MAISHA QUALITY OF MATERNAL AND NEWBORN CARE STUDY

KEY FINDINGS: FOCUSED ANTENATAL CARE

2010–2012

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Key Findings: Focused Antenatal Care

BACKGROUND

The World Health Organization (WHO) guidelines for focused antenatal care recommend a minimum of four antenatal care (ANC) visits during a normal pregnancy in order to ensure that women receive all of the needed elements of ANC. WHO recommends that women begin ANC visits before 16 weeks of gestation so that they will receive key preventive treatments and to ensure that they have enough time for all four ANC visits during pregnancy.

Although 88% of women in low- and middle-income countries make at least one ANC visit, only 55% receive the recommended four ANC visits. Rural women and women in the poorer socioeconomic quintiles are much less likely than others to report making four or more ANC visits [1]. In Tanzania, 96% of women reported attending ANC at least once during their most recent pregnancy, but only 43% said that they had made four visits. More women in urban areas compared to rural areas (55% compared with 39%) accessed ANC services [2]. Only 15% made their first ANC visit before the fourth month of pregnancy, and nearly one-third of women did not seek ANC until their sixth month of pregnancy.

The Ministry of Health and Social Welfare (MOHSW) in Tanzania recommends focused ANC to promote maternal and newborn survival as an essential reproductive health intervention [3]. Essential interventions in the Tanzania ANC package include checking blood pressure; identifying possible obstetric complications such as pre-eclampsia; providing tetanus toxoid immunization; providing intermittent preventive treatment for malaria during pregnancy; screening for HIV, syphilis, and other sexually transmitted infections; counseling on birth preparedness and complication readiness; and introducing postpartum family planning [2].

THE MAISHA PROGRAM

The Mothers and Infants, Safe, Healthy, Alive (MAISHA) program in Tanzania is a USAID-funded program led by Jhpiego, an affiliate of Johns Hopkins University. The program works with the Ministry of Health and Social Welfare (MOHSW) to improve quality of maternal and newborn care in Tanzania. Since 2008, MAISHA has trained health care providers in basic emergency obstetric and newborn care (BEmONC), promoted supportive supervision to health care facilities in BEmONC, facilitated quality improvement for maternal and newborn health in facilities, and supported improvements to national health information systems for maternal and newborn health. MAISHA has trained and provided quality improvement support to more than 1,593 providers and supervisors from 275 facilities nationwide.

In 2010 the MAISHA program conducted a Quality of Care (QoC) study to gather baseline information on the quality of maternal and newborn care in the facilities that MAISHA supported in the first two years of the program. The study, conducted in 12 regions of Tanzania, used direct observations of maternity and antenatal care clients to assess the quality of services provided to women delivering in the facilities and their newborns. In 2012, after roughly two years of intervention in these facilities, the assessment was conducted again to document changes in the quality of care due to the MAISHA program.

MAISHA Program in the QoC Facilities

The MAISHA program was active in all facilities in the two-year intervention period, and program components included training of health care providers in BEmONC (one to two providers trained per facility), quality improvement (assessed annually), and supportive supervision from MAISHA and district health management teams (one to four visits per year, with an average of two). The mean length of implementation of the MAISHA program in these facilities was 25 months, with a range of 17 to 41 months.

METHODOLOGY OF THE QOC STUDY

The QoC study used the same methodology and sampling approach in 2010 and 2012, combining observations of women in the maternity ward during labor and delivery, observations of antenatal care consultations, inventories and record reviews, and health worker knowledge assessments. The numbers of facilities and observations made in each year of the study are shown in Table 1. Specific methods included the following:

- A team of national maternal and newborn health experts underwent clinical updates, training, and orientation to the study tools.
- Data collection teams visited the facilities and observed all deliveries occurring during the two- to three-day period (or as many as possible at regional hospitals).
- Data were entered into smartphones (2010) and tablets (2012).
- ANC consultations were observed from start to finish by the trained observers using the standardized checklist.

Table 1. Numbers of facilities and observations in the Tanzania QoC study, 2010 and 2012

	Regional hospitals assessed	Health centers and dispensaries assessed	ANC observations in hospitals	ANC observations in dispensaries and health centers	Total ANC consultations observed
2010	12	40	88	303	391
2012	12	38	79	287	366

RESULTS

Key Services Provided for ANC Clients

The proportion of women who correctly received key services at ANC increased between 2010 and 2012. The greatest improvements were in the proportion of clients who were tested for anemia, which increased by 38% ($p < 0.00$), the proportion receiving counseling for family planning (22% increase, $p < 0.0001$), and the proportion tested for syphilis (21% increase, $p = 0.0006$). Nominal increases were noted in the proportion of clients who received counseling and testing for HIV at their first ANC visit (6%), screening for blood pressure (5%), and intermittent preventive treatment for malaria during pregnancy (3%).

