A Review of the Maternal and Newborn Health Content of National Health Management Information Systems in 13 Countries in Sub-Saharan Africa and South Asia

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The Maternal and Child Health Integrated Program (MCHIP) is the USAID Bureau for Global Health's flagship maternal, neonatal and child health (MNCH) program. MCHIP supports programming in maternal, newborn and child health, immunization, family planning, malaria, nutrition, and HIV/AIDS, and strongly encourages opportunities for integration. Cross-cutting technical areas include water, sanitation, hygiene, urban health and health systems strengthening.

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1. Introduction

As the global community moves to a post-Millennium Development Goal health and development agenda, strengthening routine monitoring of essential interventions for maternal and newborn health (MNH) is highly relevant and important. Over the past few years, following the release of the World Health Organization's (WHO's) Global Health Strategy Report, an increasing number of global initiatives have emerged that emphasize improved measurement of maternal, newborn, and child health (MNCH) service delivery, including Every Woman, Every Child, the Commission on Information and Accountability for Women's and Children's Health, Every Newborn Action Plan, and, most recently, USAID's Ending Preventable Child and Maternal Deaths initiative,

Much emphasis has been placed on nationally representative household surveys conducted in low- and middle-income settings, such as the Demographic and Health Surveys (DHS), Multiple Indicator Cluster Surveys (MICS), and other national-level assessments. These surveys, however, are conducted only every two to five years and do not provide data frequently enough to support MNH programming decisions at the health facility and district levels. At the lower levels of national health systems, routine monitoring is critical to providing actionable information to health workers and managers that will help them understand the content and quality of MNH care and achieve desired health outcomes.

To understand the current status of national health management information system (HMIS) capacity to capture indicators of the content and quality of antenatal care (ANC) and labor and delivery (L&D) services in priority USAID countries where the Maternal and Child Health Integrated Program (MCHIP) works, and to gauge the scale of work yet to be done to improve the utility of health management information systems, MCHIP conducted a desk review of HMIS data collection forms and reporting formats in 13 countries. Results and recommendations emerging from that review are summarized in this report.

2. Background

IMPORTANCE OF NATIONAL HEALTH MANAGEMENT INFORMATION SYSTEMS

National health management information systems are essential for decision-making, improving the quality of care, and routinely tracking progress toward national and subnational objectives, including patient management objectives, for which data cannot be collected otherwise.[1] Health system managers have no substitute for routine information in terms of monitoring progress toward service delivery objectives and managing associated support services (e.g., logistics, human resources, finance) for local target populations.[2] HMIS are essential for decision-making and improving quality of care. HMIS registers and client records are the data collection tools to guide clinical decision-making by health workers and clinicians. These are critical management tools for both preventive and curative services. Service-generated data derived from facilities and patient-provider interactions covering aspects such as care offered, quality of care and treatments administered, and outcomes, are an essential source of health-related information. In most cases, HMIS registers stand in for a medical record but generally do not hold enough information to guide clinical decisions. Monthly health facility aggregate/summary forms provided the basis for review and planning for health service delivery at the health facility and district levels.

HMIS registers and client records are the tools that guide clinical decision-making by health workers and clinicians and at the same time enable systems to collect data, report, and plan for improving the quality and coverage of health services

Obtaining reliable, valid, and timely service data, especially data related to the delivery of priority lifesaving interventions, is challenging. The quality of HMIS data in low-income settings is often poor: data are often missing, report formats are outdated, and reporting is late. Often these problems are a result of too many registers, a lack of time for managing the registers, a lack of training in completing registers and reporting formats, a lack of motivation, a lack of perceived utility of data, and so on. Further, it is not widely known across countries what data are being recorded at the facility level, what data are reported up through the health system, and whether or how those data are being used at the facility level.

MCHIP'S ROLE IN SUPPORTING DELIVERY AND MEASUREMENT OF HIGH-IMPACT MNCH INTERVENTIONS

Through supporting the delivery of high-impact MNCH interventions, USAID's Maternal and Child Health Integrated Program (MCHIP) has contributed to the reduction of maternal, newborn, and child mortality in more than 40 countries, contributing to progress toward Millennium Development Goals 4 and 5. In its global and country-level programming, MCHIP has led efforts to improve the quality of maternal and newborn health (MNH) care. This includes supporting ministries of health in the delivery of key lifesaving and preventative interventions to every pregnant woman and newborn who needs them and in the measurement and documentation of these interventions. MCHIP has promoted indicators that measure quality of service delivery and priority interventions at the country and global level. One such indicator, uterotonic use immediately after delivery, has been accepted as a global indicator for monitoring

[1] Lippeveld T, Sauerborn R, Bodart C. 2000. *Design and Implementation of Health Information Systems*. Geneva: World Health Organization.
[2] Aqil A, Lippeveld T, Hozumi D. 2009. PRISM framework: A paradigm shift for designing, strengthening and evaluating routine health information systems. *Health Policy and Planning* 24(3): 217–228. doi:10.1093/heapol/czp010.

interventions for prevention of postpartum hemorrhage (PPH) and is recommended by WHO in its global guidelines for prevention and treatment of PPH.[3]

MCHIP has also conducted special studies in different settings to test the validity and reliability of new indicators that can be included in household surveys and in other data collection methods.[4] In addition, MCHIP has introduced interventions related to measuring data quality and improving the use of data for decision-making and planning.[5] Health management information systems generally capture utilization of care at the facility level, documenting the number of ANC visits and the number of women who deliver with a skilled birth attendant, for example. While these indicators were intended to serve as a proxy for measuring the key services delivered, studies have shown that indicators of "contact" with the health system do not correlate with receipt of key services.[6,7] As a result, there has been a call to the global community for indicators that measure content and quality, not just contact.[8]

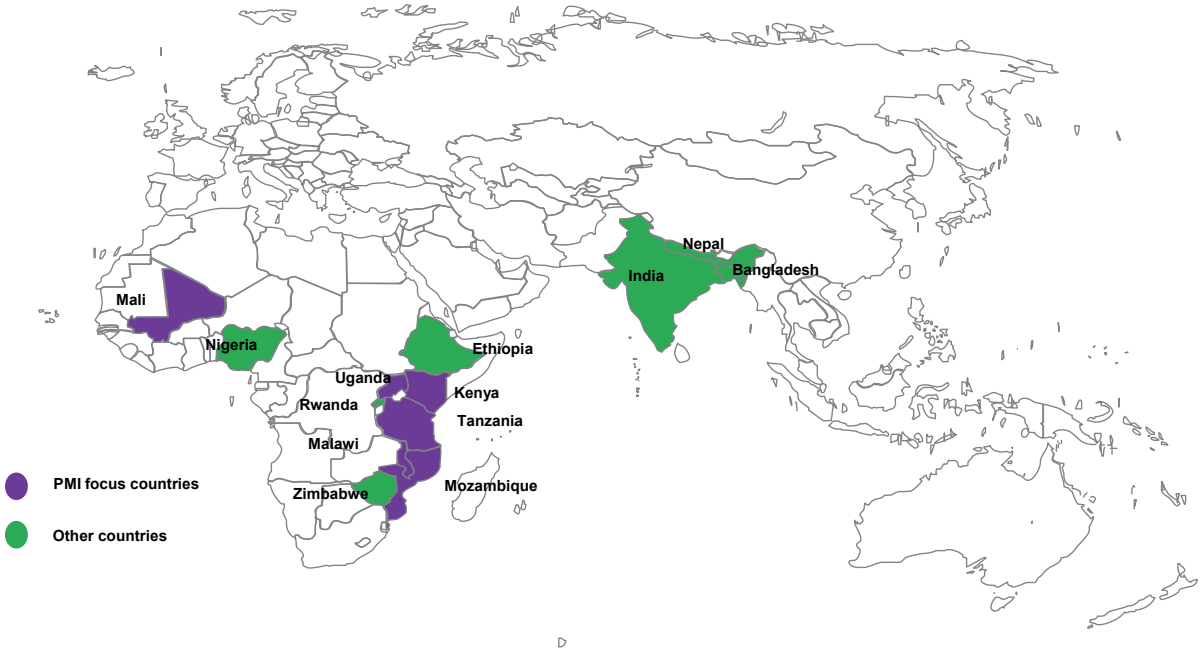
[3] World Health Organization. 2012. *WHO Recommendations for the Prevention and Treatment of Postpartum Haemorrhage*. Geneva: WHO.
[4] Stanton CK et al. 2013. Measuring coverage in MNCH: Testing the validity of women's self-report of key maternal and newborn health interventions during the peripartum period in Mozambique. *PLoS ONE* 8(5): e60694. doi:10.1371/journal.pone.0060694.
[5] Strachan M et al. 2013. *Strengthening Health Management Information Systems for Maternal and Child Health: Documenting MCHIP's Contributions*. Baltimore: Jhpiego. Accessed October 17, 2014, at: http://www.mchip.net/content/strengthening-health-management-information-systems-maternal-and-child-health-documenting-mc
[6] Hounton S et al. 2008. Effects of a skilled care initiative on pregnancy-related mortality in rural Burkina Faso. *Trop Med Int Health* 13 Suppl 1:53–60. doi: 10.1111/j.1365-3156.2008.02087.x.
[7] Hodgins S, D'Agostino A. 2014. The quality–coverage gap in antenatal care: toward better measurement of effective coverage. *Glob Health Sci Pract* 2(2):173–181. http://dx.doi.org/10.9745/GHSP-D-13-00176.
[8] Hodgins S. 2013. Achieving better maternal and newborn outcomes: Coherent strategy and pragmatic, tailored implementation. *Glob Health Sci Pract* 1(2):146–153. http://dx.doi.org/10.9745/GHSP-D-13-00030.

3. Scope and Methodology

SCOPE OF THE REVIEW

Measurement of facility-based MNH services should capture delivery of key interventions needed during pregnancy, labor, and delivery, including the immediate postpartum period. This is important for monitoring quality of care and refining programs for optimal performance. It is not widely known what data on key MNH services are being recorded at the facility level and reported to districts and higher levels of the health system across countries. With the aim of identifying key data elements for monitoring the quality and content of care across countries, MCHIP conducted a review of national health management information systems in 13 countries. The countries include six President's Malaria Initiative (PMI) focus countries—Kenya, Malawi, Mali, Mozambique, Tanzania, and Uganda—and seven other MCHIP countries—Bangladesh, Ethiopia, India, Nepal, Nigeria, Rwanda, and Zimbabwe.

Figure 1. Countries Included in the HMIS Review



This review focuses on the data elements collected at the health facility level, recorded on client cards and registers, and reported to higher levels of the health system, including district, regional, and national levels. The review was done by the MCHIP Monitoring & Evaluation (M&E) team between December 2012 and December 2013. Specific objectives included:

- Document MNH (ANC/L&D) data elements that can be used to construct indicators of content and quality of care and that are currently included in the HMIS
- Document current data elements of malaria in pregnancy (MIP) indicators that captured during ANC in six PMI focus countries
- Identify information gaps and advocate at the national level for incorporation of new data elements and indicators on content and quality of MNH/MIP services
- Provide recommendations to WHO on MIP-related indicators and data collection formats

METHODOLOGY

Data Collection and Synthesis

MCHIP conducted a desk review of national HMIS data collection and reporting formats. First, MCHIP collected and reviewed HMIS tools used for monitoring and reporting on ANC and L&D care. In each country, MCHIP field offices collected blank HMIS forms. The final set of HMIS tools reviewed included the client's health card (ANC and/or comprehensive maternal and child health client card), ANC registers, partographs, L&D registers, and facility monthly summary reports. Table 1 summarizes the tools received from each country.

