encourage and enable pregnant women to use delivery care facilities. This system should include community outreach and interventions that increase awareness of these facilities.
- **An adequate number of skilled birth attendants** who can provide quality care for normal delivery and who are able to identify and refer obstetric emergencies.
- **A functional supply chain system** to ensure that facilities have the equipment, supplies, commodities, and drugs they need to deliver high-quality obstetric care.
- **A system that accurately records** every birth and maternal and neonatal death.

Sponsorship of the Survey The 2016 Zambia HFA is supported financially by CDC and USAID, with the approval of the Zambia Ministry of Community Development, Mother and Child Health (MCDMCH) and Ministry of Health (MOH). The US Centers for Disease Control and Prevention (CDC) are providing technical assistance with the HFA design, training and analysis.

- Objectives of the Survey**
- To determine the current capacity of Hospitals, Urban Health Centers (UHC), Rural Health Centers (RHCs), and Health Posts (HPs) in Kalomo, Zimba, Lundazi, Mansa, Chembe and Nyimba to provide quality maternal and newborn care services.
 - To determine the impact of Saving Mothers Giving Life (SMGL) Program on reducing maternal and neonatal deaths in the 5 years since SMGL implementation in these four districts.
 - To assess existing resources and remaining gaps in provision of maternal and newborn health.

Data Usefulness

- To provide insights to inform the development of health-related policies aimed at improving health care for prospective mothers and children.
- Provide data needed to assist concerned persons and organizations in their effort to promote and develop programs/policies which could result in the maximization of the human potential of the country.

C) HFA Implementation

Introduction

Saving Mothers, Giving Life's strategy builds on a foundation of relationships, infrastructures, partners, and expertise established through the President's Emergency Plan For AIDS Relief (PEPFAR), USAID maternal and child health (MCH) efforts, and other global health efforts to implement proven interventions for basic maternity care and emergency obstetric and newborn care (EmONC) services to facilitate women seeking, accessing, and utilizing high quality services. (Source: SMGL OPS Guide, Page 1)

Health Facility Assessments are an essential instrument for health system strengthening in low- and middle-income countries. These assessments are used to capture the capacity of the health system to deliver health care and to identify gaps in the coverage of health services.

Subject coverage in the survey which will allow for meeting objectives

Some topic included in the assessment are noted below²:

- **Facility Identification Information.** Background information for the current facility including identification of the respondent, facility services, and staffing levels.
- **General questions.** Overall information on the current facility including the size/capacity, quality and availability of electricity, water, and toilets.
- **Communication and transportation.** Availability of transportation and communication resources to enable general and emergency referrals.
- **Essential drugs, equipment and supplies.** Information on the availability of medications, equipment, and medical supplies that are necessary for the delivery of EmONC and newborn services.
- **Labor and delivery and maternity.** Information on the management and infrastructure for labor and delivery and obstetric surgery.
- **Laboratory and blood bank.** Information on the equipment and supplies necessary for the delivery of laboratory and blood bank services.

² Section from Zambia SMGL HFA Training Document, CDC Atlanta 2017

- **Facility case summary and data indicators.** Data from facility registers to calculate United Nations (UN) EmONC indicators including the type of delivery, post abortion care, direct and indirect obstetric complications, maternal deaths due to direct and indirect cause, newborn outcomes, information on referrals out of the facility, and the quality of registry data.
- **Antenatal and Postnatal care.** Information on the drugs, equipment and supplies, infrastructure, registrars, guidelines, and protocols for antenatal and postnatal care.
- **Community Mobilization.** Information on how community has been actively engaged contributing to reduction of maternal mortality in the SMGL districts.

Population to be surveyed

The target population for the survey is all health facilities in six districts that provide delivery services. At Baseline, a total of 113 facilities providing delivery services were represented in the HFA. The Endline list of facilities includes those from the Baseline that are still providing obstetric deliveries and other facilities providing deliveries.

This report presents results from the Health Facility Assessment (HFA) of health facility status in SMGL Learning districts in Zambia.

Chembe, Mansa, Kalomo,imba, Lundazi and Nyimba

Baseline data were gathered in October 2011, at the end of Phase 1 in May-June 2013 and at Endline in November 2016. Learning districts refer to areas where SMGL has implemented the full spectrum of programmatic activities since the start of the Initiative in 2012.

Results are presented for Baseline, end of Phase 1 and Endline, with some interpretation and discussion given around Baseline and Endline. However, instances where there was a decline from end of Phase 1 to Endline are highlighted in the discussion.

D) Methodology

The Baseline and Endline HFA’s were administered to facilities that had deliveries in the preceding 12 months. Data collection for Endline was undertaken by SMGL Implementing Partner University of Zambia (UNZA) Department of Population Studies Centre of Excellence, staff from the District Medical Health Offices and the SMGL data clerks. Data collectors were trained on the HFA tool by CDC Atlanta.

Caveats to the analysis presented in this report:

- 1) Data from the human resources, staffing and training sections of the Endline HFA tool were not available from Baseline as implementing partners used different tools
- 2) Endline (2016) analysis is presented for facilities that were assessed in both Baseline-Endline

- 3) Since 2014, Kalomo has been split into two districts: Kalomo and Zimba. For the purposes of this analysis, Kalomo Baseline will be analyzed; whereas the combined Kalomo/Zimba Endline will be analyzed
- 4) Since 2014, Mansa has been split into two districts: Mansa and Chembe. For the purposes of this analysis, Mansa Baseline will be analyzed; whereas the combined Mansa/Chembe Endline will be analyzed
- 5) Some Kalomo indicators not available for Baseline
- 6) Baseline (October 2011) and Phase 1 (June 2013) estimates include all facilities surveyed at both time periods with deliveries in the previous 12 months, in accordance with the Phase 1 report
- 7) The Endline (November 2016) estimates include all facilities surveyed at both baseline and endline with deliveries in the previous 12 months
- 8) Analysis from the end of Phase 1 are presented, and results discussed if there is a change between end of Phase 1 and Endline findings

E) Health Facility Distribution and EmONC Capacity

Table 1 presents the distribution, and types, of health facilities in Zambia Learning districts. Hospitals have higher patient loads, are facilities for referrals, and also have the necessary infrastructure and staffing to undertake C-sections, surgeries and other lifesaving medical procedures. Health centers are the next level of care, under hospitals, while health posts are the most basic facility type. The number of hospitals, health posts and health centers in SMGL districts remained constant from Baseline to Endline, six for hospitals, sixteen for health posts, and eighty eight for health centers.

Table 1: Number of Health Facilities with Deliveries by District, Level and Type (facilities across all three HFA waves)

Note: Baseline (October 2011) and Phase 1 (June 2013) estimates include all facilities surveyed at both time periods with deliveries in the previous 12 months, in accordance with the Phase 1 report
The Endline (November 2016) estimates include all facilities surveyed at both baseline and endline with deliveries in the previous 12 months.

	Facility Type									All Facilities		
	Hospital			Health Center			Health Post			Baseline (October 2011)	Phase 1 (June 2013)	Endline (November 2016)
	Baseline (October 2011)	Phase 1 (June 2013)	Endline (November 2016)	Baseline (October 2011)	Phase 1 (June 2013)	Endline (November 2016)	Baseline (October 2011)	Phase 1 (June 2013)	Endline (November 2016)			
Operating Agency												
Government	4	4	4	84	84	84	15	15	15	103	103	103
Religious Mission	2	2	2	4	4	4	1	1	1	7	7	7
District												
Mansa/Chembe	1	1	1	28	28	28	0	0	0	29	29	29
Kalomo/Zimba	2	2	2	28	28	28	0	0	0	30	30	30
Lundazi	2	2	2	21	21	21	12	12	12	35	35	35
Nyimba	1	1	1	11	11	11	4	4	4	16	16	16
Total	6	6	6	88	88	88	16	16	16	110	110	110

^a Since 2014, Kalomo has been split into two districts: Kalomo and Zimba. For the purposes of this analysis, Kalomo baseline will be analyzed whereas the combined Kalomo/Zimba endline will be analyzed.

^b Since 2014, Mansa has been split into two districts: Mansa and Chembe. For the purposes of this analysis, Mansa baseline will be analyzed whereas the combined Mansa/Chembe endline will be analyzed.

Assessing BEmONC and CEmONC capacity is a key outcome of the HFA tool, with the categorization critical for SMGL program implementation and reporting.

The World Health Organization (WHO) has identified a series of actions or practices that indicate whether facilities are providing emergency obstetric care. These life-saving procedures are typically referred to as “signal functions”. In order to classify facilities by EmONC status, signal functions were asked about in a subsection of the HFA questionnaire.

Used individually, or as a group, these procedures respond to obstetric complications attributed to the majority of direct maternal deaths. To be classified as providing Basic care (BEmONC) a facility must have performed seven signal functions within the last three months (Table 2). ‘BEmONC 6’ categorization drops assisted vaginal delivery (AVD).

Country-level Ministries of Health (MOH) designate facilities as EmONC (BEmONC or CEmONC) while the HFA determines actual functionality of those facilities. SMGL's role is to improve the services and infrastructure to meet these designations.

For a facility to be classified as providing Comprehensive EmONC (CEmONC) two additional procedures—cesarean sections and blood transfusions—must have been performed in addition to the 7 signal functions of BEmONC, for a total of 9 signal functions (Table 2). Hospitals which serve larger catchment areas are more likely to maintain EmONC status in comparison to lower level facilities. The percentage of facilities assessed to provide CEmONC care in SMGL Zambia districts increased from 3.5% to 4.6% from Baseline to Endline.

Table 2: Signal functions used to identify basic and comprehensive emergency obstetric care services:

Basic Services:
1) Administer parenteral antibiotics
2) Administer uterotonic drugs (i.e. parenteral oxytocin or misoprostol)
3) Administer parenteral anticonvulsants for preeclampsia and eclampsia (i.e. magnesium sulfate).
4) Manually remove the placenta
5) Remove retained products (e.g. manual vacuum extraction, dilation and curettage)
6) Perform assisted vaginal delivery (e.g. vacuum extraction, forceps delivery)*
7) Perform basic neonatal resuscitation (e.g. with bag and mask)
Comprehensive Services - Perform signal functions 1–7, plus:
(8) Perform surgery (e.g. caesarean section)
(9) Perform blood transfusion
*This signal function is not included in the Zambia BEmONC training
<i>Source: World Health Organization. Monitoring Emergency Obstetric Care: A Handbook. Geneva, 2009.</i>

Table 3 presents clinics with EmONC capability in the SMGL districts compared with WHO 2016 population-based recommended numbers. Note that the 2016 population estimates are based on crude birth rate (CBR) from CSO estimate for rural Zambia. Lundazi with a rapidly rising population has five EmONC clinics exceeding the WHO recommendation of four, and Kalomo/Zimba have the recommended four EmONC clinics. Mansa/Chembe have fewer than the recommended number of three EmONC clinics, while Nyimba has two total so more than the WHO recommended one.

From a Baseline to Endline perspective, EmONC capacity has increased for all SMGL districts with the exception of Mansa/Chembe which maintains two EmONC facilities, and Kalomo is constant at four clinics.

Table 3: Number of Basic and Comprehensive EmONC Before and After

Zambia SMGL Districts: Lundazi, Kalomo/Zimba ^a , Mansa/Chembe ^b , and Nyimba													
Note: Baseline (October 2011) and Phase 1 (June 2013) estimates include all facilities surveyed at both time periods with deliveries in the previous 12 months, in accordance with the Phase 1 report.													
The Endline (November 2016) estimates include all facilities surveyed at both baseline and endline with deliveries in the previous 12 months.													
District	Population in 2011 ^a	Recommended Number of EmONC ^c	Population in 2016 ^b	Recommended Number of EmONC ^c	Actual Baseline Number of EmONC ^d			Actual Phase 1 Number of EmONC ^d			Actual Endline Number of EmONC ^d		
					CEmONC	BEmONC	Total	CEmONC	BEmONC	Total	CEmONC	BEmONC	Total
Mansa/Chembe	233,940	3	263,584	3	1	1	2	1	0	1	1	1	2
Kalomo/Zimba	270,201	4	335,539	4	1	1	2	1	3	4	1	3	4
Nyimba [†]	86,656	1	95,464	1	1	0	1	1	0	1	1	1	2
Lundazi	334,401	3	390,314	4	1	1	2	2	3	5	2	3	5

EmONC = Emergency Obstetric and Newborn Care; BEmONC = Basic Emergency Obstetric and Newborn Care; SMGL = Saving Mothers, Giving Life

^a Estimated from the national 2010 Census in Zambia. https://www.zamstats.gov.zm/phocadownload/2010_Census/2010%20Census%20of%20Population%20National%20Analytical%20Report.pdf

^b Estimated from 2010 CENSUS OF POPULATION AND HOUSING Population and Demographic Projections 2011 - 2035 <https://www.zamstats.gov.zm/phocadownload/Zambia%20Census%20Projection%202011%20-%202035.pdf>

^c Using the WHO minimum recommended level of 5 EmONC per 500,000 population.