Table 1. List of Registers and Tools from Countries Reviewed

	ANTENATAL CARE (ANC) DATA RECORDING TOOL		LABOR AND DELIVERY TOOLS		SUMMARY FORMS
	ANC register	Mother's ANC card (any card used to record service provision and given to the mother)	Partograph/ maternity chart	Delivery register	Facility monthly summary reporting forms for each level of facility
Ethiopia	Health center/clinic/hospital ANC register	Integrated antenatal, labor, delivery, newborn and postnatal care card	Intrapartum care and follow-up: monitoring progress of labor using partograph	Health center/clinic/hospital delivery register	Health center/clinic/hospital quarterly service delivery report form
Kenya	ANC register	Mother and child health booklet (revised 2013)	Revised partograph (2012)	Maternity register and postnatal register	National integrated form for reproductive health, HIV/AIDS, malaria, tuberculosis, and child nutrition (Tool M2-MOH 711A)
Malawi	ANC register	Antenatal consultation record	Partograph	Maternity register	Health management information, monthly report (HMIS 15)
Mali	Registre de consultation prenatale	Fiche de suivi grossesse	Partogramme niveau CS/CSCOM	Registre de accouchement	Rapport mensuel de l'établissement
Mozambique	Livro de registos da consulta pre-natal (MOD SIS B01)		Ficha clinica do parto	Livro de registos da maternidade (MOD SIS-B03)	Relatório mensal facilidade
Nigeria	Daily antenatal register	Maternal and newborn health record book	NA	Maternal and newborn health record book	LGA health information system quarterly data summary form (Form 002)
Rwanda	Registre des consultations prénatales (CPN)	Ifishi y'ubuzima bw'umubyeyi	Partogramme	Registre de maternite/maternity, labor and delivery register	Health center or dispensary monthly HMIS report
Tanzania	Regista ya mama wajawazito	RCH 4 jamuhuri ya muungano wa Tanzania (RCH card)	NA	Register ya wazazi	Health facility summary (Form 001)

	ANTENATAL CARE (ANC) DATA RECORDING TOOL		LABOR AND DELIVERY TOOLS		SUMMARY FORMS
	ANC register	Mother's ANC card (any card used to record service provision and given to the mother)	Partograph/ maternity chart	Delivery register	Facility monthly summary reporting forms for each level of facility
Uganda	Integrated antenatal care register	Mother's health passport	Labor progress chart (partogram)	Maternity register	Health unit outpatient monthly report (HMIS FORM 105)
Zimbabwe	ANC and delivery register	NA	NA	ANC and delivery register	T5 monthly reporting form
Bangladesh	ANC register	ANC and PNC cards	NA	Delivery and PNC registers	Maternal, child health & family planning services monthly progress report of Upazila, GoB, and NGO Monthly report of maternity department
India	Reproductive and child health register	Mother and child protection card	Simplified partograph	Reproductive and child health register	Monthly format for PHC and equivalent institutions
Nepal	Maternal health service register (HMIS-10)	Maternal health service card	Partograph	Maternal health service register (HMIS-10)	PHCC/HP/SHP integrated reporting form (Safe Motherhood Program)

Second, we identified interventions that reflect current evidence for quality ANC and L&D care. Documents reviewed to identify a short list of interventions included:

1. Partnership for Maternal, Newborn & Child Health. A Global Review of the Key Interventions Related to Reproductive, Maternal, Newborn and Child Health (RMNCH). Geneva, Switzerland: PMNCH, 2011.
2. World Health Organization. Malaria in Pregnancy: Guidelines for Measuring Key Monitoring and Evaluation Indicators. Geneva: WHO, 2007.
3. WHO, UNFPA, UNICEF, AMDD. Monitoring Emergency Obstetric Care: A Handbook. Geneva: WHO, 2009.
4. WHO, UNFPA, UNICEF, World Bank. Integrated management of pregnancy and childbirth. Pregnancy, childbirth, postpartum and newborn care: a guide for essential practice. Geneva: WHO, 2006.

Table 2 provides a summary of key interventions that were included in the review.

Third, a standardized, coded information abstraction tool was created for summarizing each country's findings. This tool included the data elements related to the key interventions and a coding system for classifying the findings. Next, the HMIS forms were assigned to be reviewed by M&E advisors. M&E advisors reviewed the forms independently and noted the results according to the established coding system. When a finding did not fit an existing code, a new code was created and used from that point forward. When there were questions, consultation meetings were held to discuss and make decisions on how to code the findings. Subsequently, an initial analysis to summarize findings across countries was conducted and the findings were summarized in tables. Preliminary tables were created and circulated. Quality assurance on the

findings was conducted by updating an Excel spreadsheet with a list of registers and forms received and then coding and review by teams of two MCHIP M&E team members. After additional review and confirmation of findings, the summary tables were finalized.

Table 2. Key Interventions Delivered during Pregnancy, Birth, and Postpartum (Newborn) Period Assessed for Inclusion in National HMIS

PREGNANCY	
1.	Appropriate antenatal care package: • Iron and folic acid to prevent maternal anemia • Tetanus immunization • Counseling on family planning, birth, and emergency preparedness • Prevention and management of HIV, including antiretrovirals (in high prevalence settings) • Prevention and management of malaria with insecticide-treated nets and antimalarials (in endemic and/or epidemic settings)
2.	Calcium supplementation for prevention of pre-eclampsia (in low calcium intake settings)
3.	Pre-eclampsia screening and management: • Screening for hypertensive disorders (pre-eclampsia/eclampsia) of pregnancy • Treatment of pre-eclampsia/eclampsia with magnesium sulfate for eclampsia
4.	Antenatal corticosteroids for preterm birth
BIRTH	
5.	Induction of labor for prolonged pregnancy
6.	Prophylactic uterotonics to prevent postpartum hemorrhage
7.	Active management of third stage of labor to prevent postpartum hemorrhage
8.	Management of postpartum hemorrhage (e.g., uterotonics, uterine massage)
9.	Cesarean section for absolute maternal indication
POSTNATAL (MOTHER)	
10.	Family planning
11.	Detection and management of postpartum sepsis
12.	Screening and initiation or continuation of antiretroviral therapy for HIV
POSTNATAL (NEWBORN)	
13.	Immediate thermal care (drying, wrapping, or skin-to-skin care)
14.	Initiation of exclusive breastfeeding (within first hour)
15.	Clean cord care (cutting cord with sterile blade and nothing on the stump)
16.	Neonatal resuscitation for newborns not breathing at birth (professional health worker)
17.	Kangaroo mother care for preterm babies and babies less than 2000 g

Source: Partnership for Maternal, Newborn & Child Health. 2011. *A Global Review of the Key Interventions Related to Reproductive, Maternal, Newborn and Child Health (RMNCH)*. Geneva: PMNCH.

Limitations of this ReviewIt is important to note that this review did not include analysis of country-level policies and strategies, nor strengths and weaknesses in data quality, reporting, or use of available data. Some of the interventions may not be applicable to a particular country's situation and should not be included in the country's HMIS. For example, Ethiopian health policy does not recommend providing calcium supplementation to pregnant women and the population does not have low calcium intake; therefore, this intervention need not be part of the country HMIS. Moreover, this review is not intended to recommend a set of standardized indicators that countries should collect in their national HMIS, but rather to take stock of what is currently being collected. The indicators that are appropriate for any one county will vary based on epidemiology, i.e., high or low prevalence of HIV, malaria and calcium deficiency. However, global consensus on a minimum standardized set of MNH indicators for HMIS would be very useful. There are a number of ongoing global efforts to try to identify and agree on a

standardized pragmatic set of MNH indicators that should be collected through HMIS. We hope this review will inform those efforts.

4. Results

The results are presented in three sections: antenatal care; labor and delivery; and maternal deaths, stillbirths, newborn deaths and referrals.

How to Read the Tables

The tables show whether the data element is collected in client records, facility registers, and/or facility monthly reports. The tables are color-coded as follows:

- **Green** cells indicate that the data element is recorded in the facility register at the health facility AND reported to higher levels in the facility monthly report.
- **Yellow** cells indicate that the data element is recorded in the facility register but is not reported in the facility monthly report.
- **Red** cells indicate that the data element is not captured in the facility register and not reported in the facility monthly report.
- **Blue** indicates that the data element is not recorded in the registers we reviewed but is reported in the facility monthly report. This suggests that the data might be captured in another recordkeeping format in the facility that was outside the scope of this review (e.g., the outpatient register or a special HIV register).
- **CC** within the cells indicates that the data element is captured in the client card or maternal health card.

ANTENATAL CARE

Table 3. Recording and Reporting on ANC Visits

COUNTRIES	ANC 1ST VISIT	ANC 4+ VISITS
Ethiopia	CC	CC
Kenya	CC	CC
Malawi	CC	CC
Mali		
Mozambique	CC	
Nigeria		
Rwanda	CC	CC
Tanzania	CC	CC
Uganda	CC	CC
Zimbabwe		
Bangladesh		
India	CC	CC
Nepal	CC	CC
Element included		
Client cards	9	8
Health facility register	11	12
Monthly summary report	11	8

ANC Visits

Data recording on ANC visits – at least one or four or more-- is important for measuring enrollment in ANC services and tracking the dropout rate. Table 3 shows that countries do not consistently record and report these data on monthly summary forms, ANC registers, or client cards (CCs). Eleven of the 13 countries report on women who attend one ANC visit and eight report on women who received four ANC visits in their monthly summary forms. There are five

countries that report four visits but not one visit, which would make it difficult to determine a dropout rate. Eleven countries record one ANC visit and twelve record four ANC visits in their ANC registers. However, variations were observed in the recording of ANC visits in client cards. The first ANC visit was recorded on client cards in nine countries in client cards, but only eight countries recorded four visits.

Provision of Key ANC Services

Table 4 shows recording and reporting practices for testing for anemia, iron and folic acid (IFA) distribution, provision of tetanus toxoid (TT2), deworming, and counseling on family planning and birth preparedness. IFA distribution and tetanus immunization are recorded on ANC registers in most of the countries. However, only five countries capture distribution of IFA 90+ (i.e., 90 or more tablets provided to the ANC client during her visit) in ANC registers and only four report it on their monthly summary forms. Recording of TT2 on ANC registers was universal except for two countries where it was not found to be recorded in ANC register, it may be captured in OPD or immunization register. Nine countries report TT2 provision on monthly summary forms and client cards. Provision of deworming tablets is reported on monthly summary forms in four countries and recorded on ANC registers and client cards in six countries.

Table 4. Recording and Reporting on Key ANC Services

	IFA		TT2	DEWORMING	COUNSELING	
Countries	Iron/folate tabs	Iron/folate tabs (90+)*			Family planning	Birth and emergency preparedness
Ethiopia			CC	CC		
Kenya	CC	CC	CC	CC		
Malawi						
Mali						
Mozambique	CC	CC	CC	CC		
Nigeria	CC		CC			CC
Rwanda						
Tanzania	CC	CC	CC	CC		
Uganda	CC		CC	CC		
Zimbabwe						
Bangladesh			CC			
India	CC	CC	CC			CC
Nepal	CC		CC	CC		
Element included						
Client cards	7	4	9	6	0	2
Health facility register	10	5	11	6	1	2
Monthly summary report	8	4	9	4	0	0

Data on counseling on family planning and emergency preparedness is generally lacking in all countries' recording and reporting forms, except in Nigeria, where counseling on the lactational amenorrhea method, other postpartum family planning, and healthy timing and spacing of birth are recorded in registers. Information on birth and emergency preparedness generally is not recorded, but in Nigeria information on counseling on place of birth, cadre of birth attendant, arrangements for transportation, and arrangements for financial assistance is recorded on ANC registers and client cards. Preference for birth companion, potential blood donor, and person to take care of child when

the mother goes for delivery are also recorded on client cards in Nigeria. In India, expected place of delivery is recorded in both the ANC register and the client card as part of birth preparedness.

HIV Testing, Results, and Treatment

Prevention and management of HIV, including antiretroviral therapy, is an essential intervention that can be delivered at the community, primary, and referral levels. Generalized high HIV prevalence countries (prevalence more than 2-3%) including Kenya, Malawi, Mozambique, Tanzania, Uganda, and Zimbabwe, should include HIV testing for all pregnant women. Others with generalized HIV prevalence rate >1%, including Rwanda, Ethiopia, and Nigeria should also have integrated testing for HIV during pregnancy. Table 5 shows that data on HIV testing and results for pregnant woman are reported in monthly summary forms in nine countries. Three countries do not record these data in the ANC register. In India, HIV data are recorded in the integrated ANC register but are not reported in monthly summary forms. Data recording on HIV testing and results for partners of pregnant woman is weak, with six countries recording it in the ANC register, three in monthly summary forms, and three in client cards. Four countries report information on women given antiretrovirals in the monthly summary forms, four countries record it in the ANC register, and two record it in client cards. Four countries do not record or report these data at all. Malawi is the only country that reports data on baby prophylaxis in monthly summary forms. Ethiopia and Uganda record baby prophylaxis in facility registers but do not report it in monthly summary forms.