^d Since 2014, Kalomo has been split into two districts: Kalomo and Zimba. For the purposes of this analysis, Kalomo baseline will be analyzed whereas the combined Kalomo/Zimba endline will be analyzed.

^e Since 2014, Mansa has been split into two districts: Mansa and Chembe. For the purposes of this analysis, Mansa baseline will be analyzed whereas the combined Mansa/Chembe endline will be analyzed.

[†] Includes CEmONC and BEmONC facilities that may not have provided assisted vaginal delivery in the past 3 months; a few CEmONCs in Uganda reported shortage of blood at the endline in the previous 3 months, but were still classified as CEmONC facilities.

[‡] Nyimba had not performed manual removal of placenta in the previous 3 months at Phase 1 and was still classified as CEmONC.

As shown in Table 4, EmONC status increased from Baseline to Endline for all districts. Nyimba has the following Endline EmONC status: 6.3% CEmONC, 6.3% BEmONC and 6.3% BEmONC w/o AVD.

Lundazi has the highest population among SMGL districts (see population distribution in Table 3), with 5.7% CEmONC status, 2.9% at BEmONC and 8.6% of health facilities at BEmONC w/o AVD status at Endline.

Kalomo/Zimba shows the following Endline signal function capacity: 3.3% CEmONC, 3.3% BEmONC and 10.0% BEmONC w/o AVD status.

Mansa/Chembe BEmONC w/o AVD distribution increased the least across all SMGL districts from Baseline to Endline with the distribution as follows: 3.5% CEmONC, 3.5% BEmONC and 3.5% BEmONC w/o AVD at Endline.

Table 4: Percent of Facilities, by District, Providing Comprehensive and Basic Emergency Obstetric Care in Zambia SMGL Districts of Lundazi, Kalomo/Zimba^α, Mansa/Chembe^β, and Nyimba

Zambia SMGL Districts: Lundazi, Kalomo/Zimba^α, Mansa/Chembe^β, and Nyimba

Percent of Facilities, by District, Providing each Service/Function.

Note: Baseline (October 2011) and Phase 1 (June 2013) estimates include all facilities surveyed at both time periods with deliveries in the previous 12 months, in accordance with the Phase 1 report.

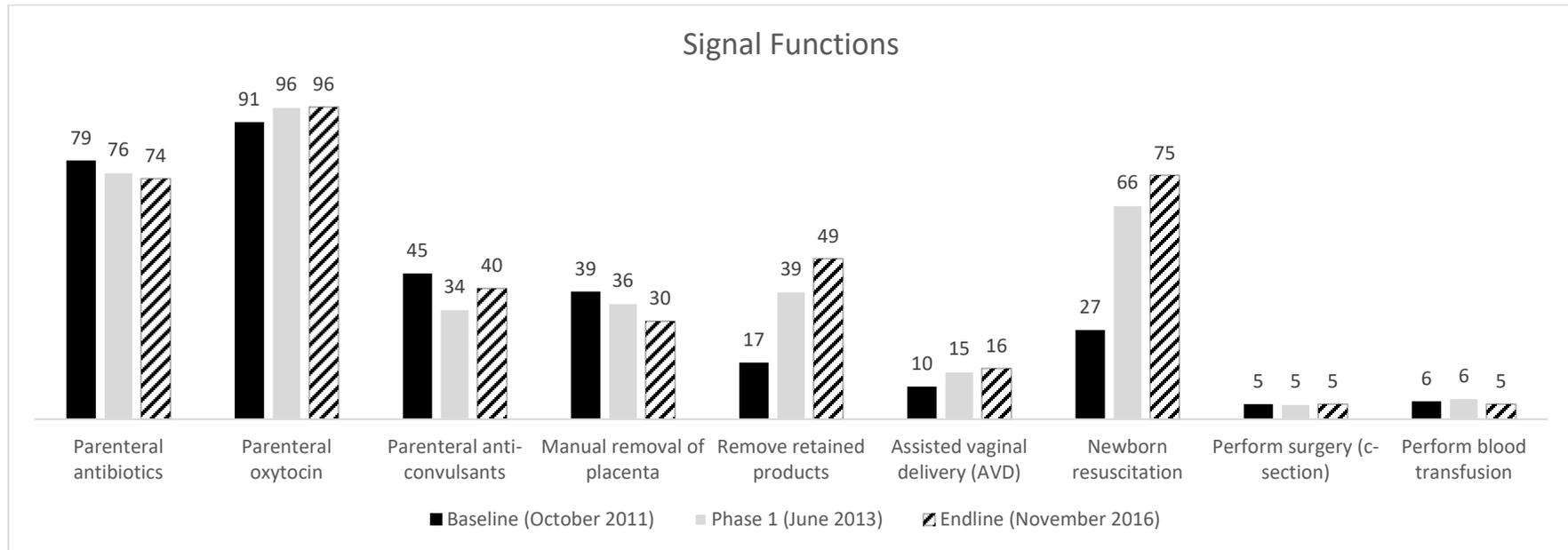
The Endline (November 2016) estimates include all facilities surveyed at both baseline and endline with deliveries in the previous 12 months.

	District														
	Nyimba			Lundazi			Kalomo/Zimba ^α			Mansa/Chembe ^β			All Facilities		
	Baseline (October 2011)	Phase 1 (June 2013)	Endline (November 2016)	Baseline (October 2011)	Phase 1 (June 2013)	Endline (November 2016)	Baseline (October 2011)	Phase 1 (June 2013)	Endline (November 2016)	Baseline (October 2011)	Phase 1 (June 2013)	Endline (November 2016)	Baseline (October 2011)	Phase 1 (June 2013)	Endline (November 2016)
BEmONC and CEmONC Classification[~]															
Comprehensive Emergency Obstetric and Newborn Care (CEmONC) [9/9 signal functions]	6.3	6.3	6.3	2.9	5.7	5.7	3.3	3.3	3.3	3.5	3.5	3.5	3.6	4.6	4.6
Basic Emergency Obstetric and Newborn Care (BEmONC) [7/7 signal functions]	0.0	0.0	6.3	0.0	0.0	2.9	0.0	6.7	3.3	0.0	0.0	3.5	0.0	1.8	3.6
BEmONC w/o AVD [~] [6/6 signal functions]	0.0	0.0	6.3	2.9	8.6	8.6	3.3	10.0	10.0	3.5	0.0	3.5	2.7	5.5	7.3

Note: Baseline (October 2011) and Phase 1 (June 2013) estimates include all facilities surveyed at both time periods with deliveries in the previous 12 months, in accordance with the Phase 1 report. The Endline (November 2016) estimates include all facilities surveyed at both baseline and endline with deliveries in the previous 12 months. ^α Since 2014, Kalomo has been split into two districts: Kalomo and Zimba. For the purposes of this analysis, Kalomo baseline will be analyzed against the combined Kalomo/Zimba endline. ^β Since 2014, Mansa has been split into two districts: Mansa and Chembe. For the purposes of this analysis, Mansa baseline will be analyzed against the combined Mansa/Chembe endline. [~]Signal Function and EmONC Classification based on performance of each signal functions in past 3 months, not capacity to perform each signal function. Caesarean delivery and blood transfusion services define the difference between a CEmONC and BEmONC site. [~] Assisted Vaginal Delivery in Health Centers not promoted by Zambia MoH.

Figure 1 presents the percentage of facilities in SMGL Learning districts providing signal functions across all phases. Overall, capability increased in 5 signal function from Baseline to Endline: parenteral oxytocin; removal of retained products; assisted vaginal delivery (AVD); newborn resuscitation. C-sections stayed constant.

Figure 1: All Facilities Zambia SMGL Districts of Lundazi, Kalomo/Zimba^α, Mansa/Chembe^β, and Nyimba Signal Functions



Figures 2 – 5 present signal function capacity at facilities by district. Nyimba is the smallest SMGL district. Nyimba facilities had an increase in the following signal functions: parenteral oxytocin, removal retained products and newborn resuscitation. These signal functions declined: parenteral antibiotics, parenteral anti-convulsants, manual removal placenta and assisted vaginal delivery. Capacity for the two signal functions to attain CEmONC status remained constant.

Lundazi facilities had an increase in most signal functions, with a decline in parenteral anti-convulsant use and manual removal of placenta. Capacity for the two signal functions to attain CEmONC status was maintained from Baseline to Endline.

Kalomo district has the next highest population size, with Kalomo Hospital serving much of the district. Kalomo facilities had an increase in the facility capacity to perform most basic signal function from Baseline to Endline (especially newborn resuscitation), but there was a slight decline in parenteral

oxytocin use from 93% at Baseline to 87% at Endline. AVD use declined between end of Phase 1 and Endline. Capacity for C-sections remained constant while blood transfusion capacity declined sharply from Baseline to Endline.

Figure 2: Key SMGL Health Facility Assessment Signal Functions, Nyimba District

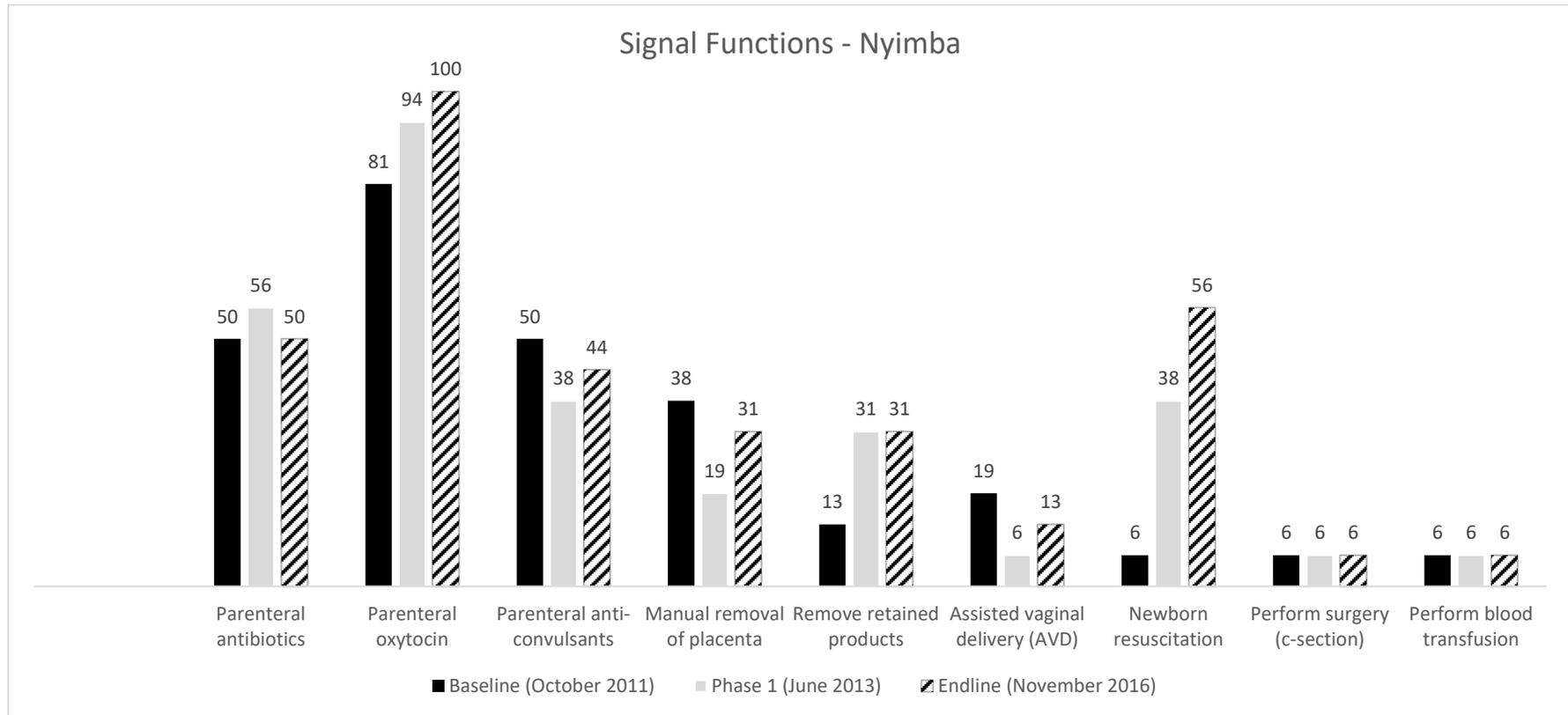


Figure 3: Key SMGL Health Facility Assessment Signal Functions, Lundazi District

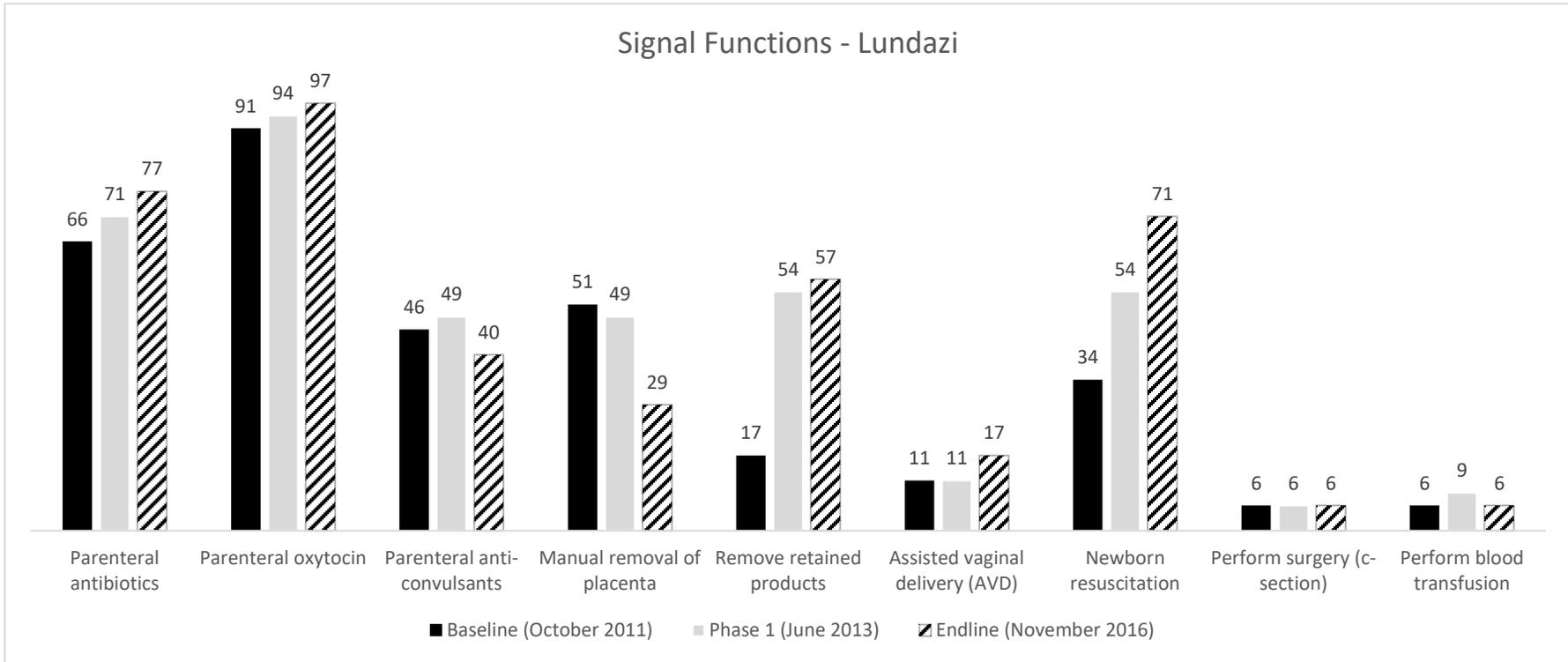
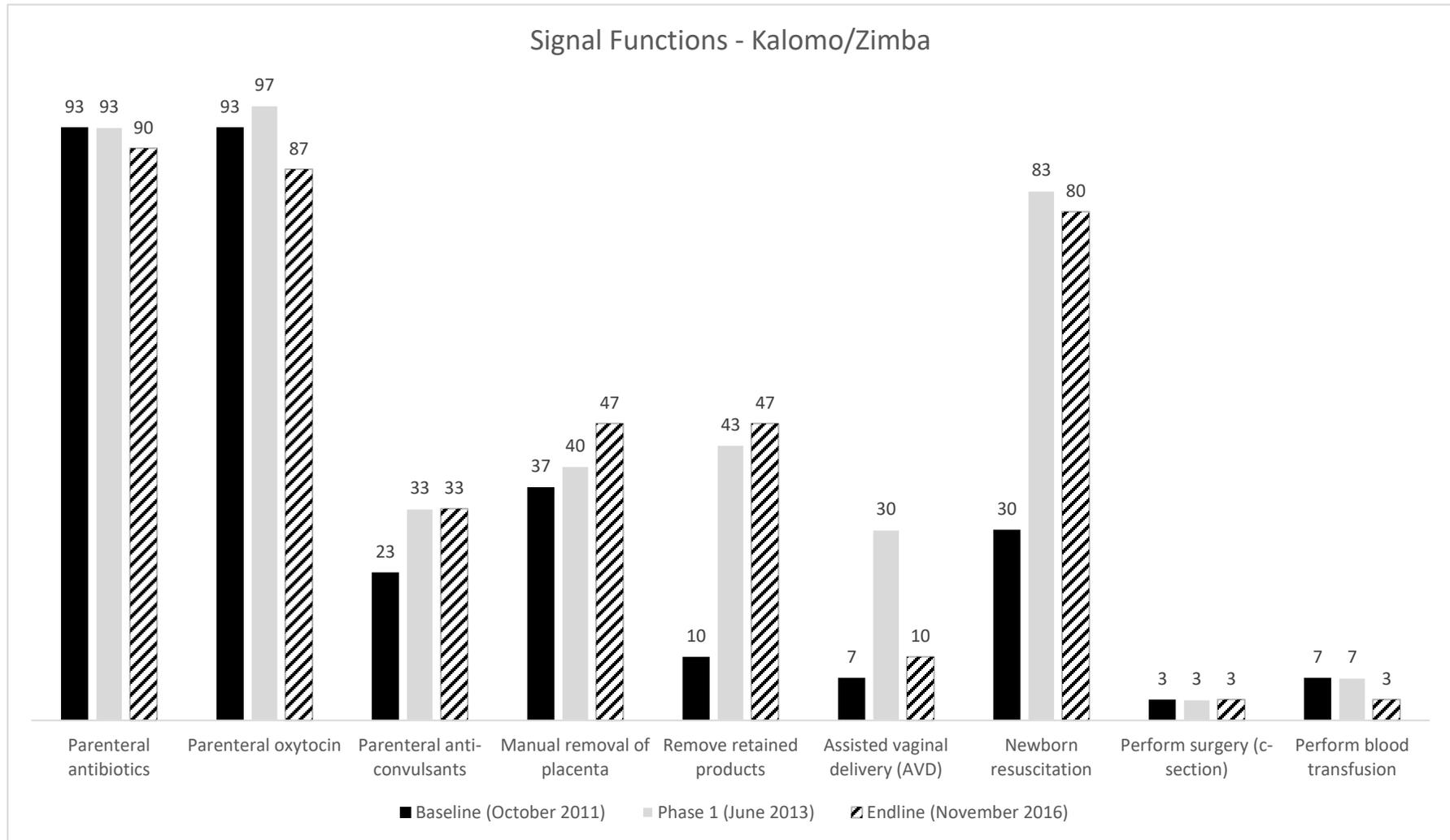
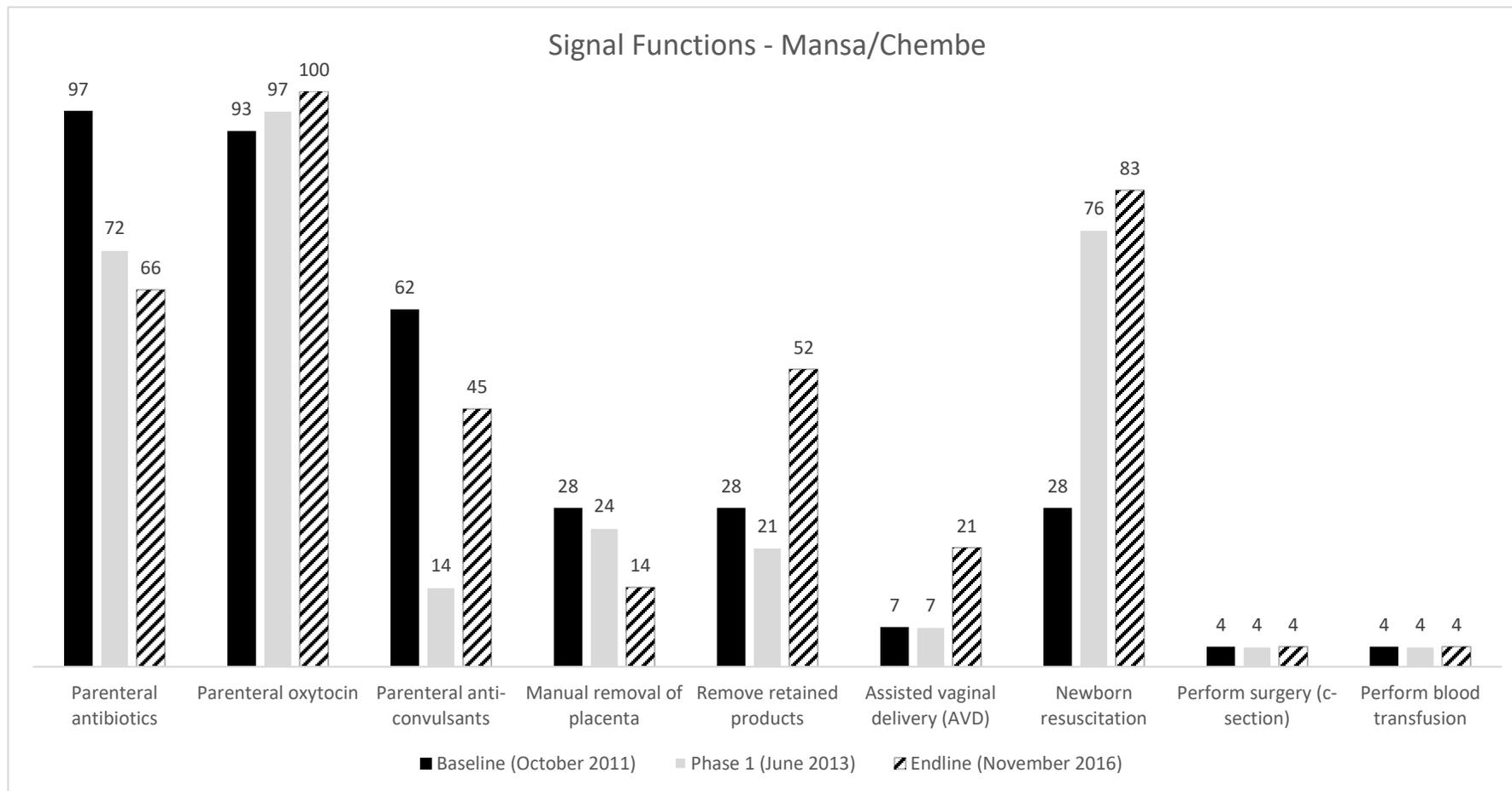


Figure 4: Key SMGL Health Facility Assessment Signal Functions, Kalomo/ Zimba District



Mansa district has a large hospital located in the district, Mansa General, which is a referral hospital serving women from the district, and also (to a smaller degree) women from neighboring countries of Malawi and DRC. In Mansa/Chembe these signal functions increased from Baseline to Endline: parenteral oxytocin, removal retained products, assisted vaginal delivery and newborn resuscitation. C-section capacity and blood transfusions remained constant from Baseline to Endline while parenteral antibiotic use, parenteral anticonvulsants and manual placenta removal all declined.