Table 5. Prevention and Management of HIV, Including Provision of Antiretrovirals

	HIV TEST DONE WITH RESULT	HIV TEST RESULT: PARTNER	PMTCT: MOTHER (ANTIRETROVIRAL PROPHYLAXIS)
Ethiopia	CC – no result	CC	CC
Kenya	CC	CC	
Malawi			
Mali*			
Mozambique			
Nigeria			
Rwanda			
Tanzania		CC	CC
Uganda	CC – no result		
Zimbabwe			
Bangladesh*			
India*			
Nepal*			
Element included			
Client cards	3	3	2
Health facility register	10	6	9
Monthly summary report	9	4	4

* Generalized HIV prevalence of < 1%; hence, HIV testing not integrated in ANC package.

Malaria and Tuberculosis Prevention, Screening, and Treatment

WHO recommends the use of insecticide-treated bed nets (ITNs) to prevent malaria; testing, using either microscopy or rapid diagnostic tests (RDTs); and prompt treatment of positive cases. WHO also recommends intermittent preventive treatment in pregnancy with sulfadoxine-pyrimethamine (IPTp-SP) in malaria-endemic African countries. All endemic countries (including

the 13 countries in this review) should at least implement ITNs, diagnosis, and the treatment of malaria during pregnancy. Endemic countries in Africa, except Rwanda and Ethiopia (where IPTp is not national policy) and Bangladesh, India, and Nepal also should implement IPTp.

Table 6. Prevention and Management of Malaria with ITNs and Antimalarials

	MALARIA TEST CONDUCTED	MALARIA TEST RESULT LISTED	MALARIA TREATMENT/ REFERRAL	IPTP2+	ITN DISTRIBUTION OR VOUCHER	SLEPT UNDER BED NET	PMTCT–COTRIMOXAZOLE
Ethiopia			CC	NA	NA		CC
Kenya					CC		
Malawi			CC	CC			
Mali							
Mozambique			CC	CC		CC	CC
Nigeria				CC	CC		
Rwanda				NA			
Tanzania							CC
Uganda						CC	
Zimbabwe							
Bangladesh				NA	NA		
India				NA	NA		
Nepal				NA	NA		
Element included							
Client cards	0	0	3	3	2	2	3
Health facility register	2	4	1	8	8	0	6
Monthly summary report	2	3	1	7	6	0	6

Note: NA = not included in national policy

Information on the results of malaria testing during pregnancy is reported in monthly summary forms in three countries (Mozambique, Nigeria, and Tanzania), and Uganda captures this information in ANC registers (Table 6). Data on treatment or referral for treatment are recorded and reported only in one country (Mozambique), while three countries recorded this information in client cards. WHO now recommends IPTp to be given at each ANC visit, starting early in the second trimester, with doses given at least one month apart. This is a departure from the former recommendation of at least two doses, and emphasizes frequency of dosing, with a total of four or more in a pregnancy. Many countries are in the process of adapting their policies to reflect WHO's recommendation of IPTp at every ANC visit. At the time of this review, two doses of IPTp (IPTp2+) were recommended for prevention of malaria during pregnancy in malaria-endemic areas, which include Kenya, Mali, Mozambique, Tanzania, and Uganda, but not Bangladesh, India, or Nepal. Distribution of IPTp2+ is reported in monthly summary forms in seven countries, recorded in ANC registers in eight countries, and recorded in client cards in three countries. Similarly, six countries report ITN distribution in monthly summary forms, eight in ANC registers, and only two countries in client cards. Data on whether a woman slept under bed net are recorded in client cards in two countries (Mozambique and Uganda). It is not recorded or

reported in registers or monthly summary forms in any country. Nigeria records counseling on malaria during pregnancy in ANC registers.

IPTp and Linkages with HIV: Malaria prevention among HIV-positive pregnant women is an area with shifting terrain. The review of HMIS tools initially considered linkages between HIV and malaria to see if reporting via the HMIS was in line with the guidance that HIV-positive pregnant woman should receive three doses of IPTp unless they are taking cotrimoxazole. HIV-positive women taking cotrimoxazole should not be given IPTp with SP. Data on provision of cotrimoxazole are reported in ANC registers in six countries, recorded in client cards in three countries, and recorded on monthly summary forms in six countries. In Ethiopia, it is recorded in client cards but not in ANC registers or monthly summary forms.

Table 7. Tuberculosis Screening and Treatment

	COUNSELING ON SMOKING CESSATION	TB SCREENING	TB STATUS RESULTS	TB TREATMENT
Ethiopia				
Kenya		CC		
Malawi				
Mali				
Mozambique				
Nigeria				
Rwanda				
Tanzania				
Uganda				
Zimbabwe				
Bangladesh				
India		CC		
Nepal				
Element included				
Client cards	0	2	0	0
Health facility register	0	0	1	0
Monthly summary	0	3	0	0

Data on tuberculosis (TB) screening are recorded in ANC registers in three countries (Rwanda, Uganda, and Zimbabwe) (Table 7). In India this information is recorded in client cards but not in registers or monthly summary forms. Data on treatment of TB are not recorded in client cards, ANC registers, or reporting forms in any country.

A Success Story from Mozambique

While MCHIP was undertaking this review, the MCHIP Mozambique team was participating in the review and update of the national HMIS. With the increased emphasis on indicators that capture the quality and content of care, and the recognition of the paucity of data on case management of malaria among pregnant women, the MCHIP team supported the Ministry of Health in Mozambique in incorporating indicators on diagnosis and treatment of malaria. No data on case management were included in the old HMIS, but the new HMIS includes case management as well as data on IPTp4 (Table 8).

Table 8. Improved M&E of Malaria in Pregnant Women, Mozambique

MALARIA IN PREGNANCY INTERVENTION	PREVIOUS ANC REGISTER	NEW ANC REGISTER	NEW HEALTH FACILITY MONTHLY REPORT
IPTp1	x	x	
IPTp2	x	x	X
IPTp3		x	X
IPTp4		x	
ITN received	x	x	X
Presents with malaria symptoms		x	
Tested for malaria using RDT or microscopy (coded result as RDT or microscopy)		x	
Positive test result (RDT or microscopy)		x	X
Women with positive malaria test treated		x	X
Women with positive RDT or microscopy referred		x	

Screening and Treatment for Syphilis and Pre-Eclampsia/Eclampsia

Table 9 shows the status of data recording and reporting on calcium supplementation, screening and treatment for pre-eclampsia/eclampsia (PE/E), and syphilis screening and treatment.

Table 9. Calcium Supplementation, Screening and Treatment of Pre-Eclampsia/Eclampsia and Syphilis

COUNTRIES	CALCIUM SUPPLEMENTATION*	BLOOD PRESSURE	URINE TEST	PE/E SCREENING	PE/E TREATMENT	SYPHILIS SCREENING CONDUCTED	RESULTS OF SYPHILIS SCREENING	SYPHILIS TREATMENT
Ethiopia	NA			CC			CC	CC
Kenya		CC	CC			CC		
Malawi				CC			CC	CC
Mali								
Mozambique				CC			CC	CC
Nigeria								
Rwanda								
Tanzania							CC	
Uganda							CC	CC
Zimbabwe								
Bangladesh							CC	
India			CC	CC			CC	CC
Nepal							CC	
Element included								
Client cards	0	1	2	4	0	1	8	5
Health facility register	1	7	2	6	0	8	10	5
Monthly summary forms	1	5	0	3	1	5	9	3

Calcium supplementation is recorded in ANC registers in one country (Mali) but reported in monthly summary forms in Bangladesh only. Blood pressure measurement is recorded in ANC registers in seven countries and reported in only five country monthly summary forms. Three of the four countries that report blood pressure measurement in monthly summary forms also report data on PE/E. Urine tests for confirmation of PE/E are recorded in registers in only two countries (India and Zimbabwe) and are not reported in any monthly summary forms. With the exception of India, no countries record or report data on PE/E treatment. In India, PE/E treatment is reported in monthly summary form but not recorded in ANC registers.

Data on the results of syphilis screening are recorded in ANC registers in 10 countries, reported in monthly summary forms in nine countries, and recorded in client cards in eight countries. Treatment of syphilis is recorded in client cards in five countries, recorded in ANC registers in five countries, and reported in monthly summary forms in three countries.

Other ANC Interventions, Referrals, and Death during Pregnancy

Fetal heart sounds are a good indicator of fetal well-being. Data on fetal heart tones are recorded in ANC registers in five of the 13 countries; only in India are these data recorded in client cards. None of the countries summarize or report data on monitoring fetal health tones/sounds in monthly summary forms. Antibiotics for preterm, pre-labor rupture of membranes (pPROM) reduce complications due to preterm delivery and postnatal infection. None of the countries in this review record or report any data on provision of antibiotics for pPROM in their registers or monthly summary forms. Data on antenatal corticosteroids for premature labor are recorded in ANC registers in only one country (India). Nigeria records past preterm deliveries before 37 weeks in client cards.

Table 10. Other Data Elements

	FETAL HEART TONES/SOUNDS	ANTIBIOTICS FOR PRETERM, PRE-LABOR RUPTURE OF MEMBRANES	ANTENATAL CORTICOSTEROIDS FOR PRETERM DELIVERIES	PAST COMPLICATIONS	BLOOD SUGAR
Ethiopia					
Kenya	CC				
Malawi					
Mali					
Mozambique					
Nigeria				CC	
Rwanda					
Tanzania					
Uganda					
Zimbabwe					
Bangladesh					
India				CC	
Nepal					
Element included					
Client cards	1	0	0	2	0
Health facility register	5	0	1	1	2
Monthly summary report	0	0	0	0	0

Data recording and reporting on other check-ups during ANC, including complications during previous pregnancies and monitoring blood sugar levels, are recorded in ANC registers or reported in monthly summary forms in all countries except India, Nigeria, and Zimbabwe, where some elements are captured only in ANC registers.

LABOR AND DELIVERY

Duration of Labor and Use of Uterotonics

Data on duration of labor is recorded in ANC registers in two countries (Kenya and Zimbabwe). None of the countries reviewed report this information in monthly summary forms.

Administration of uterotonics immediately after birth is a priority intervention for prevention of postpartum hemorrhage. Only two countries (Mozambique and Tanzania) report data on uterotonics in monthly facility summary forms. Mozambique, however, captures the number of women provided active management of the third stage of labor (AMTSL), which includes administration of a uterotonic plus the other two components of controlled cord tracktion and uterine massage. In Malawi uterotonic use is reported, but it is not clear whether the data reported reflect administration of uterotonic immediately after delivery or may also include use of a uterotonic for labor augmentation and/or treatment of PPH. Rwanda captures these data in the register at the health facility level and not in monthly summary forms.

Table 11. Prophylactic Uterotonic to Prevent and Manage PPH

COUNTRIES	UTEROTONIC (inidication unspecified)	PROPHYLACTIC UTEROTONIC USE IMMEDIATELY AFTER BIRTH	AMTSL	MANAGEMENT OF PPH
Ethiopia				
Kenya	CC			
Malawi				
Mali				
Mozambique	NA	NA		
Nigeria	NA	NA	CC	
Rwanda				
Tanzania	NA			
Uganda				
Zimbabwe				
Bangladesh				
India				
Nepal				
Element included				
Client cards	1	0	1	0
Health facility register	1	1	2	1
Monthly summary report	2	1	1	0

NA = not applicable if recorded as uterotonic use immediately after birth or AMTSL

Method of Delivery

Recording and reporting on method of delivery was found to be highly variable among the countries reviewed (Table 12). Normal and cesarean deliveries are consistently recorded in all

L&D registers. Nine countries report number of normal deliveries and 11 report cesarean deliveries in monthly summary forms.

Deliveries conducted by vacuum extraction are recorded in L&D registers in 11 countries and reported in monthly summary forms in seven countries. Deliveries by forceps, breech, and other modes are recorded in about half of the countries reviewed; however, reporting in monthly summary forms is very low. Fetal heart rate is not consistently recorded and reported in all countries, but in two countries (Bangladesh and Mozambique), it is recorded in the L&D register.

Data on completion of a partograph during delivery are recorded in the register and reported in monthly summary forms in Nigeria only.

Table 12. Method of Delivery

COUNTRIES	MODE OF DELIVERY					
	Normal	Cesarean section	Vacuum	Forceps	Breech	Other
Ethiopia						
Kenya						
Malawi						
Mali						
Mozambique						
Nigeria	CC	CC				
Rwanda						
Tanzania						
Uganda						
Zimbabwe						
Bangladesh						
India						
Nepal						
Element included						
Client cards	1	1	0	0	0	0
Health facility register	13	13	11	8	6	6
Monthly summary report	9	11	7	4	4	3

Place and Circumstances of Delivery

Data on place of delivery and skilled attendance during delivery are recorded in L&D registers in seven and eight countries, respectively. Seven countries do not report skilled attendance in monthly summary forms (Table 13).