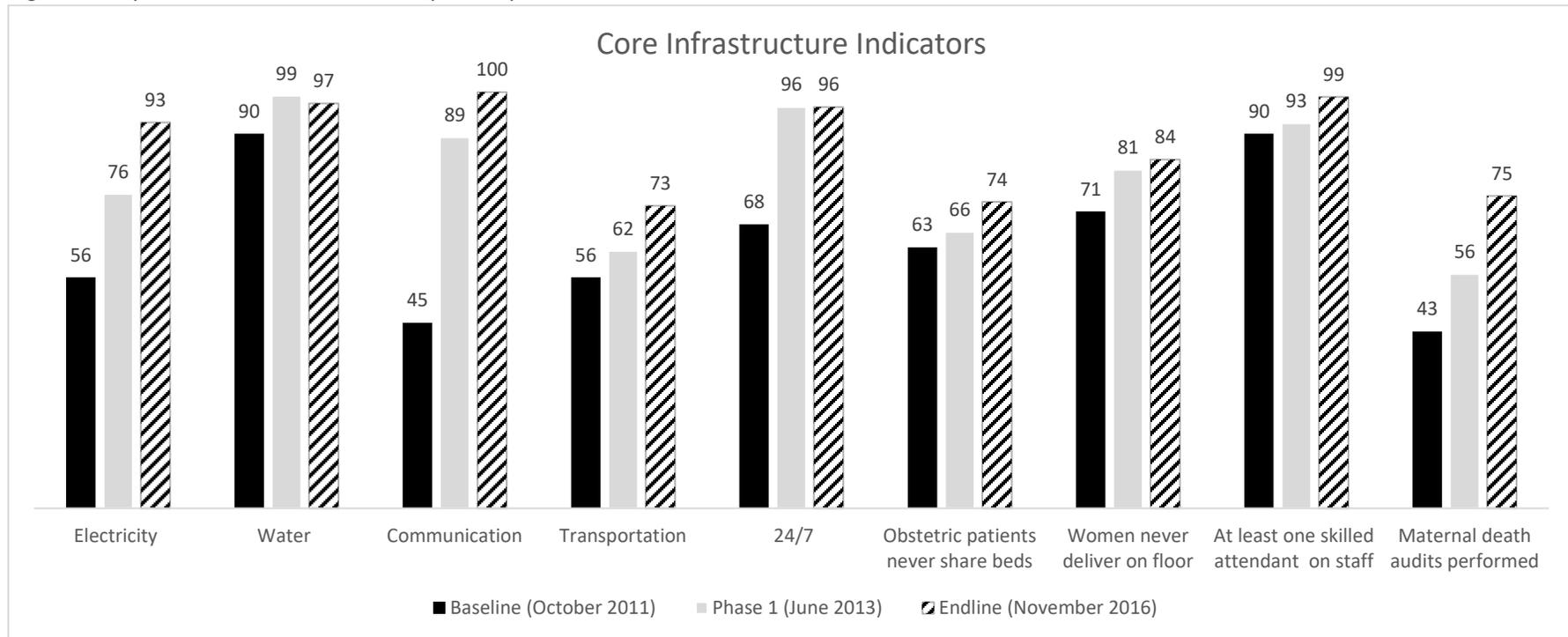
Figure 5: Key SMGL Health Facility Assessment Signal Functions, Mansa/ Chembe District



F) Core Infrastructure

Figure 6 presents key infrastructure indicators for all health facilities in Zambia SMGL Districts from Baseline to Endline. All key indicators increased from Baseline to Endline, with electricity up from 56% to 93%. Water availability increased from Baseline (90%) to Endline (97%). Communication access increased from 45% to 100%, probably due to the ubiquity of cell phones. Transportation was more functional at Endline, but still inadequate at 73%. Round the clock facility (24/7) access improved from 68% at Baseline to 96% at Endline. Facility capacity improved, but almost 26% of respondents indicated that obstetric patients share beds. Sixteen percent of facilities at Endline reported that women deliver on the floor. Skilled attendants were available at 99% of SMGL facilities, and 75% of facilities perform death audits. Note that not all infrastructure indicators shown for Kalomo/Zimba and Mansa/Chembe due to lack of Baseline data.

Figure 6: Key Infrastructure Indicators, by Facility Level



^α Since 2014, Kalomo has been split into two districts: Kalomo and Zimba. For the purposes of this analysis, Kalomo baseline will be analyzed against the combined Kalomo/Zimba endline

^β Since 2014, Mansa has been split into two districts: Mansa and Chembe. For the purposes of this analysis, Mansa baseline will be analyzed against the combined Mansa/Chembe endline

[†] Data not available for Kalomo District at baseline, and thus Kalomo baseline and Kalomo/Zimba endline removed from analysis

Figures 7 – 10 present key infrastructure indicators all health facilities by district. All facilities in Nyimba and Mansa/Chembe have electricity, water, and communication at Endline. Kalomo/Zimba facilities had reduced water availability most likely due to the on-going drought affecting Southern Africa. Despite the increase in facility deliveries and higher referral numbers in all SMGL districts, capacity to provide services has increased for all districts from Baseline to Endline based on the questions, ‘Women never deliver on floor’ and ‘Obstetric patients never share beds’ with an increase in responses to these two questions from Baseline to Endline. Mansa/Chembe did not have Baseline data available but the number of women delivering on the floor increased from end of Phase 1 to Endline, perhaps due to increased facility deliveries. Given the low density and large distances in SMGL districts, transport continues to be an issue, especially in Lundazi and Kalomo/Zimba with Lundazi transport availability declining from end of Phase 1 to Endline. There are several possible explanation for the on-going transport concerns. Of all the SMGL districts reported, Kalomo/Zimba and Lundazi are larger in size than the others. Additionally, in these districts, the rainy seasons can prove even more challenging as some areas are cut off completely despite availability of transportation. In Phase 1, a total of 4 ambulances were purchased for Lundazi but due to engine malfunction and motor vehicle accidents in the course of the year, this district was without transport in some zones, causing them to rely on ambulances in surrounding zonal areas, thus a less adequate transport system.

Maternal death audits at Endline are performed in 81% of Nyimba facilities, 77% of Lundazi facilities and 69% of Mansa/Chembe facilities (not shown). The Ministry of Health, supported by donors, has placed a strong emphasis on maternal death audits, supporting SMGL efforts. There was a substantial increase in death audits from Baseline to Endline for SMGL facilities.

Figure 7: Core Infrastructure Indicators by District, Nyimba

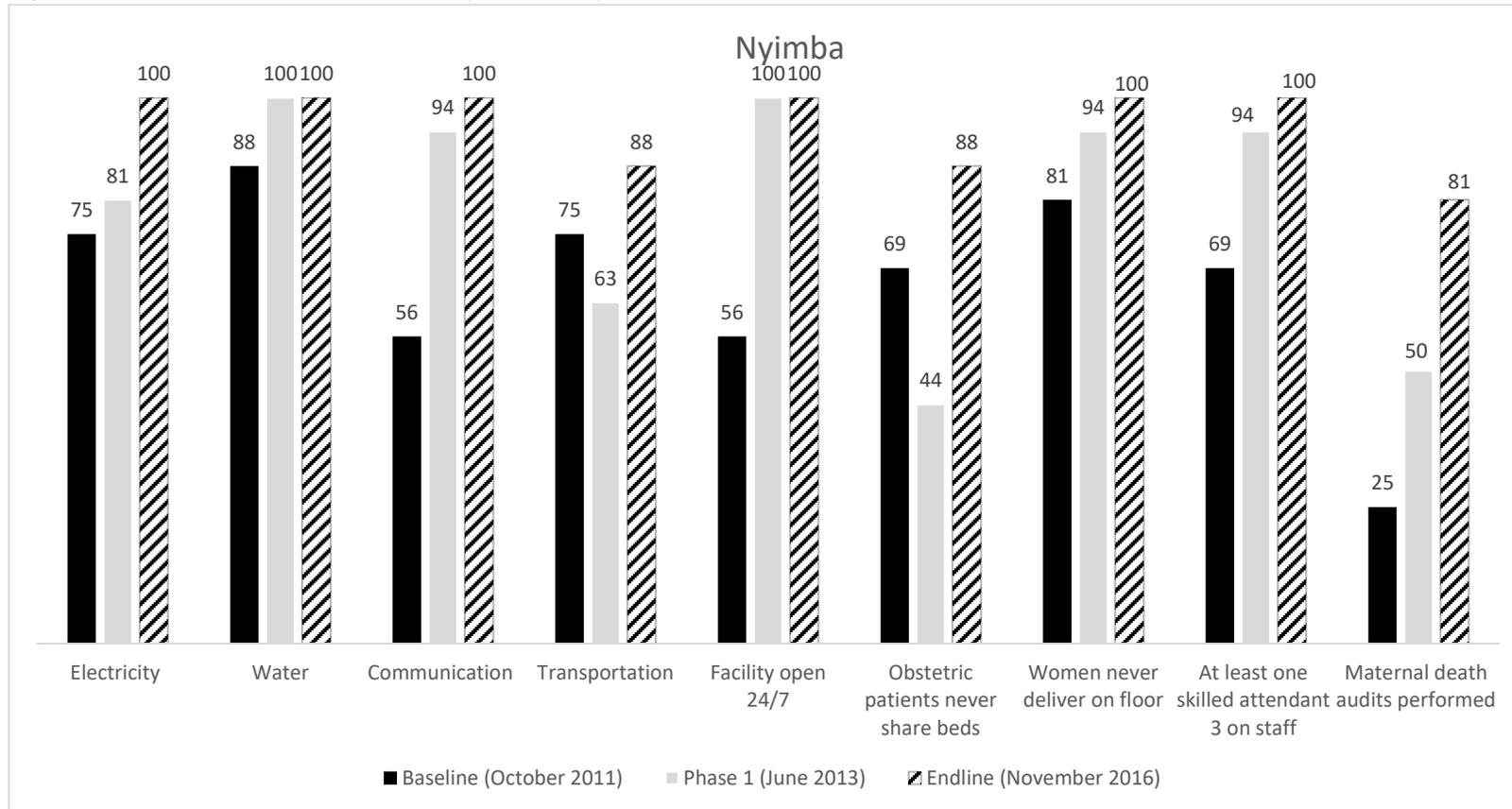


Figure 8: Core Infrastructure Indicators by District, Lundazi

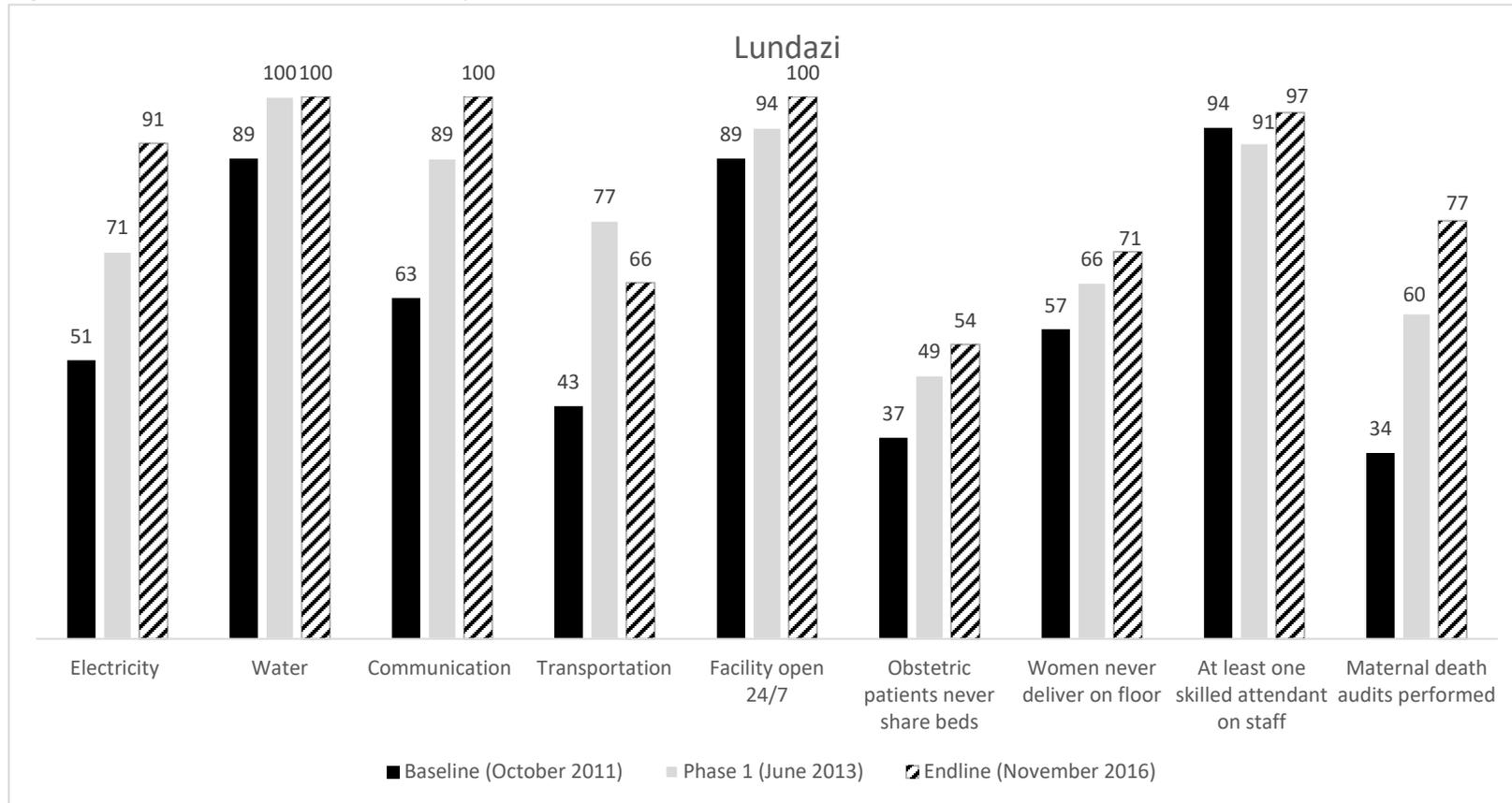
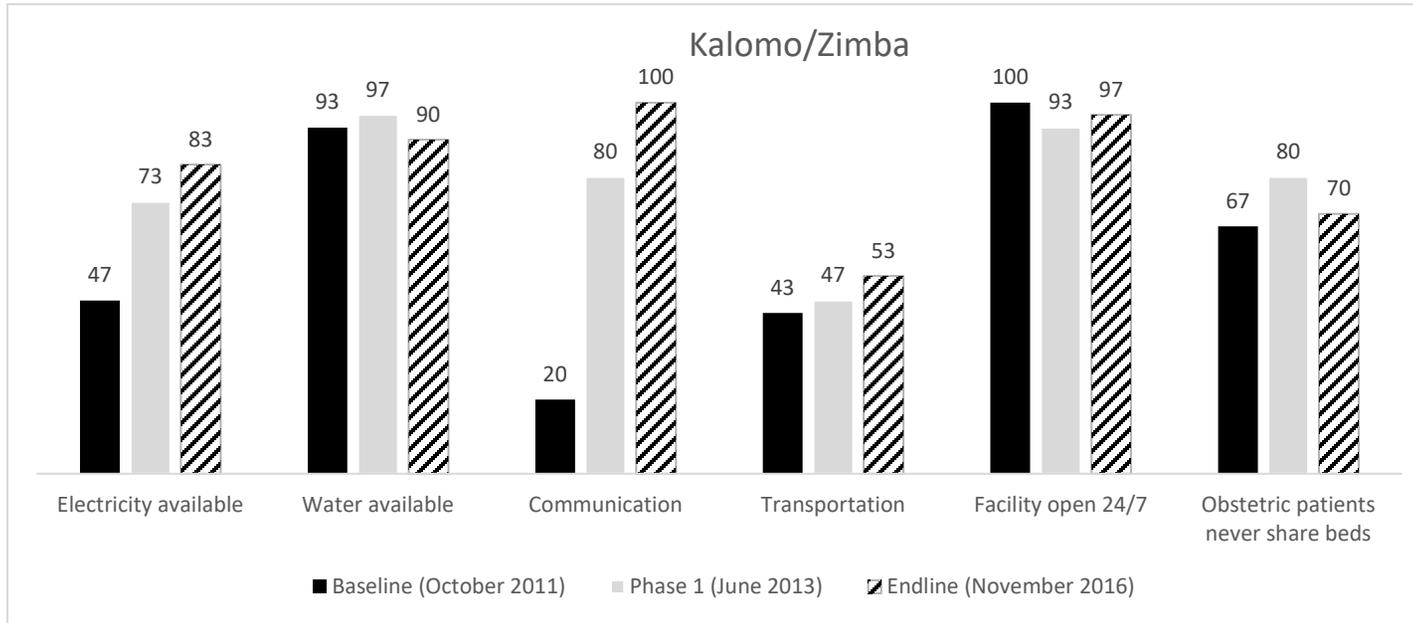
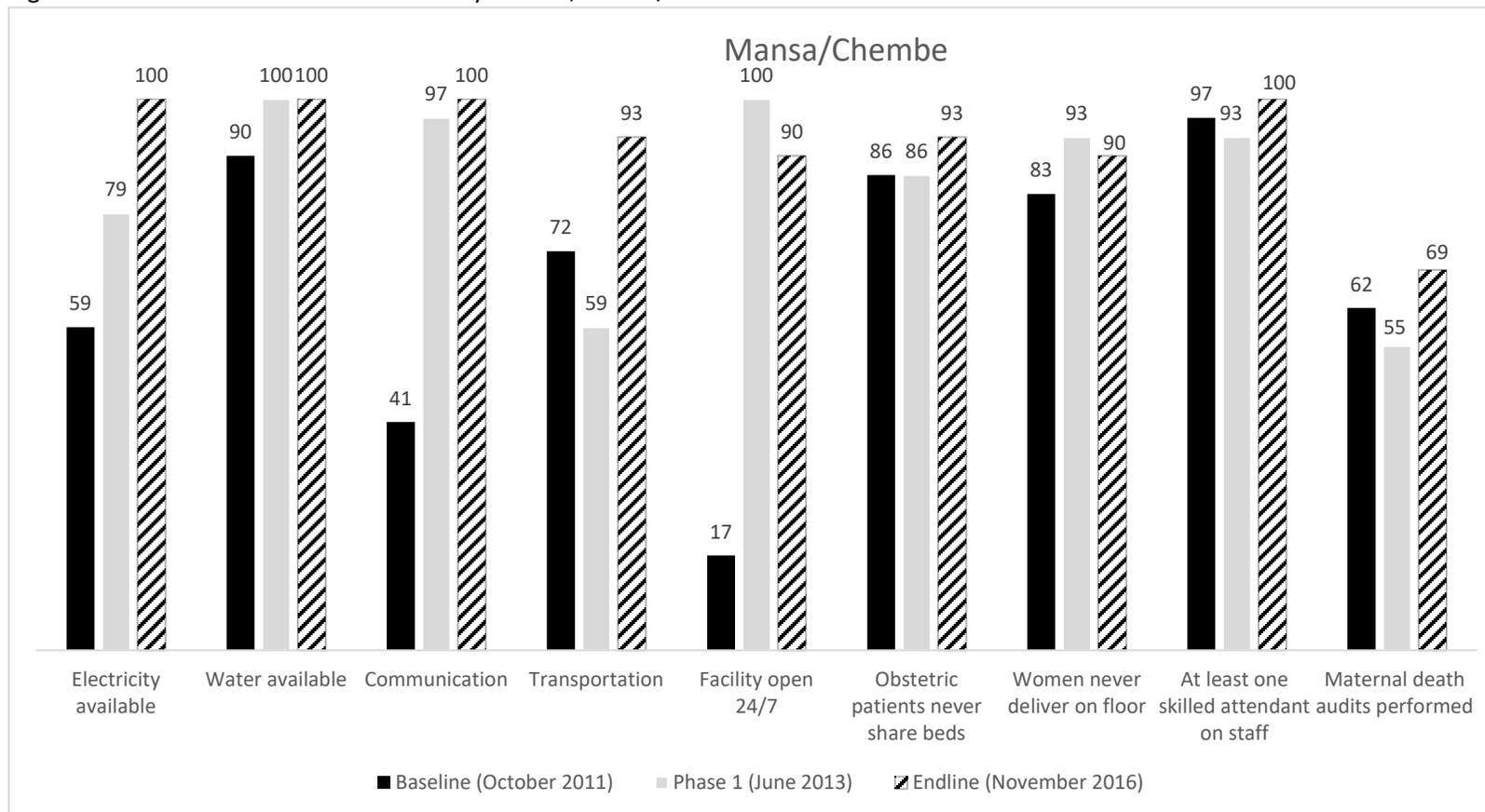


Figure 9: Core Infrastructure Indicators by District, Kalomo/Zimba



+Fewer infrastructure indicators collected

Figure 10: Core Infrastructure Indicators by District, Mansa/Chembe*



*Indicators missing for Baseline data

G) Zambia-specific Infrastructure

Infrastructure indicators specific to Zambia’s healthcare system are shown in Table 5. Ministry of Health (MOH) patient referral books help facility staff track and follow patients referred to other facilities. In addition, availability of patient referral books in facilities are a means of measuring how well referred patients are tracked.

MoH Referral book availability remained constant for hospitals from Baseline to Endline, but availability declined for health centers and health posts resulting in an overall decline. Due to inadequate printing of referral books by MOH, hospitals are prioritized for receipt of the available copies.

The participation of Safe Motherhood Action Groups (SMAG's) declined in hospitals from Baseline to Endline and increased in health centers and health posts, with an overall increase from 63% to 86% from Baseline to Endline. This is a positive impact as SMAG's are the first link between communities and entry-level health care facilities (rather than hospitals). In Zambia, all level one Hospitals are now referral centers, therefore they have ill-defined catchment areas. Currently hospitals do not have SMAG's, as SMAG's are attached to Health Centers and Health Posts rather than Hospitals.

Access to mother's shelters declined for hospitals, and increased substantially for health centers and health posts for an overall Baseline to Endline increase. Construction and upgrade of mother's shelters was a key SMGL activity in rural facilities. At the time of the HFA, these mother's shelter were functioning, while others were completed but awaiting for commissioning. Mother's shelters were built next to certain health posts and strictly speaking, by establishment, these facilities are called health posts. However, GRZ has made a deliberate effort to upgrade certain health posts in certain districts (e.g. Nyimba) to provide a higher level of service than are typically expected. Such health posts are managed by trained health personnel like nurses and midwives and records show that they do conduct deliveries, unlike the typical ones that just conduct ANC.

Table 5: Zambia-specific indicators, All Facilities

	Facility Type									All Facilities		
	Hospital			Health Center			Health Post					
	Baseline (October 2011)	Phase 1 (June 2013)	Endline (November 2016)	Baseline (October 2011)	Phase 1 (June 2013)	Endline (November 2016)	Baseline (October 2011)	Phase 1 (June 2013)	Endline (November 2016)	Baseline (October 2011)	Phase 1 (June 2013)	Endline (November 2016)
Zambia-specific Infrastructure Indicators												
Referral book available	66.7	100.0	66.7	64.8	95.5	62.5	43.8	100.0	50.0	61.8	96.4	60.9
Safe Motherhood Action Group associated with facility †	50.0	25.0	25.0	66.7	90.0	100.0	56.3	87.5	100.0	63.8	86.3	96.3
Mothers shelter associated with facility †	75.0	50.0	50.0	30.0	35.0	53.3	12.5	6.3	31.3	28.8	30.0	48.8

† Data not available for Kalomo District at baseline, and thus Kalomo baseline and Kalomo/Zimba endline removed from analysis

α Since 2014, Kalomo has been split into two districts: Kalomo and Zimba. For the purposes of this analysis, Kalomo baseline will be analyzed against the combined Kalomo/Zimba endline

Zambia-specific indicators by district are presented in Figure 10 to Figure 12. Baseline data were not available for Kalomo. Referral book availability declined from Baseline to Endline, especially in Mansa/Chembe. Safe Motherhood Action groups (SMAG's) participation declined in the three SMGL districts shown. Mother's shelters associated with facilities declined in all districts.

Figure 10: Zambia specific indicators, Nyimba

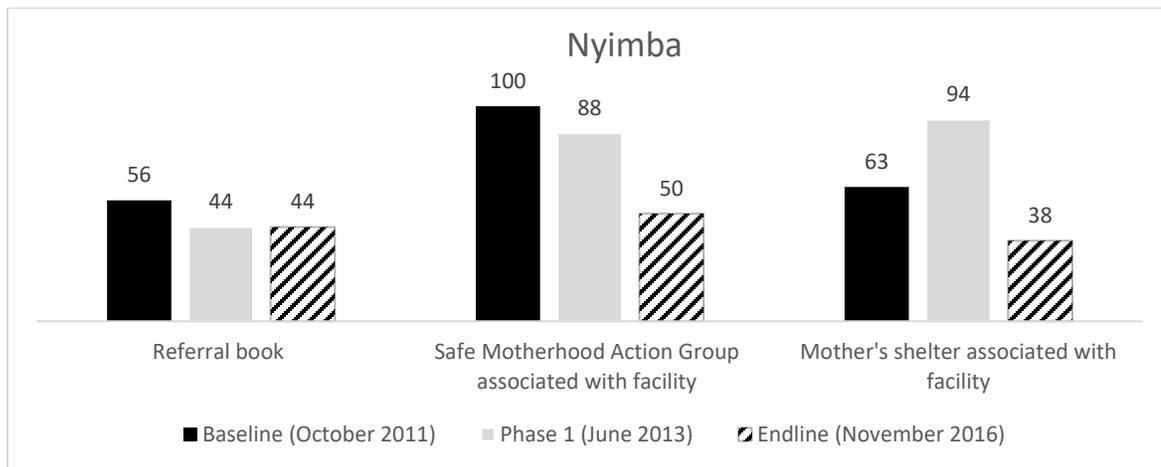


Figure 11: Zambia specific indicators, Lundazi

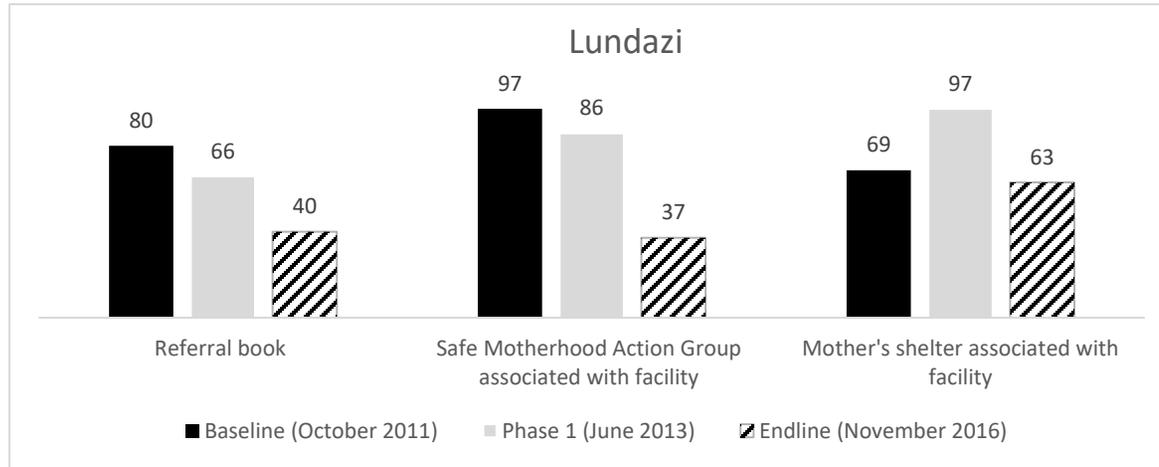
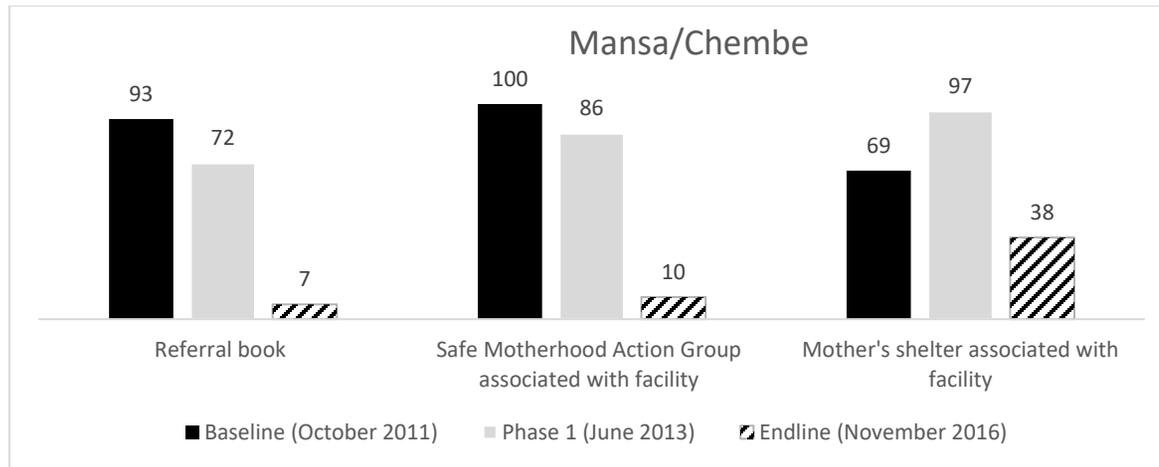