Manual removal of the placenta, blood transfusion, and use of anticonvulsants are recorded in monthly summary forms in three, four and two countries respectively. Only a few countries record this information in registers at the health facility.

Table 13. Place of Delivery, Skilled Attendance, Manual Removal of Placenta, Blood Transfusion, and Anticonvulsants

COUNTRIES	PLACE OF DELIVERY	SKILLED ATTENDANT	MANUAL REMOVAL OF PLACENTA	BLOOD TRANSFUSION	ANTICONVULSANT GIVEN
Ethiopia					
Kenya	CC	CC			
Malawi					
Mali					
Mozambique					
Nigeria					
Rwanda					
Tanzania					
Uganda					
Zimbabwe					
Bangladesh					
India					
Nepal					
Element included					
Client cards	1	1	0	0	0
Health facility register	7	8	3	4	2
Monthly summary report	4	6	3	4	3

HIV Testing and Services during Delivery

Data recording and reporting on HIV test results for women and partners and HIV counseling and testing were found to be very weak (Table 14). HIV test results are recorded in L&D registers in eight countries. In four countries (Malawi, Nigeria, Tanzania, and Uganda) this information is reported in monthly summary forms.

The number of women on treatment for HIV is recorded in registers in seven countries and reported in monthly summary forms in five countries. Data on infants on prophylaxis are recorded in registers in seven countries and reported in monthly summary forms in six countries. Data on counseling on infant feeding options are recorded in L&D registers in Zimbabwe and on client cards in Kenya. None of the countries report this information in monthly summary forms.

If HIV test are not conducted as part of integrated services, women should be referred to an HIV clinic. Data on women referred for HIV counseling and testing are reported in registers in six countries and in monthly summary forms in two countries (Kenya and Mozambique).

Table 14. HIV Testing and Services during Delivery

COUNTRIES	HIV TEST RESULT	HIV TESTING DONE FOR PARTNER	PARTNER'S HIV TEST RESULT	HIV: MOTHER PROPHYLAXIS (E.G., AZT; AZT+ SDNVP; AZT+3TC+EFV)	HIV: BABY PROPHYLAXIS	COUNSELING ON INFANT FEEDING OPTION	REFERRAL FOR HIV COUNSELING AND TESTING
Ethiopia							
Kenya						CC	
Malawi							
Mali							
Mozambique							
Nigeria							
Rwanda							
Tanzania							
Uganda							
Zimbabwe							
Bangladesh							
India							
Nepal							
Element included							
Client cards	0	0	0	0	0	1	0
Health facility register	8	2	1	7	7	1	6
Monthly summary report	4	2	0	5	6	0	2

Maternal and Obstetric Complications

Data recording and reporting on type of maternal and obstetric complications were found to be very weak (Table 15). The team looked at recording and reporting of any complications and by type of complications. In table 15, the column 'any complications' shows the status of recording and reporting any maternal complications. Data on any complications is recorded in registers at health facility level in 10 countries. PPH was found to be the most common complications recorded (nine countries) and reporting (seven countries). For eg. in 10 countries a health worker, at a health facility level, can analyze if women had any complications. If a health worker would like to analyze number of women by type of complications, he/she will be able to get data on PPH in nine countries in health facility registers and in seven countries in monthly summary forms. PE/E followed by PPH, is recorded as a separate column or tick box in registers in six countries and reported in monthly summary forms in seven countries. In some cases the number of countries reporting on monthly summary forms is higher than countries recording in health facility register as there may be separate register kept at L&D for recording maternal complications but not integrated in one L&D register. Bangladesh and Nepal do not record or report on any types of complications. Registers and reporting forms reviewed for Bangladesh did not show recording or reporting of any maternal health complications.

Management of complications is recorded in L&D registers in seven countries and reported in monthly summary forms in three countries. Six countries do not record or report any data on management of complications.

Table 15. Maternal and Obstetric Complications

COUNTRIES	ANY COMPLICATION	ANTEPARTUM HEMORRHAGE	PPH	OBSTRUCTED/ PROLONGED LABOR	PE/E	RUPTURED UTERUS	SEPSIS	SEVERE ANEMIA	ECTOPIC PREGNANCY	OTHER	MANAGEMENT OF COMPLICATIONS
Ethiopia											
Kenya											
Malawi											
Mali											
Mozambique											
Nigeria	CC			CC						CC	
Rwanda											
Tanzania											
Uganda											
Zimbabwe											
Bangladesh											
India											
Nepal											
Element included											
Client cards	1	0	0	1	0	0	0	0	0	1	0
Health facility register	10	5	9	7	6	5	4	3	3	6	7
Monthly summary report	10	7	7	6	7	5	6	4	2	3	3

Immediate Newborn Care

Data recording and reporting on live births was found to be common. All of the countries except Nepal and Tanzania record information on live births in registers and report it in monthly summary forms. In Tanzania, this information is recorded only on health facility registers, and in Nepal it is not recorded anywhere (Table 16).

Nigeria is the only country that records the three essential newborn care components defined by USAID—baby dried immediately, cord cut with sterile blade, and baby put to breast within one hour—in the L&D register and in client cards. Immediate skin to skin care is another element of routine newborn care that was reviewed.

Table 16. Newborn Care

FORM	LIVE BIRTHS	IMMEDIATE DRYING	IMMEDIATE SKIN TO SKIN CARE	BREASTFEEDING WITHIN ONE HOUR
Ethiopia				
Kenya				
Malawi				
Mali				
Mozambique				
Nigeria		CC	CC	CC
Rwanda				
Tanzania				
Uganda				
Zimbabwe				
Bangladesh				
India				
Nepal				
Element included				
Client cards	0	1	1	1
Health facility register	12	1	2	5
Monthly summary report	11	0	2	6

Newborn Complications

Table 17. Newborn Complications and Management of Complications

FORM	ANY COMPLICATION	LOW BIRTH WEIGHT	SEPSIS	PRETERM	ASPHYXIA	TETANUS	OTHER	NEWBORN ASPHYXIA
Ethiopia								
Kenya								CC
Malawi								
Mali								
Mozambique								
Nigeria								
Rwanda								
Tanzania								
Uganda								
Zimbabwe								
Bangladesh								
India								
Nepal								
Element included								
Client cards		0	0	0	0	0	0	1
Health facility register		10	4	5	5	2	5	3
Monthly summary		8	2	5	3	2	3	2

Table 17 shows recording and reporting of newborn complications. Data on birth weight, which is important for identifying low birth weight babies, is recorded in registers in 10 countries. Eight countries report birth weight in monthly summary forms. Babies born preterm and newborns with asphyxia are recorded in registers in four countries. As shown in Table 17, reporting of newborn complications in monthly summary forms is very weak. Only two or three countries report the number of newborn complications to higher levels.

Data elements for management of complications were found to be very weak. Provision of kangaroo mother care (KMC) is recorded in registers and reported in monthly summary forms in two countries (Mozambique and Tanzania) and only on the client card in Nigeria. In Uganda it is captured only on the partograph ("baby kept warm") and not in registers. In Ethiopia it is captured as "baby-mother bonding" only on client cards; no information is available at the health facility level. Data on newborn resuscitation are recorded in registers in three countries and reported in monthly summary forms in Tanzania and Mali only. Mozambique is the only country that reports on fresh stillbirth in the register and monthly report through the data element "stillbirth with positive on heart beat on admission."

MATERNAL DEATHS, STILLBIRTHS, NEWBORN DEATHS, AND REFERRALS

Table 18. Maternal Deaths, Stillbirths, and Early Newborn Deaths

COUNTRIES	MATERNAL DEATHS	MATERNAL DEATHS BY CAUSE	STILLBIRTHS	STILLBIRTHS—FRESH	STILLBIRTHS—MACERATED	VERY EARLY NEWBORN DEATHS (WITHIN 24 HOURS OR BEFORE DISCHARGE)	EARLY NEWBORN DEATHS BY CAUSE
Ethiopia							
Kenya							
Malawi							
Mali							
Mozambique							
Nigeria			CC	*			
Rwanda							
Tanzania							
Uganda							
Zimbabwe							
Bangladesh							
India							
Nepal							
Element included							
Client cards	0	0	1	0	0	0	0
Health facility register	11	4	12	6	5	7	1
Monthly summary	12	4	13	7	5	9	1

* In both the register and the monthly summary form, there is a field for "stillbirth with positive heart tones on admission" (fresh stillbirth).

Variations were observed in tracking and reporting of data on maternal deaths, stillbirths, and early newborn deaths (Table 18). All of the countries record maternal deaths and stillbirths in the facility register. All countries report data on stillbirths in monthly summary forms and 12 report data on maternal deaths in monthly summary forms. Recording and reporting of data on causes of maternal deaths and fresh and macerated stillbirths were found to be weak. Four countries record information on causes of maternal deaths in registers and four report it in monthly summary forms.

Very early newborn deaths (within 24 hours of birth or before discharge) are recorded in registers in seven countries and reported in monthly summary forms in nine. Only in Kenya, information on the causes of very early newborn deaths is recorded in L&D register and in Rwanda reported in monthly summary forms.

Tracking referral cases helps to monitor whether appropriate care is being provided for maternal and newborn complications. Referrals also reflect the integration of health services. Table 19 shows data recording and reporting on referral for maternal, delivery, and newborn complications.

In 10 countries referrals for maternal, delivery, and newborn complications are recorded in the register. However, in their monthly summary forms, seven countries report only the number of women referred for complications, and four countries report the number of newborns referred.

Table 19. Referral for Maternal, Delivery, and Newborn Complications

COUNTRIES	REFERRAL FOR MATERNAL/DELIVERY COMPLICATION	REFERRAL FOR NEWBORN COMPLICATION
Ethiopia		
Kenya		
Malawi		
Mali		
Mozambique		
Nigeria		
Rwanda		
Tanzania		
Uganda		
Zimbabwe		
Bangladesh		
India		
Nepal		
Element included		
Client cards	0	0
Health facility register	10	8
Monthly summary report	7	4

5. Discussion and Recommendations

Strengthening health management information systems to improve monitoring and health services management is critical to improving quality of care and providing information to decision-makers in a timely fashion. These systems currently capture some content of care indicators, but there is wide variability across technical areas and across countries. **Variability was observed in data capturing in both ANC and L&D.** There are opportunities to improve monitoring of quality of care in both ANC and L&D in all of the countries reviewed. Services designed to prevent, detect, and manage top causes of maternal deaths, including PPH, PE/E, and sepsis, go grossly unregistered and unreported in current national health management information systems.[9] These complications, and elements of others, are monitored primarily through the partograph, a tool which has shown challenges when used for monitoring.[10,11,12,13]

Family planning counseling and provision are not well documented during ANC and L&D, but may be captured in postpartum registers, which were beyond the scope of this review. Similarly, data on malaria case management during pregnancy was not included in ANC registers in most of the PMI-supported countries, but was often captured in outpatient registers, which were not included in this review. Most of the country health management information systems do capture the major causes of maternal and newborn complications. However, **the treatment of complications is not updated/captured** in the systems and not standardized.

Immediate newborn care and complications are not routinely reported in all countries, and there is a need for guidance on monitoring fetal heart sounds on admission and on comparing them with birth outcomes and outcomes at discharge. These three elements, fetal heart sounds on admission, birth outcomes and outcomes at discharge, which are critical for assessing the quality of facility-based care, make up a key indicator identified by WHO EMOC M&E Guidance, the intrapartum and very early neonatal death rate.[14] Although WHO's guidance is helpful, much works remains to be done (building on efforts that have already been undertaken) to support providers in collecting and reporting on these indicators).[15] Table 20 provides a summary of strengths and weaknesses observed by the team during the review of the HMIS tools and registers.