Figure 12: Zambia specific indicators, Mansa/Chembe



H) Standard Practice Indicators

Standard practice indicators by facility type are presented in Table 6. Hospitals maintained 100% Active Management of the Third Stage of Labor (AMTSL) practice from Baseline to Endline, while health centers and health posts show a strong uptick in AMTSL capacity. All SMGL district hospitals deliver breech babies, while breech delivery rates for health centers and health posts declined from end of Phase 1 to Endline. This decline may be

attributed to stronger referral systems, with more challenging cases sent to regional hospitals. Rapid HIV test administration in maternity wards during past 3 months decreased from Baseline to Endline for hospitals and health posts, with a slight increase from end of Phase 1 to Endline for hospitals. ARV administration to mothers declined over the time period from 69.1% to 47.3%, showing an especially large decline in hospital maternity wards from Baseline to Endline. Newborns were still given ARV drugs in the past 3 months, with a slight overall increase from Baseline to Endline. The reduction in ARV administration is also reflected in the 2016 routine quarterly SMGL data gathering activity (results not reported here), perhaps a result of the PEPFAR pivot. PEPFAR is pivoting the scale-up of resources and services towards health service delivery sites with moderate and high yield of patients, communities that link patients to those sites, and geographic areas with a high burden of HIV³.

In many cases, health posts that provide AMTSL are given that name administratively by MOH, but they are managed by trained health personnel such as nurses and midwives. University of Zambia (UNZA) records indicate that these facilities do conduct deliveries. These health posts are different from the ones that simply conduct ANC and are normally managed by Community Health Assistants (CHA's) and Classified Daily Employee (CDE's). CHA's are a new cadre who undergo 1 year training in health provision, while CDE's are support staff/general workers.

During HFA administration, respondents were asked whether or not in the last 3 months they have administered Uterotonics. If they said yes to 'Uterotonics', then the next question asked whether the staff routinely practice Active Management of 3rd Stage of Labor.

Table 6: Standard Practice Indicators by Facility Level

	Facility Type									All Facilities		
	Hospital			Health Center			Health Post					
	Baseline (October 2011)	Phase 1 (June 2013)	Endline (November 2016)	Baseline (October 2011)	Phase 1 (June 2013)	Endline (November 2016)	Baseline (October 2011)	Phase 1 (June 2013)	Endline (November 2016)	Baseline (October 2011)	Phase 1 (June 2013)	Endline (November 2016)
Standard Practice												
Routine practice: Active management of 3rd stage of labor (AMTSL)	100.0	100.0	100.0	70.5	89.8	94.3	68.8	100.0	100.0	71.8	91.8	95.5
Breech delivery performed in last 3 months	100.0	100.0	100.0	34.1	48.9	38.6	31.3	56.3	18.8	37.3	52.7	39.1
Rapid HIV test used in maternity ward in last 3 months	100.0	66.7	83.3	63.6	59.1	63.6	62.5	68.8	56.3	65.5	60.9	63.6
ARVs given to HIV+ mothers in maternity ward last 3 months	100.0	100.0	50.0	70.5	70.5	46.6	50.0	56.3	50.0	69.1	70.0	47.3
ARVs given to newborns in maternity ward in last 3 months	100.0	100.0	100.0	67.1	72.7	67.1	43.8	81.3	50.0	65.5	75.5	66.4

³ <https://www.pepfar.gov/documents/organization/237389.pdf>

Standard practice results by districts are presented in Figure 13 to Figure 16. Nyimba facilities have the highest AMTSL rate at Endline, followed by Lundazi, Mansa/Chembe and Kalomo.

Overall AMTSL rates for all districts at Endline are higher than Baseline. Table 6 above showed high breech delivery rates at hospitals, so districts with hospitals record higher breech delivery. Administration of the rapid HIV test in the past 3 months at Endline is highest in Mansa/Chembe and Kalomo at 67%, followed by Nyimba at 63% and lastly, Lundazi at 54%. However, rapid HIV test use has declined from Baseline to Endline for all districts but Nyimba. ARV to HIV positive mothers is highest in Nyimba at 69% and lowest in Lundazi at 34%. ARV's given to newborns is highest in Nyimba at 81%. Lundazi reports the lowest provision of ARV's to newborns at 57%, with a decline from Baseline.

Figure 13: Standard Practice, Nyimba

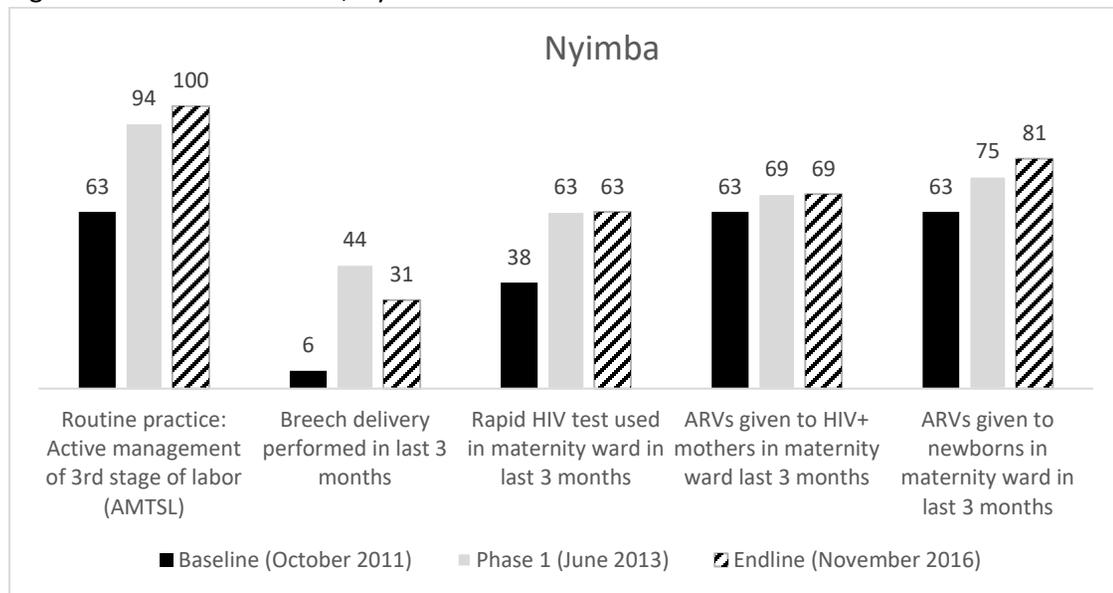


Figure 14: Standard Practice, Lundazi

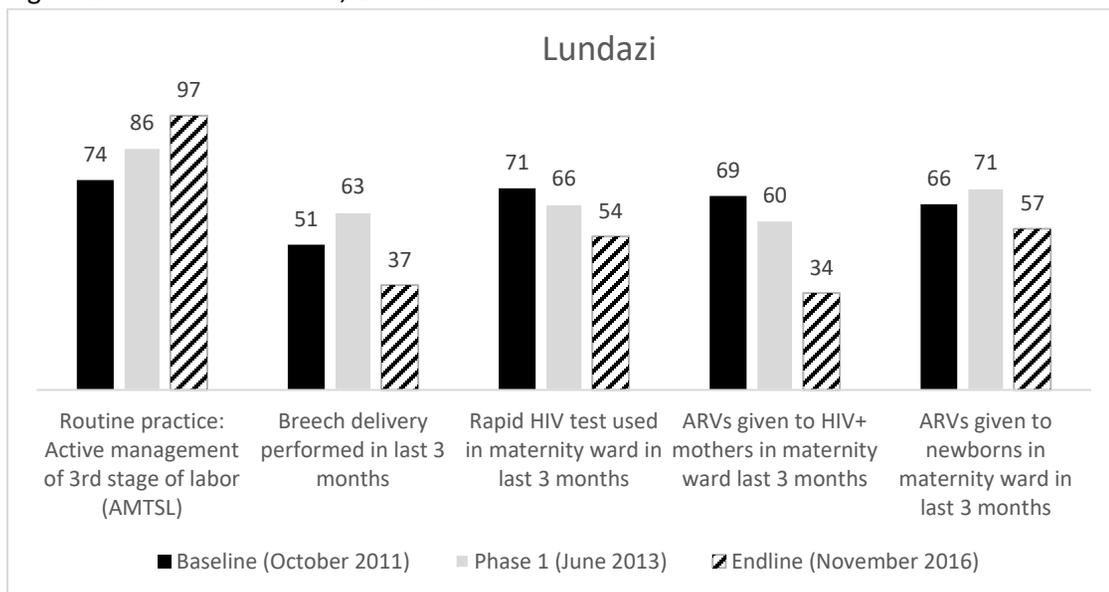


Figure 15: Standard Practice, Kalomo/ Zimba

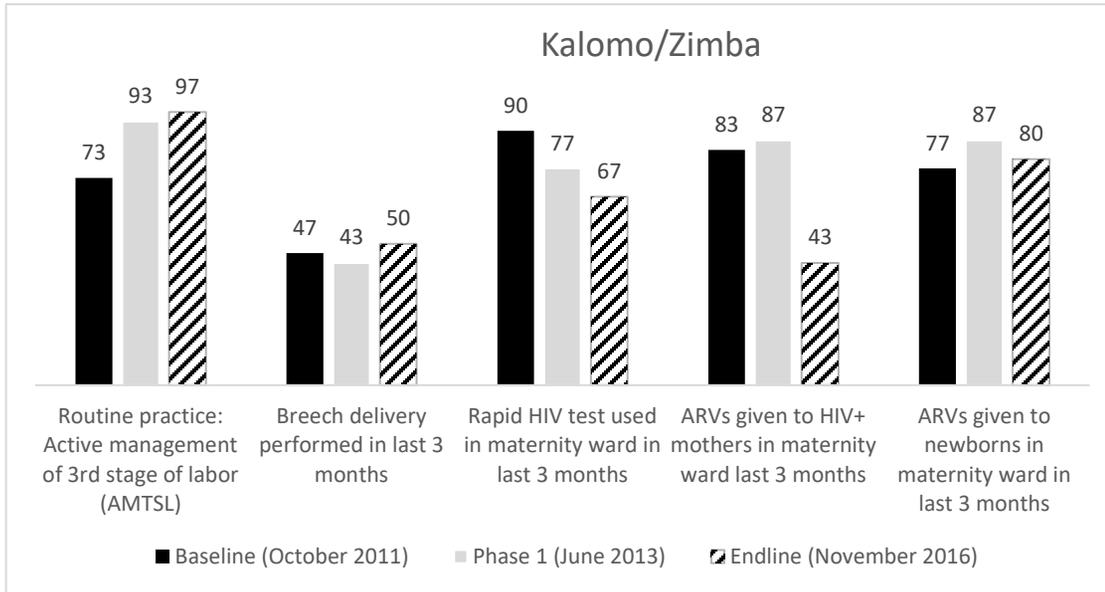
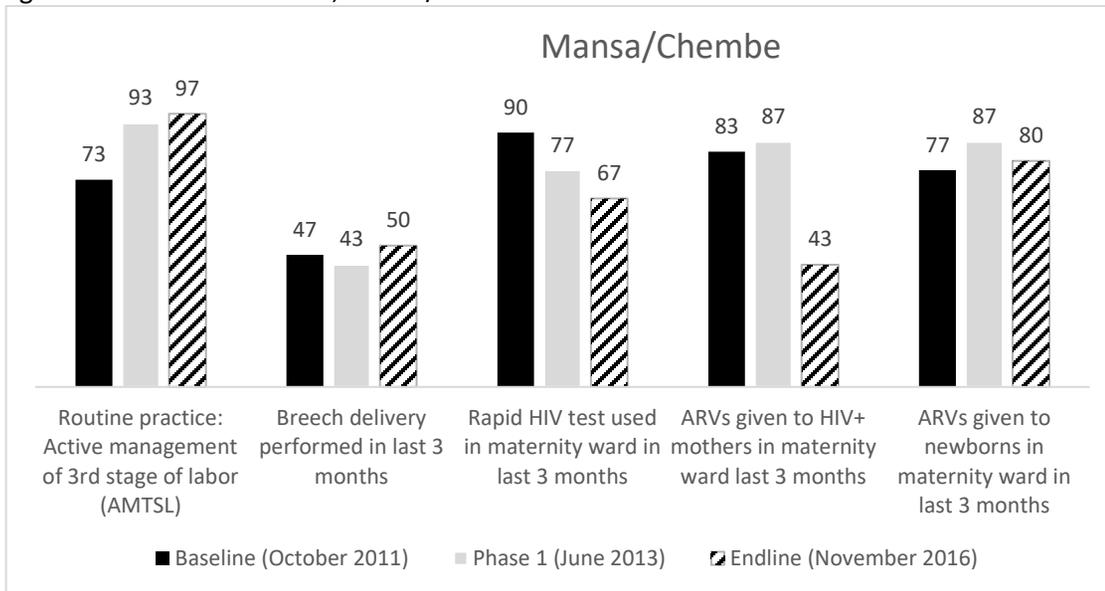


Figure 16: Standard Practice, Mansa/ Zimba



I) Drug and HIV test kit Stock

Drug availability is a key indicator of a strong, well-functioning health system. Table 7 presents results on drug availability from Baseline to Endline for SMGL district facilities. Hospitals overall have good drug and HIV test kit stock rates, with 100% reporting no stock-outs of magnesium sulfate and HIV test kits in the past 12 months. Stocks for HIV rapid test kits remain high for hospitals and health posts at 100%, while increasing from 81.7% to 91.7% for health centers. However, stock outs for oxytocin were found in 25% of hospitals.

Gentamicin, used for treatment of serious infections, stocks remain a concern, with 66.7% of hospitals, 46.6% of health centers and 50% of health posts reporting availability. Availability of Gentamicin declined from end of Phase 1 to Endline across all facility types.

Stock of ARV drugs are inconsistent at hospitals, with 50% reporting ARV medications always available. ARV drug availability declined from Baseline to Endline for health centers from 21.7% to 16.7% and remained constant from Baseline to Endline for Health Posts but declining from 12.5% to 6.3% from end of Phase 1 to Endline.

ANC routine medication availability is 50% at hospitals, and higher at health centers (83%) and 87.5% at health posts. Demand is most likely higher at hospitals, especially with the improved referral system.

Long term family planning methods increased for all facilities from 20% to 71.3% from Baseline to Endline, while short term methods remained constant at 97.5%.

In general, drug availability remained constant, or increased, from Baseline to Endline. The exceptions are ARV drug stocks and gentamicin.

Table 7: Key Drug Availability by Facility Level

	Facility Type									All Facilities		
	Hospital			Health Center			Health Post					
	Baseline (October 2011)	Phase 1 (June 2013)	Endline (November 2016)	Baseline (October 2011)	Phase 1 (June 2013)	Endline (November 2016)	Baseline (October 2011)	Phase 1 (June 2013)	Endline (November 2016)	Baseline (October 2011)	Phase 1 (June 2013)	Endline (November 2016)
Key Drug Availability												
No stock out last 12 months: magnesium sulfate †\$	100.0	100.0	100.0	17.9	86.2	35.6	6.7	87.5	56.3	20.0	87.2	43.0
No stock out last 12 months: oxytocin †\$	75.0	100.0	75.0	71.9	96.6	76.7	87.5	100.0	68.8	75.3	97.4	75.0
ANC routine medications ⁵ always available	50.0	33.3	50.0	56.8	35.2	83.0	50.0	37.5	87.5	55.5	35.5	81.8
HIV rapid test kits currently available †	75.0	100.0	100.0	81.7	91.7	91.7	87.5	100.0	100.0	82.5	93.8	93.8
Gentamicin currently available	66.7	100.0	66.7	64.8	85.2	46.6	81.3	87.5	50.0	67.3	86.4	48.2
ARV medications ⁴ always available †	50.0	50.0	50.0	21.7	10.0	16.7	6.3	12.5	6.3	20.0	12.5	16.3
At least 1 short-term family planning method ⁶ always available †	75.0	75.0	75.0	100.0	100.0	98.3	93.8	100.0	100.0	97.5	98.8	97.5
At least 1 long-term family planning method ⁷ always available †	50.0	75.0	75.0	21.7	51.7	73.3	6.3	31.3	62.5	20.0	48.8	71.3

α Since 2014, Kalomo has been split into two districts: Kalomo and Zimba. For the purposes of this analysis, Kalomo baseline will be analyzed whereas the combined Kalomo/Zimba endline will be analyzed.

β Since 2014, Mansa has been split into two districts: Mansa and Chembe. For the purposes of this analysis, Mansa baseline will be analyzed whereas the combined Mansa/Chembe endline will be analyzed.

¹ Communication includes 2-way radio, landline, or cell phone w/service.

² Transportation includes motor vehicle or motorcycle.

³ Skilled attendant includes doctor, nurse, or midwife

⁴ ARV medications include: ARV prophylaxis for mother (sd-NVP, AZT/3TC (Combivir), ART for mother and infant)

5 ANC routine medications include: iron, folic acid, mebendazole, Fansidar (IPT)

6 Short-term family planning method includes: oral contraceptives, male/female condoms, and 3-month injectables

7 Long-term family planning method includes: intrauterine devices, implants

^ Only facilities that did not change functional level between baseline and endline included in table.

† Data not available for Kalomo District at baseline, and thus Kalomo baseline and Kalomo/Zimba endline removed from analysis.

*Signal Function and EmONC Classification based on performance of each signal functions in past 3 months, not capacity to perform each signal function.

Caesarean delivery and blood transfusion services define the difference between a CEmONC and BEmONC site.

~ Assisted Vaginal Delivery in Health Centers not promoted by Zambia MoH.

Δ Asterisks indicate significance level using the McNemar test as follows: ***p<.01, **p<.05, *p<.1, NS=Not significant

Drug availability by district is shown in Figure 17 – Figure 20. Nyimba and Lundazi has the lowest stockout of magnesium sulfate, with 50-51% of facilities reporting no stock-outs in last 12 months. Twenty nine percent of Mansa/Chembe facilities reported no stock-outs in last 12 months.

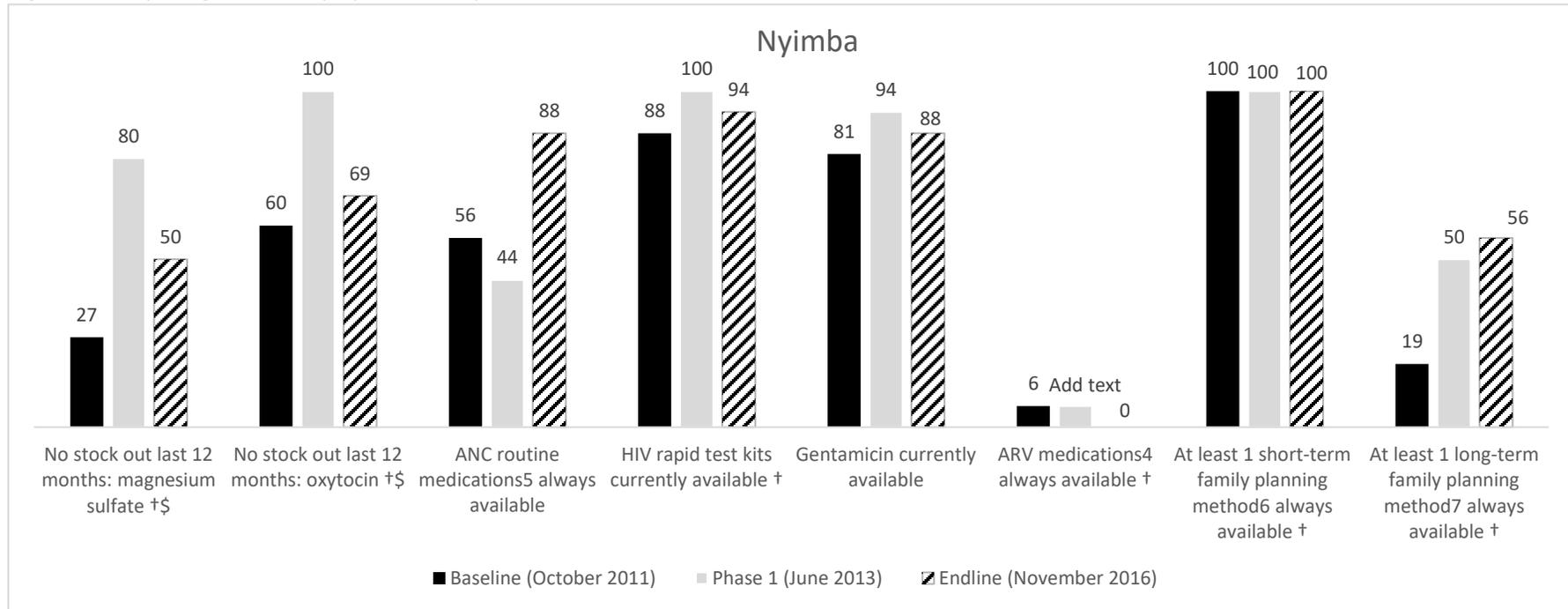
ANC routine drug availability has increased across all districts from Baseline to Endline, except for Kalomo/Zimba. Availability of HIV rapid kits increased for Nyimba and Lundazi, but declined for Mansa/Chembe and Nyimba from end of Phase 1 to Endline due to supply chain issues.

Gentamicin stock declined for all SMGL districts, except for Nyimba increasing from 82% to 88% availability. Lundazi facilities experienced a severe drop from 83% to 49%, while Kalomo/Zimba stocks dropped from 44% at Baseline to 37% at Endline.

ARV medication stocks are problematic for all SMGL districts, and looking at the all facilities analysis section in the last column of Table 7 (above), declined from 20% to 16.3%. Zambia is chronically challenged by inadequate supply chain and logistics management capacity. During the period of SMGL, implementing partners actively supplemented commodity stock such as rapid HIV test kits at all facility levels. However, the stock returned to baseline at the conclusion of the SMGL Initiative.

For family planning, short-term stock remained mostly constant from Baseline to Endline. Long-term family planning stock increased in Nyimba from Baseline (18%) to Endline (56%), from end of Phase 1 (45%) to Endline (93%) in Mansa/Chembe and showed a dramatic stock rise in Lundazi from 9% to 60%.

Figure 17: Key Drug Availability by District, Nyimba District



α Since 2014, Kalomo has been split into two districts: Kalomo and Zimba. For the purposes of this analysis, Kalomo baseline will be analyzed whereas the combined Kalomo/Zimba endline will be analyzed.

β Since 2014, Mansa has been split into two districts: Mansa and Chembe. For the purposes of this analysis, Mansa baseline will be analyzed whereas the combined Mansa/Chembe endline will be analyzed.

† Communication includes 2-way radio, landline, or cell phone w/service.

‡ Transportation includes motor vehicle or motorcycle.