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Table 20. Strengths and Weaknesses Observed during Review of HMIS Tools and Registers

STRENGTHS	WEAKNESSES
1. General observations	
	• For some forms, no clear instructions or job aids on capturing and analysis of HMIS data • Some data in the monthly summary forms are not recorded in registers. There may be a separate register where these elements are being tracked. • Most of the HMIS registers and monthly reporting forms reviewed did not have a version number or date of finalization. It is difficult to track the most up-to-date version of formats being used. • Use of client cards at health facilities was not found to be universal, except in Rwanda, where a copy of the maternal health card is kept at the health facility, and in Ethiopia, which has an integrated maternal and child health card.
2. Interventions during ANC period	
• Data on most of the essential interventions prescribed during ANC are either reported in monthly summary forms or recorded in register. • Only about half of the countries record data on blood pressure monitoring during pregnancy. • Almost all countries capture data on distribution of iron/folic acid during pregnancy. • Most malaria-endemic countries capture data on IPTp2 and ITN distribution or distribution of voucher. • Data on HIV testing for pregnant women is recorded and reported in most countries. • Data on syphilis testing and test results are being recorded and reporting in most countries.	• Data reporting on blood pressure monitoring during pregnancy are not consistently reported across all countries. • Data on interventions such as provision of 90+IFA and TT are not reported in monthly summary forms across all countries. • Data capturing on testing for malaria and TB during pregnancy is very weak. • Data capturing on treatment for malaria, syphilis, and TB during pregnancy is very weak.
3. Interventions during labor and delivery for the mother	
• Almost all countries capture data on skilled attendance during delivery. • Almost all countries capture data on cesarean sections. • Most countries do record data on maternal and newborn complications during labor and delivery in health facility registers and report them in monthly summary forms. • The most commonly tracked complication is PPH, followed by PE/E, antepartum hemorrhage, ruptured uterus, and sepsis.	• Variations were observed in recording and reporting data on types of complications during labor and delivery. • Almost half of the countries record data on management of complications, but very few report this information in monthly summary forms. • There is a lack of recording and reporting on quality and content of delivery services. Data on key interventions during labor and delivery, such as use of a prophylaxis uterotonic for prevention of PPH and PE/E and its treatment with magnesium sulfate, are not consistently recorded and reported.
4. Interventions during labor and delivery for newborns	
• Most country health management information systems capture data on live births, breastfeeding within one hour, and low birth weight.	• Critical lifesaving interventions, such as newborn resuscitation, are not being measured across countries. • There are limited indicators for reporting on immediate newborn care in labor and delivery.
5. Recording and reporting of deaths and causes of deaths	
• Maternal deaths are being captured in registers and reported in monthly summary forms across most of the countries. • Stillbirths are being captured in registers and reported in monthly summary forms across most of the countries.	• Recording and reporting of data on causes of maternal deaths is not consistent across countries. • Stillbirths disaggregated by fresh and macerated are not commonly registered and reported.

Improvement sin recording and reporting of quality and content in health management systems should not substitute for monitoring the quality of technical interventions provided. Providers require mentoring and support to acquire and maintain their competencies. In addition, monitoring should not rely on one method alone, and data from various sources, including population-based surveys (DHS, MICS), facility surveys (SPA), observational assessments, focus groups and client exit interviews, should be used whenever possible to try to get a fuller picture of the quality of services.

HMIS tools should be useful for **guiding clinical and management decisions** and collecting data for improvements in quality and service coverage. However, this review has revealed that the focus of HMIS tools is only on data collection and support for delivery of services. For example, if HMIS tools were designed in such a way that health workers can record the number of IFA tablets provided to pregnant woman during ANC, this would help health workers in ensure that they provide more that 90 tablets. If the register only tracks distribution of any IFA tablets, it does not serve as a reminder to health workers. Similarly, the register could and should prompt health workers to ensure that every pregnant woman is screened for hypertension and syphilis, and provided other priority interventions.

Data collection and reporting tools for health management information systems are owned by ministries of health and designed at the country level and therefore should reflect national priorities. Global guidance on the design and use of the tools for reporting to higher levels does not exist, except for the PEPFAR indicators and guidance on MIP, which but needs to be updated. Although there is global guidance on programs and interventions, which includes a list of indicators, it is heavily influenced by data collection through household surveys. Therefore, we recommend the **development of global standards for the selection of priority indicators,** which could be used in the design, updating, or revision of national health management and information systems. However, we also need to consider the burden on the health workers who would collect these data, so indicators should be based on a prioritized list of interventions. At the same time, some indicators, such as availability of ITNs and/or counseling, are better collected via surveys. Table 21 provides a summary of data elements found in health facility registers and monthly reporting forms. This table can serve as a set of **recommendations** to countries to include these data elements in their systems for routine monitoring of essential interventions and to guide their planning and improvement processes.

Table 21. Summary of Recording and Reporting on MNH Indicators

	INTERVENTION	DATA ELEMENTS	NUMBER OF COUNTRIES RECORDING IN REGISTER AT HEALTH FACILITY	NUMBER OF COUNTRIES REPORTING IN MONTHLY SUMMARY FORM
Pregnancy				
1.	ANC first visit	• Number of pregnant women received at least one ANC visit	11	11
2.	ANC 4 visits	• Number of pregnant women received four ANC visit	12	8
3.	Iron and folic acid to prevent maternal anemia	• Number of pregnant women given 90+ IFA tablets	5	4
4.	Tetanus immunization	• Number of pregnant women given TT2 immunization	11	9
5.	Counseling on family planning and birth and emergency preparedness	• Number of pregnant women counseled on family planning • Number of pregnant women counseled on emergency preparedness	1 2	0 0
6.	Prevention and management of HIV, including with antiretrovirals	• Number of pregnant women tested for HIV • Number of HIV-positive pregnant women referred or enrolled for antiretrovirals	10 9	9 4
7.	Prevention and management of malaria with insecticide-treated nets (ITNs) and antimalarials	• Number of pregnant women given IPTp2 • Number of pregnant women given ITN or voucher for ITN • Number of pregnant women tested for malaria • Number of pregnant women with malaria referred or provided treatment	8 8 2 1	7 6 2 1
8.	Prevention, detection, and management of pre-eclampsia, through blood pressure and urine screening, calcium supplementation during pregnancy, and magnesium sulfate for severe PE/E	• Number of pregnant women with blood pressure recorded • Number of pregnant women with high blood pressure/PE/E • Number of pregnant women screened for proteinuria • Number of pregnant women provided calcium supplement • Number of pregnant women with severe PE/E provided magnesium sulfate	7 6 2 1 0	5 3 0 1 1
9.	Administration of corticosteroids to prevent respiratory distress syndrome in newborns	• Number of pregnant women with preterm labor • Number of pregnant women with preterm labor provided Antenatal Corticosteroids (ACS)	0 1	0 0
10.	Syphilis testing	• Number of pregnant women tested for syphilis	8	5
11.	Deworming	• Number of pregnant women provided deworming	8	5
Birth				
12.	Induction of labor for prolonged pregnancy	• Number of deliveries with labor more than 12 hours	7	6
13.	Administration of prophylactic uterotonics to prevent postpartum hemorrhage	• Number of deliveries given a prophylactic uterotonic to prevent postpartum hemorrhage	3	2

	INTERVENTION	DATA ELEMENTS	NUMBER OF COUNTRIES RECORDING IN REGISTER AT HEALTH FACILITY	NUMBER OF COUNTRIES REPORTING IN MONTHLY SUMMARY FORM
14.	Management of postpartum hemorrhage (e.g., uterotonics, uterine massage)	• Number of complications of postpartum hemorrhage • Number of complications of postpartum hemorrhage managed	9 1	7 0
15.	Cesarean and assisted delivery	• Number of cesarean deliveries • Number of assisted deliveries	13	11
Essential Newborn Care				
16.	Immediate thermal care	• Number of newborns provided immediate thermal care	0	0
17.	Initiation of exclusive breastfeeding (within first hour)	• Number of newborns initiated on breastfeeding (within first hour)	5	6
18.	Hygienic cord and skin care	• Number of newborns with chlorhexidine applied on cord in countries with this policy	0	0
19.	Neonatal resuscitation with bag and mask (professional health worker)	• Number of asphyxia cases • Number of newborn resuscitated	5 3	3 2
20.	Kangaroo mother care for preterm babies and babies less than 2000 g	• Number of newborn with weight less than 2000 g • Number of newborn with low birth weight whose mothers were counseled on kangaroo mother care	10 2	8 2
21.	Maternal deaths	• Number of maternal deaths	11	12
22.	Stillbirths	• Number of still births (fresh) • Number of still births (macerated)	6 5	7 5

Health management information systems often do not support integrated service delivery. All information on testing and service delivery for each pregnant woman and her newborn should be available in one register and one card. This will ensure consistency and integrated service delivery. Recording data on different registers and forms creates the risk that a woman will receive duplicate treatment, either when she visits another health facility (public or private) or when she visits a different provider within the same health facility.

HMIS tools also need **regular revisions**. When a change is made to an HMIS, it may take at least a year to update registers, revise databases, and train health staff on recording, reporting, and using the data. With this kind of timeline, changes in the system cannot be made every six months. Thus, review and revisions should be planned at regular intervals and plans should be made to include new interventions and measurements of priority interventions.

A major lesson learned during this review is that the current focus on measuring the attendance for one and four or more ANC visits and skilled birth attendance does not provide much information on the quality, content, or delivery of priority services. Although these are excellent programmatic indicators that show coverage of services, they do not measure high-impact services for maternal health. Perhaps monitoring of the essential lifesaving interventions listed in Table 21 could be incorporated into the use of the recently developed RMNCH scorecards.

Systematic support to health systems is needed for (1) inclusion of essential MNH interventions in the health service delivery package, (2) scale-up of these interventions at the national level, (3) revision of the HMIS for routine monitoring, and (4) reporting and use of quality data for planning to ensure that required interventions are delivered at the population level —in other words, for the delivery of quality essential MNH services at scale.

There does not appear to be a **common reference for countries** when embarking on HMIS revisions to improve measurement of the quality of MNH care. It is critical that global comprehensive HMIS tools and guidance—with standardized indicators, data elements, and data collection, and recommendations for reporting and use—are developed and disseminated to assist countries with optimizing their HMIS and using it to monitor quality of care. When making changes to an HMIS, countries need to consider time for review, piloting of tools, costs of printing, training of staff, related changes in electronic and/or mobile tools, and ongoing supportive supervision for data quality improvement and data use. In addition, countries with more a comprehensive HMIS, such as Mozambique and Tanzania, may be well positioned to provide technical assistance to other countries that are attempting to improve their HMIS. In all of the countries, a minimum set of indicators should be constructed and reported on routinely through the HMIS. Progress toward the indicators should be monitored and should include intentional learning about what works, what does not, and how to further enhance performance.

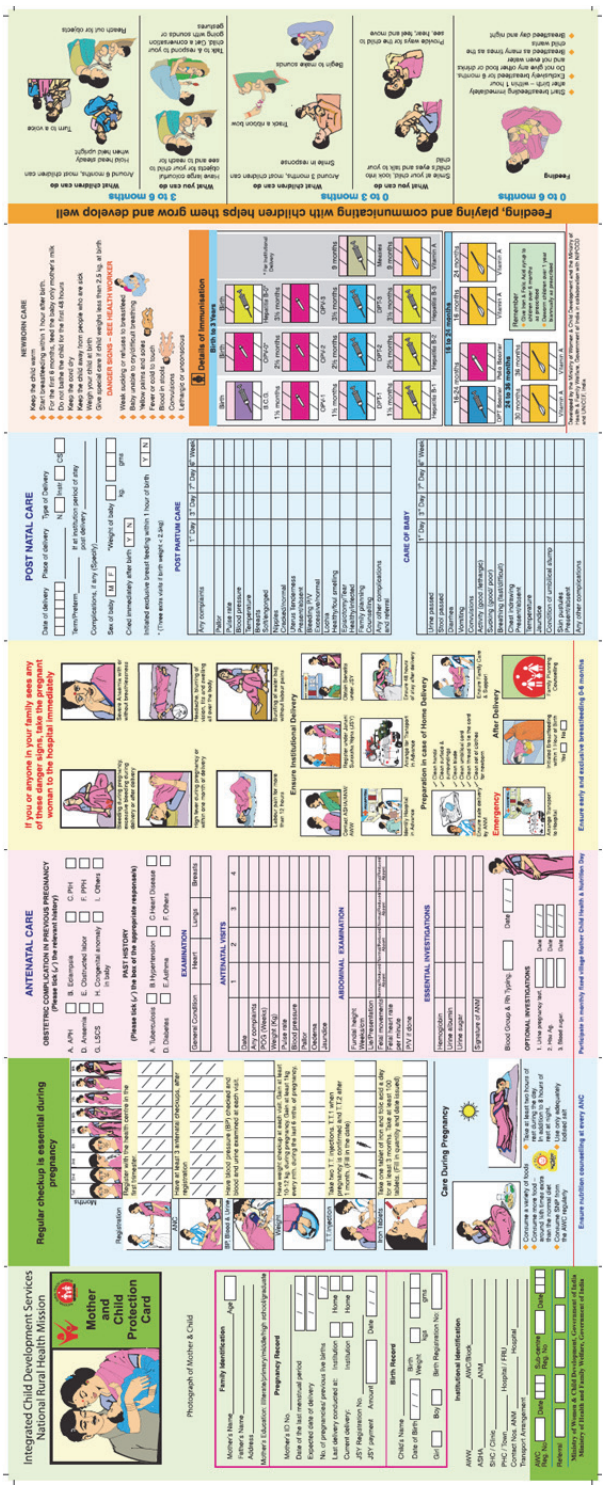
Across countries health information management systems are burdened with collection, analysis, and reporting of indicators and data elements with no direct linkage to planning or decision-making. These systems capture and report data on a daily and monthly basis with minimal or no guidance. Health systems need to make the most of their HMIS by collecting **data that are actionable and that capture the delivery of essential interventions** and reducing the burden of data collection.