§ Skilled attendant includes doctor, nurse, or midwife

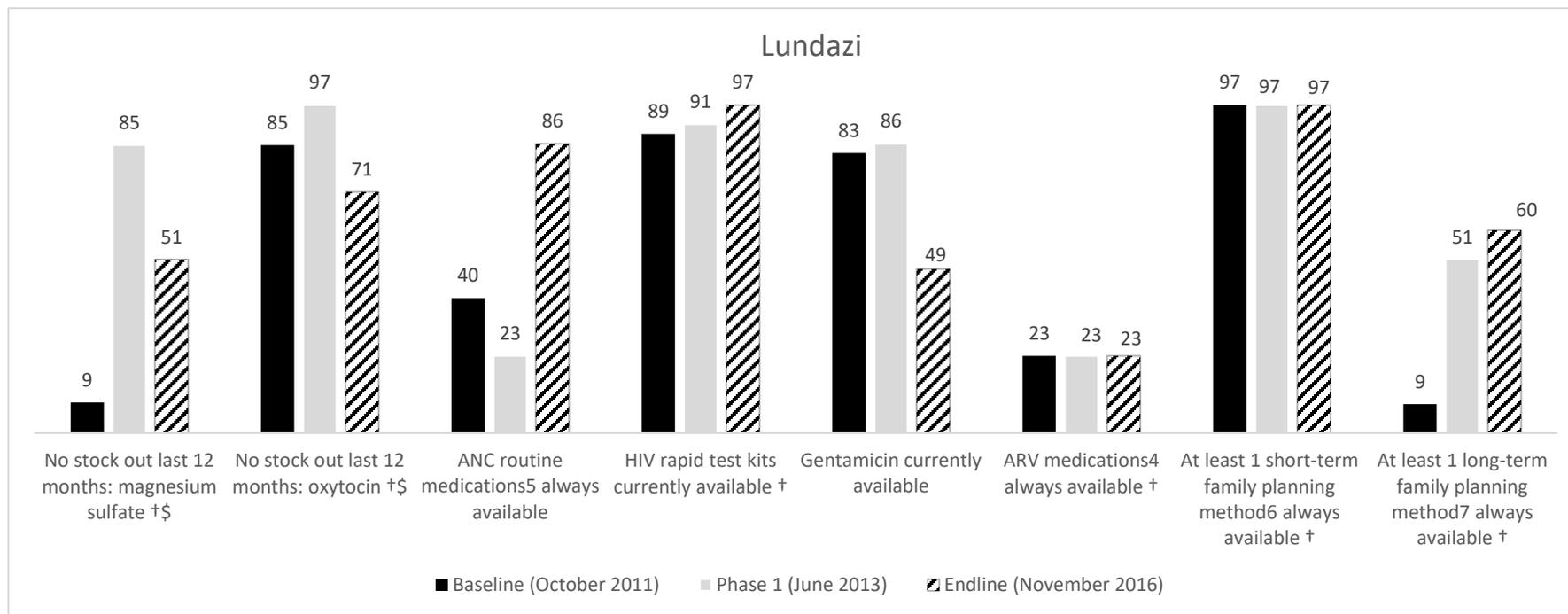
4 ARV medications include: ARV prophylaxis for mother (sd-NVP, AZT/3TC (Combivir), ART for mother and infant)

5 ANC routine medications include: iron, folic acid, mebendazole, Fansidar (IPT)

6 Short-term family planning method includes: oral contraceptives, male/female condoms, and 3-month injectables

7 Long-term family planning method includes: intrauterine devices, implants

Figure 18: Key Drug Availability by District, Lundazi District



α Since 2014, Kalomo has been split into two districts: Kalomo and Zimba. For the purposes of this analysis, Kalomo baseline will be analyzed whereas the combined Kalomo/Zimba endline will be analyzed.

β Since 2014, Mansa has been split into two districts: Mansa and Chembe. For the purposes of this analysis, Mansa baseline will be analyzed whereas the combined Mansa/Chembe endline will be analyzed.

† Communication includes 2-way radio, landline, or cell phone w/service.

² Transportation includes motor vehicle or motorcycle.

³ Skilled attendant includes doctor, nurse, or midwife

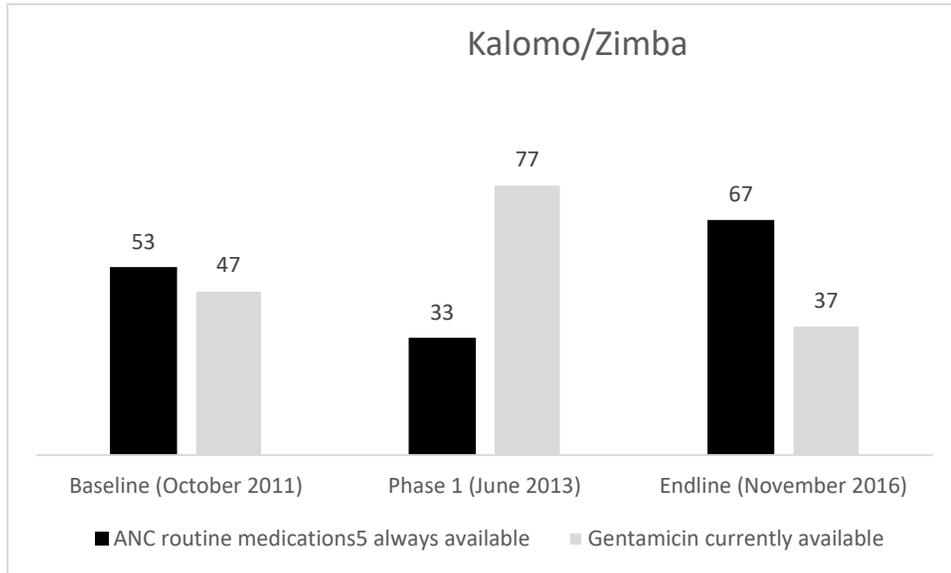
⁴ ARV medications include: ARV prophylaxis for mother (sd-NVP, AZT/3TC (Combivir), ART for mother and infant)

⁵ ANC routine medications include: iron, folic acid, mebendazole, Fansidar (IPT)

⁶ Short-term family planning method includes: oral contraceptives, male/female condoms, and 3-month injectables

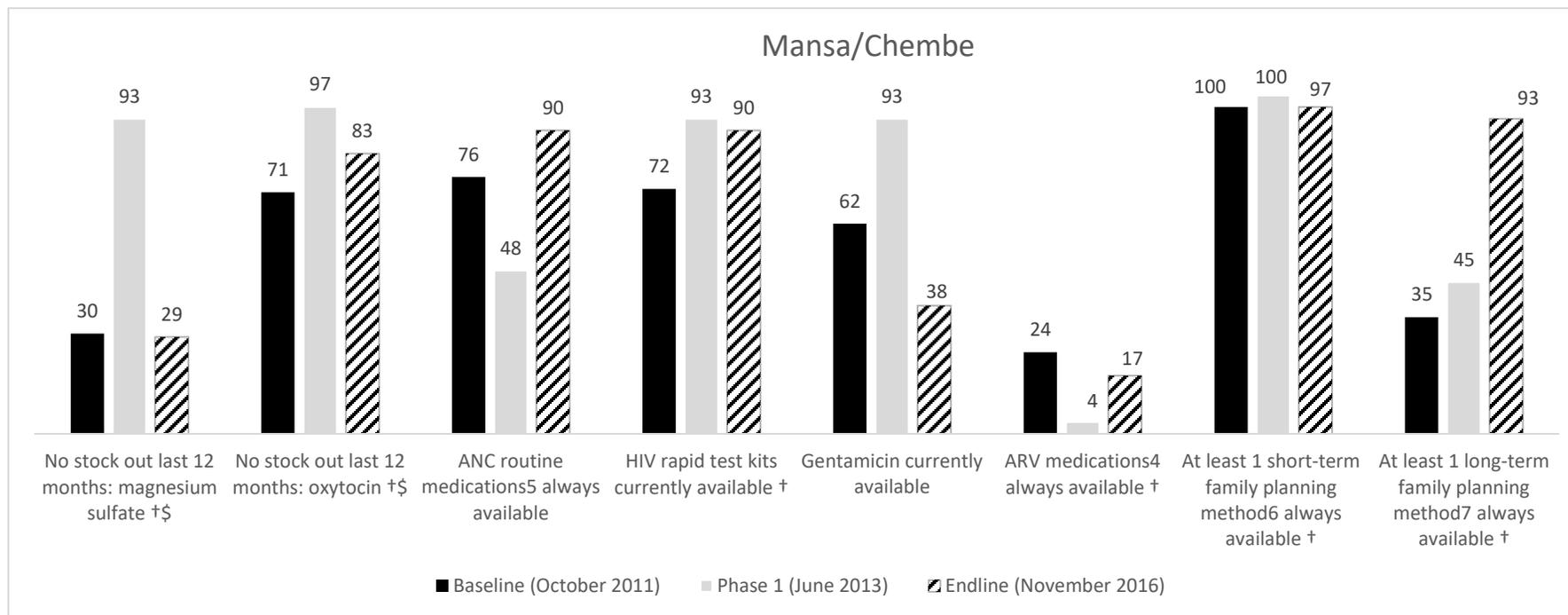
⁷ Long-term family planning method includes: intrauterine devices, implants

Figure 19: Key Drug Availability by District, Kalomo/Zimba District~



~Results incomplete

Figure 20: Key Drug Availability by District, Mansa/Chembe District*



α Since 2014, Kalomo has been split into two districts: Kalomo and Zimba. For the purposes of this analysis, Kalomo baseline will be analyzed whereas the combined Kalomo/Zimba endline will be analyzed.

β Since 2014, Mansa has been split into two districts: Mansa and Chembe. For the purposes of this analysis, Mansa baseline will be analyzed whereas the combined Mansa/Chembe endline will be analyzed.

† Communication includes 2-way radio, landline, or cell phone w/service.

² Transportation includes motor vehicle or motorcycle.

³ Skilled attendant includes doctor, nurse, or midwife

⁴ ARV medications include: ARV prophylaxis for mother (sd-NVP, AZT/3TC (Combivir), ART for mother and infant)

⁵ ANC routine medications include: iron, folic acid, mebendazole, Fansidar (IPT)

⁶ Short-term family planning method includes: oral contraceptives, male/female condoms, and 3-month injectables

⁷ Long-term family planning method includes: intrauterine devices, implants

J) Conclusions

To accelerate saving the lives of mothers and newborns, the Saving Mothers, Giving Life (SMGL) initiative employs a systems approach focused at the health district level to ensure that every pregnant woman has access to clean and safe normal delivery services and, in the event of an obstetric complication, life-saving emergency care within 2 hours. The model serves to strengthen the existing health network (both public and private) within each district to address the “Three Delays”: delay in seeking appropriate services; delay in reaching services; and, delay in receiving timely, quality care at the facility (from Strengthening the Ecosystem for Safe Motherhood, 2017).

Results presented in this report point to some very positive facility-level improvements in the SMGL Learning districts. Baseline to Endline Improvements include:

- ❑ **EmONC status improved**, with overall increase in CEmONC status from 3.6% at Baseline to 4.6% at Endline. BEmONC capacity increase from 0.0% at Baseline to 3.6% at Endline. BEmONC w/o AVD capacity up from 2.7% to 7.3%
- ❑ **CEmONC status improved**, with overall increase C-section capacity increased from 3.6% to 4.6%
- ❑ **Infrastructure was enhanced**, with availability of water up from 90% to 97%, electricity up from 56% to 93%, 24/7 availability of services up from 68% to 96%, and communication access at facility level up from 45% to 100%
- ❑ **Improvement in patient care**, with increase with at least one skilled attendant on staff increasing from 90% to 99%
- ❑ **Maternal death audits** increased, from 43% to 75% indicates commitment by the MOH to review and respond to each maternal death.
- ❑ **Better antenatal care and improved facility delivery rates**, from Safe Motherhood Action Groups (SMAG’s) increase from 63.8% to 96.3%
- ❑ **Improved Routine practice of Active Management of 3rd stage of labor (AMTSL)** was noted with an overall with an increase in all facilities from 71.8% to 95.5%
- ❑ **Support for ANC activities**, with routine ANC medication stock always available up from 55.6% to 81.8% and HIV rapid test kits increased from 82.5% to 93.8%
- ❑ **Support for ANC activities**, with routine ANC medication stock always available up from 55.5% to 81.8% and HIV rapid test kits increased from 82.5% to 93.8%
- ❑ **Family planning increased**, with availability of at least one long-term family planning up from 20% to 71.3%

HFA end of Phase 1 trends to Endline, shown below, demonstrate that the impact of the SMGL ‘Big Push’ during Phase 1 was not yet institutionalized across districts and facility types:

- ❑ **EmONC status improved**, but WHO recommended number still not met in Mansa/Chembe and Nyimba
- ❑ **Certain signal functions declined**, varying by district and facility type: parenteral antibiotics in Nyimba, parenteral anti-convulsants in Nyimba, Lundazi and Kalomo/Zimba, assisted vaginal deliveries (AVD) in Nyimba, and manual removal of placenta in Nyimba, Mansa/Chembe and Lundazi
- ❑ **Transportation access improved in all districts**, with a decline from end of Phase 1 to Endline in Lundazi
- ❑ **Water availability declined**, in Kalomo/ Zimba
- ❑ **Facility open 24/7 declined**, in Mansa/Chembe

Indicators declining from Baseline to Endline:

- **Referral book availability declined**, especially for hospitals and health posts leading to poorer tracking of women referred from one facility to another
- **ARVs given to HIV+ mothers in maternity ward in past 3 months declined significantly**, again may be a direct result of the PEPFAR pivot
- **Oxytocin stocks declined**, across all facility types
- **Gentamicin stocks declined**, a great deal particularly in health centers and health posts and over half of all facilities reported a stock out in the past 12 months.
- **ARV medication stocks declined**, in health centers. The overall proportion of all facilities with a stock out in the past 12 months was over 80% which is concerning.
- **ARV's given to newborns in maternity ward last 3 months** overall was lower than optimal (66.4%) with noted declines between Baseline and Endline in Mansa/Chembe and Lundazi