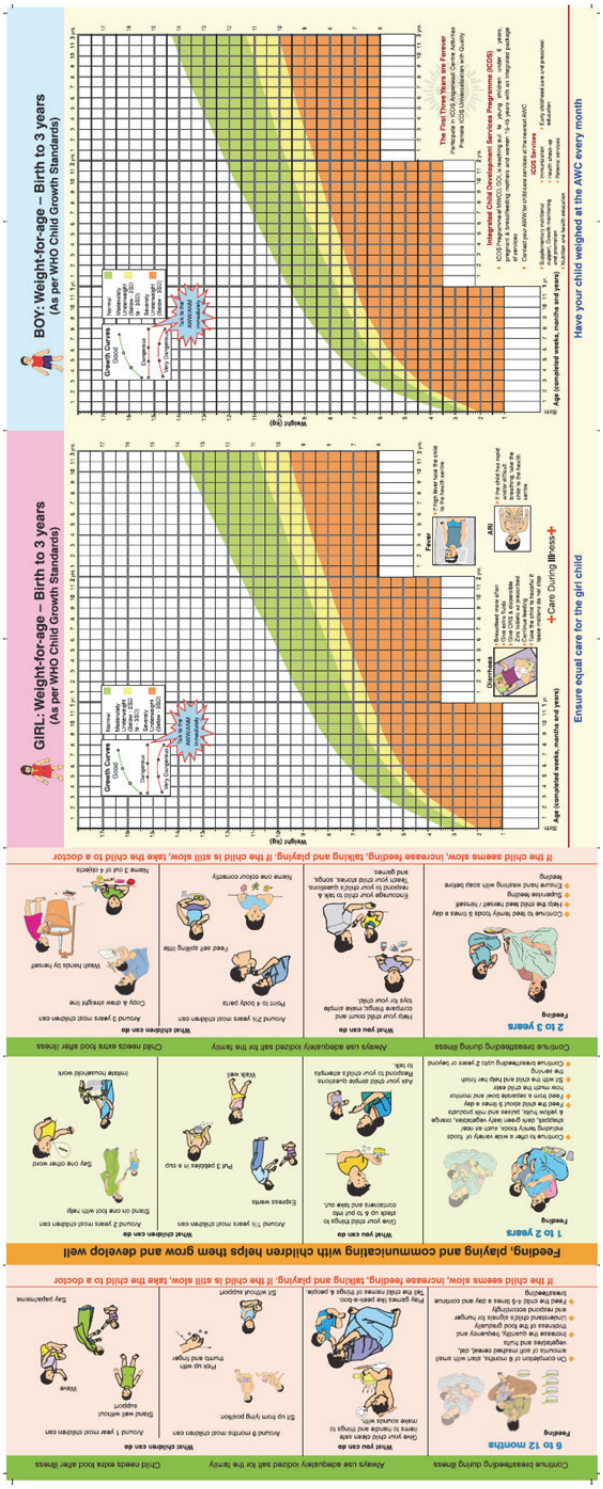
Appendix A. Integrated Maternal and Child Care Card, Ethiopia

Mother's Name:		DOB: / /	ID:			
General Condition		Pregnancy follow up				
Gravidity		Visits	1st	2nd	3rd	4th
Parity		Date of Visit	__/__/__	__/__/__	__/__/__	__/__/__
LMP (last menstrual period)	__/__/__	GA				
EDD (expected date of delivery)	__/__/__	BP				
Referred for STI testing (☐)	HIV test result R / NR / I	Weight				
		FHB (fetal heart beat)				
Referred for HIV testing (☐)		Anaemia/ Oedema				
Obstetric history		Sign/symptom of illness				
1. Previous stillbirth or neonatal loss? N/Y						
2. History of 3 or more consecutive spontaneous abortions? N/Y						
3. Birth weight of last baby < 2500g N/Y						
		Action taken				
4. Birth weight of last baby > 4000g N/Y						
5. Hospitalization for hypertension or pre-eclampsia/eclampsia? N/Y						
6. Previous C/S (caesarean surgery) N/Y						
Current pregnancy						
7. Age less than 16 years? N/Y		Folic acid				
8. Age more than 40 years? N/Y		Mebendazol				
9. Vaginal bleeding? N/Y		**Birth Preparedness**				
10. Diastolic blood pressure 90mm Hg or more at booking? N/Y		Plan for Delivery place				
		Plan for Birth attendant				
General medical history						
11. Diabetes mellitus? N/Y		Plan for check up one week after birth				
12. Renal (kidney) disease? N/Y		Saving of birth cost				
13. Cardiac (heart) disease? N/Y		**For Delivery:**				
14. Known substance abuse? N/Y		Plan for transportation				
15. Any other severe medical disease or condition like malaria, TB, HIV? N/Y		Contact person in case of emergency				
Remarks		**Intended plan done? (If not why?)**				

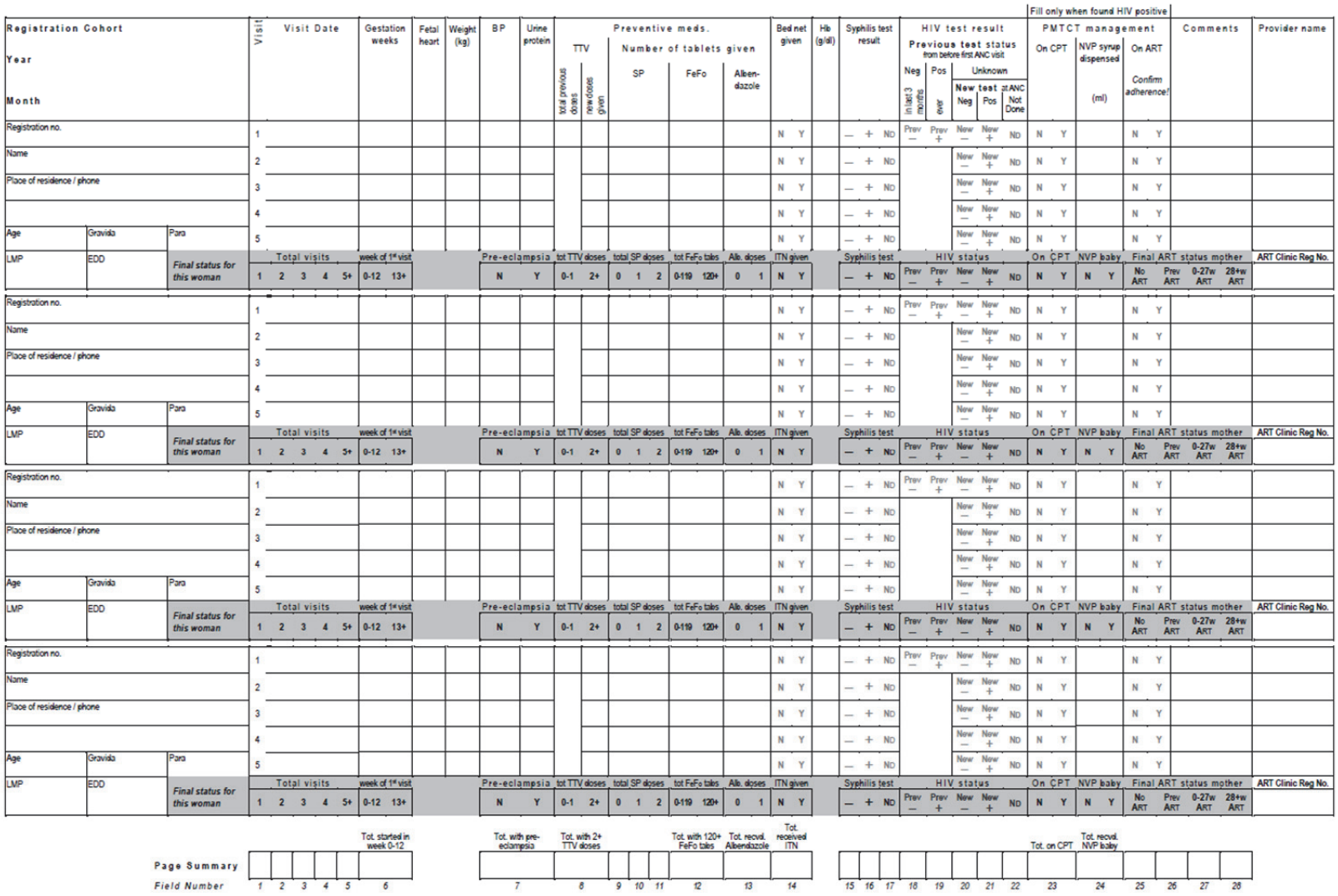
Mebendazol is a drug used to treat hookworm infestation

Appendix B. Client/Maternal Health Card, India





Appendix C. ANC Register with Instructions, Malawi



Registration Cohort
Year
Month

Visit | Visit Date | Gestation weeks | Fetal heart | Weight (kg) | BP | Urine protein | Preventive meds. — TTV (total previous doses, new doses given) | Number of tablets given (SP, FeFo, Albendazole) | Bed net given | Hb (g/dl) | Syphilis test result | HIV test result — Previous test status from before first ANC visit (Neg in last 3 months, Pos ever, Unknown) | New test (Neg, Pos, at ANC Not Done) | Fill only when found HIV positive — PMTCT management (On CPT, NVP syrup dispensed (ml), On ART, Confirm adherence!) | Comments | Provider name

Registration no. | Name | Place of residence / phone | Age | Gravida | Para | LMP | EDD | Final status for this woman

Total visits (1 2 3 4 5+) | week of 1st visit (0-12 13+) | Pre-eclampsia (N Y) | tot TTV doses (0-1 2+) | total SP doses (0 1 2) | tot FeFo tabs (0-119 120+) | Alb. doses (0 1) | ITN given (N Y) | Syphilis test (— + ND) | HIV status (Prev —, Prev +, New —, New +, ND) | On CPT (N Y) | NVP baby (N Y) | Final ART status mother (No ART, Prev ART, 0-27w ART, 28+w ART) | ART Clinic Reg No.

Page Summary — Field Number

Tot. started in week 0-12	Tot. with pre-eclampsia	Tot. with 2+ TTV doses	Tot. with 120+ FeFo tabs	Tot. recvd. Albendazole	Tot. received ITN	Tot. on CPT	Tot. recvd. NVP baby
6	7	8	12	13	14	23	24

General

- Write information into all empty boxes
- Mark the correct answer in all boxes with printed options by drawing a circle around the option
- Circle one option only in each box

The Cohort Registration System

- There are 4 sections for 4 women on each page
- On each page, write the Year and Month of Registration in the box in the top left-hand corner
- Start a new page for Registrations in a new month

First (booking) visit

- Start a new section for each woman
- Assign a new Registration number by adding 1 to the Registration number from the previous section
- Copy the Registration number into the woman's health passport to help you find her section in the ANC register when she comes for her follow-up visits.
- Write Name, Residence / Phone number, Age, Gravida, Para and the approximate dates for last menstruational period (LMP) and estimated date of delivery (EDD).
- In the row for the first visit (top row within each section), write today's date as Visit Date and fill the details in the other columns.

Follow-up visit:

- Find the woman's section in the ANC register using the Registration number in her health passport.
- In the next blank row (Visit 2, 3, 4 or 5), write today's date as Visit Date and fill the details in the other columns.

Reporting of ANC outcomes

- Very few women register for ANC within the first 2 months of pregnancy. Therefore, almost all women complete ANC and deliver within 7 months after registration.
- Step 1: Use the guide on the reporting form to find the Registration cohort that has now completed ANC. (7 months back)
- Step 2: For each woman in that Registration cohort, circle the Final status (ANC outcomes) in the grey row at the bottom of each section.
- Step 3: For each page, count the outcomes in the 4 grey rows (Final status) and write the tallies into the of the Page Summary boxes at the bottom of the page.
- Step 4: On a separate piece of paper, add the Page Summary Fields from all pages of this Registration cohort to obtain the totals for your monthly report.

Field No.	Field Name	Definition
1– 5	Total visits	Circle the total number of ANC visits that the woman has had
	Week of 1st visit (always circle one option)	
6	0-12	First visit was in the 1st trimester of pregnancy (0-12 weeks gestation)
	13+	First visit was in the 2nd or 3rd trimester (13 weeks gestation or later)
	Pre-eclampsia (always circle one option)	
	N	(otherwise)
7	Y	Diastolic blood pressure was 90 or above on 2 readings and urine protein was 2+ or 3+
	TTV doses (always circle one option)	
	0-1	None or only 1documented dose of tetanus toxoid vaccine was given
8	2+	Received 2 or more documented doses of TTV (including previous doses and the final dose given at ANC).
	SP doses (always circle one option) Do not give SP to women on CPT.	
9	0	Received no SP in the course of ANC
10	1	Received only one dose (3 tabs) of SP in the course of ANC
11	2	Received two doses (2 x 3 tabs) of SP (at 2 visits)
	FeFo tablets (always circle one option)	
	0-119	Received less than 120 tablets of iron-folate in the course of her ANC visits
12	120+	Received 120 (or more) tablets of iron-folate in the course of her ANC visits
	Albendazole dose given (always circle one option)	
13	N / Y	One stat dose of 400mg Albendazole was given in the course of ANC (2nd or 3rd trimester)
	Insecticide treated bed net given (always circle one option)	
14	N / Y	One ITN given in the course of ANC
	Syphilis test (always circle one option)	
15	–	The (last) syphilis test result was negative
16	+	The (last) syphilis test result was positive
17	ND	No syphilis test was done in the course of the ANC visits
	HIV test: (always circle one option – and one option only)	
18	Prev -	Documented negative HIV test result from within the last 3 months was available at the registration visit. No new HIV test was done at ANC.
19	Prev +	Documented positive HIV test result from any time in the past seen at registration visit (women already on ART are considered to have a documented positive test). No new HIV test was done at ANC.
20	New -	The (last) HIV test done at ANC was negative. Look at the latest test result if multiple HIV tests were done in the course of several ANC visits.
21	New +	The (last) HIV test done at ANC was positive. Look at the latest test result if multiple HIV tests were done in the course of several ANC visits.
22	ND	No documented HIV test result was available from before ANC and no new HIV test was done during ANC. HIV status remained unknown as of the last ANC visit.
	On CPT (circle only for HIV positive women, leave blank otherwise)	
	N	HIV positive but not on CPT as of the last ANC visit
23	Y	On cotrimoxazole preventive therapy as of the last ANC visit
	NVP baby (circle only for HIV positive women, leave blank otherwise) Always dispense the full 6 week supply (3 bottles of 25ml) as soon as known HIV positive, regardless of week of gestation	
	N	The woman was HIV positive but was never given nevirapine syrup for the infant in the course of her ANC visits
24	Y	Nevirapine syrup given to take home with instructions to start giving the baby a daily dose until age six weeks
	Final ART status mother: (circle only for HIV positive women, leave blank otherwise - circle one option only)	
25	No ART	Woman was HIV positive but not on ART as of her last ANC visit.
26	Prev ART	Woman was already on ART when starting ANC.
27	0-27w ART	Woman started ART in the 1st or 2nd trimester of this pregnancy.
28	28+w ART	Woman started ART in the 3rd trimester of this pregnancy.

Appendix D. Instructions on Integrated ANC Register, Uganda

INTEGRATED ANTENATAL REGISTER

Instructions

1. Write the name of the health unit, the date the register is opened, and the date the register is closed on the front cover.
2. Start a new serial number on the first clinic day of every month e.g.001 each visit for the mother should be given a serial number.
3. Start new client numbering on the first clinic day of the new financial year, (1st July)
4. On the first day of the first visit give a client number which is indicated on her ANC Card.
5. If two different people do consultations and registration, then the consultants will need to keep notes on all complications and referrals. The notes are then used to update the register at the end of each clinic day.
6. At the end of the month summarise the following
   - New clients
   - 1st visit
   - 4th visit
   - Pregnant women tested for HIV
   - Pregnant women tested for syphilis
   - Pregnant women HIV positive
   - Partners who are HIV positive
   - Pregnant women given ARVs for PMTCT
   - Pregnant women on HAART
   - Number of mothers referred in & out

DESCRIPTION OF COLUMNS & ROWS

The date is written on the 1st line at the beginning of each clinic day in the middle of the right and left page and nothing else is written on the line.
On every visit recording should indicate the number of the visit, dose of TT given, diagnosis, services given, complications encountered and referrals.

Fill in all relevant columns on the first and subsequent visits of the clients:

(1) SERIAL NO: Start with the number "1" on the first of every month.
(2) CLIENT NO: Start with the number "1" on the first of July each year. This number also goes on the Antenatal Card.
(3) NAME OF CLIENT: Write the full names of the client.
(4) VILLAGE AND PARISH: Village and parish of residence for client, if the village/parish is not known, put NK
(5) AGE: Age of client in completed years
(6) ANC VISIT: The number of this visit e.g. 1, 2, 3, or 4
(7) GRAVIDA: This is the number of this pregnancy in sequence
(8) PARA: This is the number of pregnancies carried beyond 7 months that the client has had before (exclude abortions and the current pregnancy).
(9) GESTATIONAL AGE: Use the Last Normal Menstrual Period and the Expected Date of Delivery to come up with the Gestation age. This is approximated using the first day on which last normal menstrual period began, adding 9 months and 7 days to arrive at the estimated date of delivery. Then calculate the weeks that the mother has gone through since the Last Normal Menstrual Period.
(10) PMTCT CODES: Enter the PMTCT code for the woman (W) and Partner (P) that corresponds to the PMTCT services received. The PMTCT codes

Code used	Description of PMTCT services received
C	-Counselled or given information but declined HIV testing
TR	-Tested results given, client tested HIV Negative
TRR	-Tested results given, client tested HIV Positive

*If the client has ever tested before, and the results are known enter the PMTCT code for the results and a tick (") e.g. if client was tested results given, client tested HIV Positive enter as follows; TRR"

(11) TB Status: All HIV Positive clients should be screened for TB, and enter the codes as follows;

Code used	Description of TB codes
NA	HIV Negative client with no signs and symptoms of TB
1	HIV positive client suspected to be having TB (Has any of the following; Coug 3 weeks or more, weight loss more than 10% of body weight and on and off fe for at least one month
2	Confirmed TB client not on treatment
3	Confirmed TB client and on treatment

(12) HAEMOGLOBIN AND SYPHILIS TEST RESULTS
Record the HB level e.g. (10.4g/dl)

Code used	Description of syphilis codes
Rx	-Client tested and reactive
NR	-Client tested results given, client non reactive
NT	-Client not tested for syphilis

(13) DIAGNOSIS: These are findings after clinical assessment e.g. normal pregnancy, malaria, blood pressure, HIV positive WHO stage III
(14) TETANUS DOSE: Tetanus dose given (this information must be taken from the client's Tet Card, not from her memory. Indicate the dose as 1st, 2nd, 3rd , 4th and 5th as appropriate
(15) IPT DOSE/ ITN: Refers to IPT1 or IPT2 given as first dose or second dose (respectivel intermittent presumptive treatment (IPT) of malaria by directly observed therapy (DOT) during the 2nd or 3rd trimester of the pregnancy. Enter 1 if first dose is given and 2 if second dose is given. Not on Septrine do not need Fansidar. In such cases indicate that the mother is on Septrine (write Septrine") For ITN enter Y, if mother is using an ITN or N if she is not using an INT
(16) MEBENDAZOLE DOSE: Enter a tick (") if a woman has received a DOSE of Mebendazol that visit and an x if she has not received the dose yet considered due. Put NA if she is not du for dose.
(17) IRON: Enter a tick (✓) if a woman has received a DOSE of iron on that visit. The recomme amount is 90 tablets during the entire pregnancy. For routine supplementation everyday a wo should receive 200mg (1tablet)
(18) FOLIC ACID: Enter a tick (✓) a woman has received a DOSE of folic acid and on that visit. recommended amount is 90 tablets during the entire pregnancy.
(19) ARV DRUGS: Write the ARV regimes that the mother has been given e.g. **NVP only, AZT an AZT and 3TC and HAART** as appropriate if a woman has started a DOSE of ARVs on that visit. **NA** for the HIV negative mothers.
(20) INFANT FEEDING OPTION: Infant method chosen should be entered using the code follows;-

1. For Exclusive breast feeding
2. Replacement feeding
3. Mixed feeding
4. Others

(21) OTHER TREATMENTS: Refers to treatment given other than TT, IPT, Iron, Foli mebendazole and ARVs.
(22) COMPLICATIONS/ RISK FACTORS: Write the complications and risk factors found remember to fill the same information on the Antenatal Card.
(23) REF IN / OUT: Using the criteria on the Antenatal Card, the client may be referred c the facility. If she is referred out, a REFERRAL NOTE is completed. Write the referral numberir column.

Appendix E. Maternity Register for Mother and Instructions for Completing the Register, Malawi

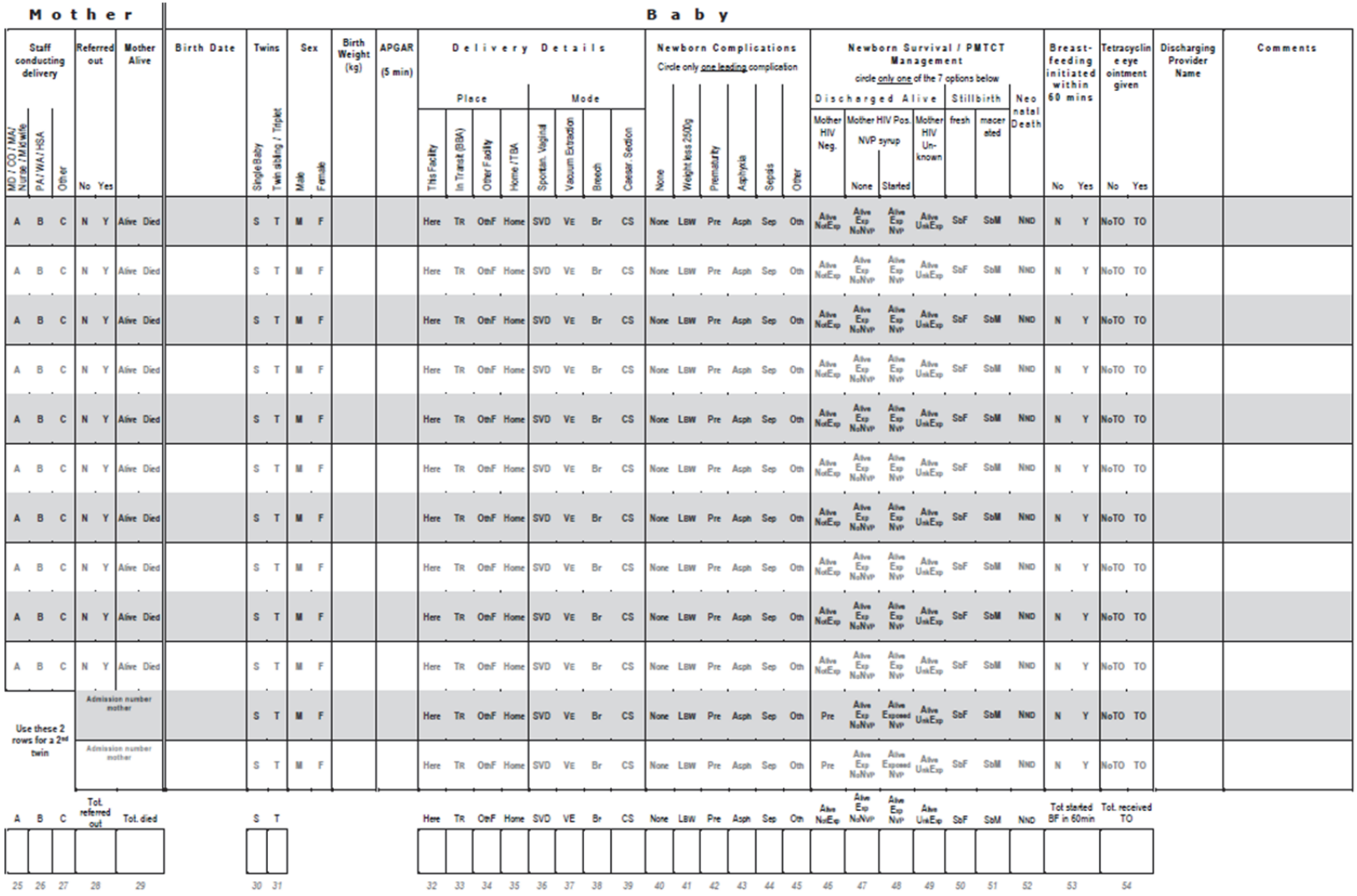
Mother

Year Month	Admission details						HIV Test Result Mother					ART Mother						Obstetric Complications								Emergency Obstetric Care Circle all provided					Vit A given	
			Age	Gravida	Para	Gestation week	Previous test status Before admission					None	Started ART (timing)				ART Clinic Registration No.	Circle only one leading complication								IM / IV Drugs			Blood Transfusion	Manual Removal Placenta		
							Neg	Pos	Unknown New test at maternity			Not on ART	Before pregnancy	1st or 2nd trimester	3rd trimester	During labour		None	Ante part haem.	Postpart haem.	Obstr / Prol Labor	(pre-) Eclampsia	Sepsis	Ruptured Uterus	Other	Oxytocin	Anticonvulsive	Antibiotics				
Admission Date	Admission Number	Name Place of Residence					In last 3 months	Ever	Neg	Pos	Not Done																				N	Y
							Prev —	Prev +	New —	New +	ND	No ART	Prev ART	0-27w ART	28+w ART	Lab ART		Non	APH	PPH	OPL	Ecl	Sep	Rup	Oth	OX	AC	AB	TR	MRP	N	Y
							Prev —	Prev +	New —	New +	ND	No ART	Prev ART	0-27w ART	28+w ART	Lab ART		Non	APH	PPH	OPL	Ecl	Sep	Rup	Oth	OX	AC	AB	TR	MRP	N	Y
							Prev —	Prev +	New —	New +	ND	No ART	Prev ART	0-27w ART	28+w ART	Lab ART		Non	APH	PPH	OPL	Ecl	Sep	Rup	Oth	OX	AC	AB	TR	MRP	N	Y
							Prev —	Prev +	New —	New +	ND	No ART	Prev ART	0-27w ART	28+w ART	Lab ART		Non	APH	PPH	OPL	Ecl	Sep	Rup	Oth	OX	AC	AB	TR	MRP	N	Y
							Prev —	Prev +	New —	New +	ND	No ART	Prev ART	0-27w ART	28+w ART	Lab ART		Non	APH	PPH	OPL	Ecl	Sep	Rup	Oth	OX	AC	AB	TR	MRP	N	Y
							Prev —	Prev +	New —	New +	ND	No ART	Prev ART	0-27w ART	28+w ART	Lab ART		Non	APH	PPH	OPL	Ecl	Sep	Rup	Oth	OX	AC	AB	TR	MRP	N	Y
							Prev —	Prev +	New —	New +	ND	No ART	Prev ART	0-27w ART	28+w ART	Lab ART		Non	APH	PPH	OPL	Ecl	Sep	Rup	Oth	OX	AC	AB	TR	MRP	N	Y
							Prev —	Prev +	New —	New +	ND	No ART	Prev ART	0-27w ART	28+w ART	Lab ART		Non	APH	PPH	OPL	Ecl	Sep	Rup	Oth	OX	AC	AB	TR	MRP	N	Y
							Prev —	Prev +	New —	New +	ND	No ART	Prev ART	0-27w ART	28+w ART	Lab ART		Non	APH	PPH	OPL	Ecl	Sep	Rup	Oth	OX	AC	AB	TR	MRP	N	Y
							Prev —	Prev +	New —	New +	ND	No ART	Prev ART	0-27w ART	28+w ART	Lab ART		Non	APH	PPH	OPL	Ecl	Sep	Rup	Oth	OX	AC	AB	TR	MRP	N	Y

Page

	Prev —	Prev +	New —	New +	ND	No ART	Prev ART	0-27w ART	28+w ART	Lab ART	Non	APH	PPH	OPL	Ecl	Sep	Rup	Oth	OX	AC	AB	TR	MRP	Total received Vit A
Page Summary																								
Field Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24

Appendix F. Maternity Register for Baby, Malawi



Appendix G. Monthly Summary Form, With Date of Last Revision, Kenya

Tool M2

HEALTH FACILITY FORM

MOH 711A

REPUBLIC OF KENYA - MINISTRY OF HEALTH

NATIONAL INTEGRATED FORM FOR REPRODUCTIVE HEALTH, HIV/AIDS, MALARIA, TB and CHILD NUTRITION

DISTRICT: _____ **NAME OF FACILITY:** _____

MONTH: _____ **YEAR:** _____

A: FAMILY PLANNING			NEW CLIENTS	RE-VISITS	TOTAL
1.	PILLS	Microlut			
		Microgynon			
2.	INJECTIONS	INJECTIONS			
3.	I.U.C.D.	Insertion			
4.	IMPLANTS	Insertion			
5.	STERILIZATION	B.T.L.			
		Vasectomy			
6.	CONDOMS	No. of Clients receiving			
7.	ALL OTHERS: (specify)				
8.	TOTAL NO. OF CLIENTS				

9.	REMOVALS:	IUCD		IMPLANTS	

B: MCH - ANC / PMCT			New	Re-visit	TOTAL
1.	No. of ANC Clients				
2.	No. of Clients with Hb < 7 g/dl				
3.	No. of Clients given IPT (1st dose)				
4.	No. of Clients given IPT (2nd dose)				
5.	No. of Clients completed 4th Antenatal Visit				
6.	No. of ITNs distributed to ANC clients				
7.	No. of ANC clients	Counselled			
		Tested for HIV			
		HIV+			
8.	No. of clients	Tested for Syphilis			
		Found +ve			
9.	No. of clients issued with preventive ARVs				
10.	No. of infants tested for HIV	At 6 wks			
		After 3 Months			
11.	HIV+ referred for follow up	Mothers			
		Partners			
12.	No. of infants issued with preventive ARVs				
13.	No. of mothers counselled on infant feeding options				
14.	No. of partners	Counselled			
		Tested			
		HIV+			

C: MATERNITY- PMCT			TOTAL
1.	No of Women counselled		
2.	Women tested for HIV		
3.	Women found HIV+		
4.	No. of Women issued with preventive ARVs		
5.	No. of infant Preventive ARVs administered		
6.	Total Deliveries from HIV+ women		
7.	No initiated cotrimoxaxole	Women	
		Infants	

D: STI		Type of visit	Females	Males	Total
1.	Urethral Discharge	Initial visit			
		Re-att			
		Referrals			
2.	Cases of Genital ulcer disease (GUD)	Initial visit			
		Re-att			
		Referrals			
3.	Cases of Ophthalmia Neonatorum	Initial visit			
		Re-att			
		Referrals			
4.	Cases of Syphilis Serology				
5.	Grand Totals				

E: MATERNITY / SAFE DELIVERIES		NUMBER
1.	Normal Deliveries	
2.	Caesarean Sections	
3.	Breech Delivery	
4.	Assisted vaginal delivery	
5.	TOTAL DELIVERIES	
6.	Live Births	
7.	Still Births	
8.	Under Weight Babies (Weight below 2500 grams)	
9.	Pre-Term babies	
10.	No. of babies discharged alive	
11.	Referrals	
12.	Neonatal Deaths	
13.	Maternal Deaths	

Maternal complications		Alive	Dead
14.	A.P.H. (Ante Partum Haemorrhage)		
15.	P.P.H. (Post Partum Haemorrhage)		
16.	Eclampsia		
17.	Ruptured Uterus		
18.	Obstructed labour		
19.	Sepsis		

(Revised 2008)

Page 1 of 2

Appendix H. Health Facility Register, Maternity ward, Mozambique

Maternity Register - Sample from Mozambique Year ____________

	Monthly #	Date (D/M) and Time of Admission (H/M)	Full Name	Age	Gestational Age (in weeks)	Prevention of Mother to Child Transmission of HIV										Screening and treatment for Syphilis					Delivery							Complication and Maternal Deaths																			
										Taking ARVs at the Maternity-Mother						Syphilis test (check on the date of diagnosis)		Treatment for syphilis (please check only one option)				Type of delivery	Delivery of the placenta					Direct (please check only one)																			
						Test results on admission (please circle) – Positive (P); Negative (N); Unknown (D)	Maternity test results (please circle) – Positive (P); Negative (N); Not performed (N/A)	PMTCT Code	Initiated ARVs at ANC	Mono prophylaxis	Dual prophylaxis	Triple prophylaxis	Other (specify)	ART	None	Negative	Positive	1st dose	2nd dose	3rd dose	Date (D) Time (H)	Eutocic (E) Dystocic (D)	Spontaneous	Uterotonic during the 3rd Phase	Artificial	Companion present during delivery	Delivery in a semi-vertical/vertical position	Ante-partum bleeding	Maternal Deaths	Post-partum bleeding	Maternal Deaths	Prolonged Labor	Maternal Death	Obstructed Labor	Maternal Death	Pre-eclampsia	Maternal Death	Eclampsia	Maternal Death	Uterine rupture	Maternal Death	Retained placenta	Maternal Death	Sepsis	Maternal Death	Ectopic pregnancy	Maternal Death
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
1		D: H:				P N D	P N I N/A														D: H:	E D																									
2		D: H:				P N D	P N I N/F														D: H:	E D																									
3		D: H:				P N D	P N I N/F														D: H:	E D																									
4		D: H:				P N D	P N I N/F														D: H:	E D																									
5		D: H:				P N D	P N I N/F														D: H:	E D																									
6		D: H:				P N D	P N I N/F														D: H:	E D																									
7		D: H:				P N D	P N I N/F														D: H:	E D																									
8		D: H:				P N D	P N I N/F														D: H:	E D																									
9		D: H:				P N D	P N I N/F														D: H:	E D																									
10		D: H:				P N D	P N I N/F														D: H:	E D																									
11		D: H:				P N D	P N I N/F														D: H:	E D																									
12		D: H:				P N D	P N I N/F														D: H:	E D																									
13		D: H:				P N D	P N I N/F														D: H:	E D																									
14		D: H:				P N D	P N I N/F														D: H:	E D																									
15		D: H:				P N D	P N I N/F														D: H:	E D																									
16		D: H:				P N D	P N I N/F														D: H:	E D																									
17		D: H:				P N D	P N I N/F														D: H:	E D																									
18		D: H:				P N D	P N I N/F														D: H:	E D																									
						P N D	P Total															E D ToT																									

Maternity Register - MOD SIS-B03 Year _____

	Complication and Maternal Deaths												Procedures												Newborn																	Discharge				
	Indirect (please check the one that applies)																								Condition of the NB								ARV prophylaxis			Screening and treatment for Syphilis									
	Malaria	Maternal Death	Anemia	Maternal Death	HIV/AIDS	Maternal Death	Tuberculosis	Maternal Death	Intoxication by traditional medication	Maternal Death	Other complications	Maternal Death	Parentheral oxytocics	Parentheral antibiotics	Parentheral anticonvulsant	Magnesium sulphate	Manual removal of the placenta	Vacuum	Manual Vacuum Aspiration	Curretage	Neonatal resuscitation	Blood transfusion	Caesarean section	Obstetric hysterectomy	Live	Dead	Pre-term	Malformation	Twins	Sex (F / M)	Weight < 2500 g	Skin to skin contact immediately after birth	Mono prophylaxis	Dual prophylaxis	Other (specify)	Maternity test results (please circle) Positive (P); Negative (N); Not performed (N/A)	Initiated treatment for syphilis	Immediate breastfeeding after birth	Mother taking Vitamin A	Fully completed partograph	Date of Discharge (D/M)	Referral to another HF (which)	Days of hospital stay	Observations	Signature (Physician/ MCHN/Mid wife)
	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92
1																														F M						P N Nf									
2																														F M						P N Nf									
3																														F M						P N Nf									
4																														F M						P N Nf									
5																														F M						P N Nf									
6																														F M						P N Nf									
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