Table 2: Key ANC services provided, based on ANC observations, 2010 and 2012

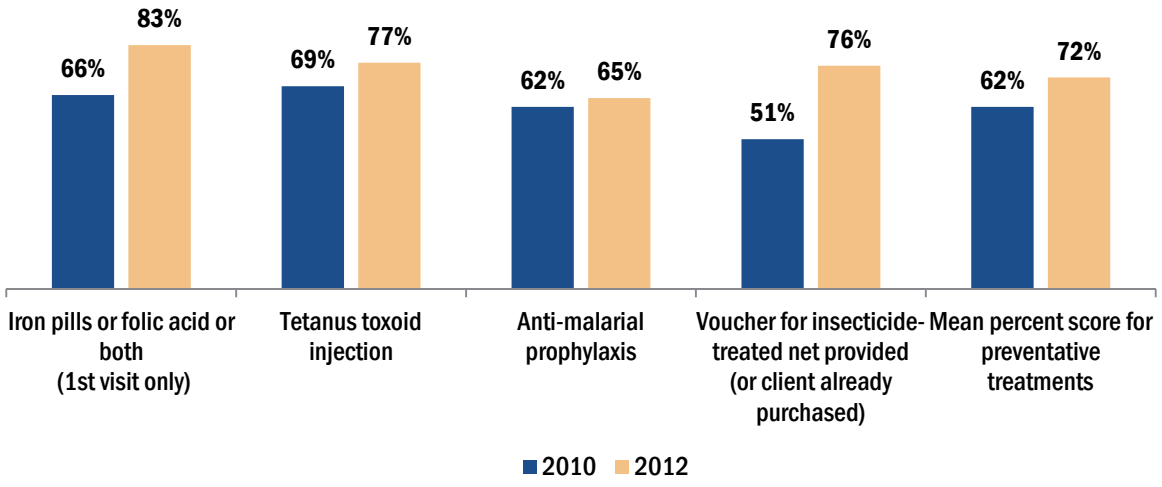
All facilities	2010		2012	
Key services	n	%	n	%
Blood pressure taken	308	79	306	84
Any urine test	154	40	180	50
Blood test for anemia	206	53	331	91
Counseling for family planning	193	49	258	71
Offered tetanus toxoid	260	66	267	77
Syphilis test	382	53	359	74
Intermittent preventive treatment for malaria during pregnancy*	242	62	233	65
Counseling and testing for HIV*	80	63	274	69

*Data is for first ANC visit only

Preventive Treatments

In 2012, improvements were evident in the provision of all four components of preventive care during ANC, with an increase of 10% ($p = 0.04$) in the mean percent score for all components. The largest increase was in the percentage of women receiving a voucher for an insecticide-treated net (25%, $p < 0.0001$). Provision of iron or folic acid to ANC clients increased by 17% ($p < 0.0001$). The improvement in provision of iron/folic acid was evident at all facilities, with notable increases of 25% at regional hospitals and 17% at lower-level facilities. Provision of tetanus toxoid increased by 8%, with an even increase across all levels of facilities.

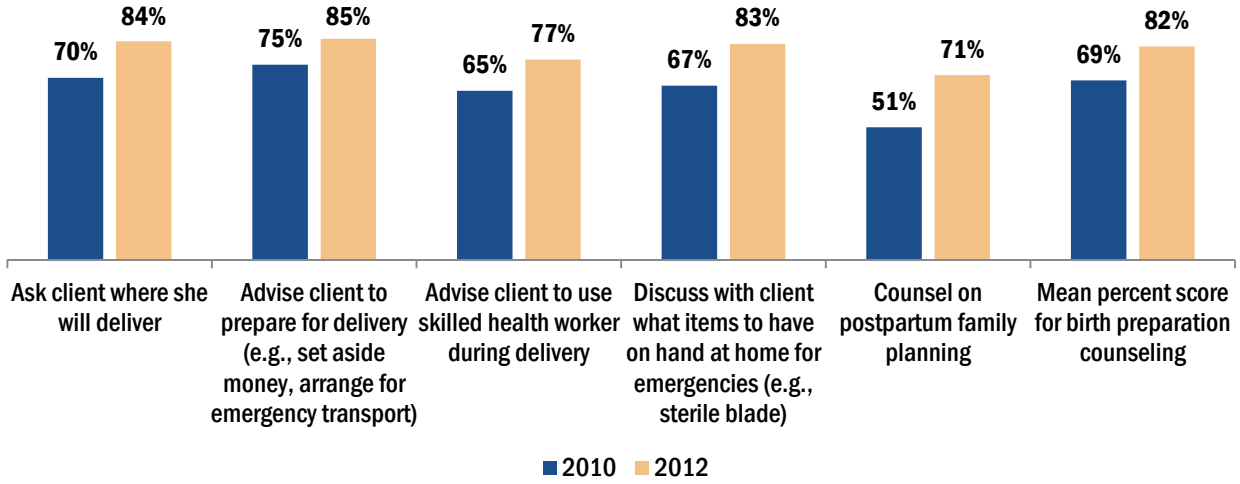
Figure 1: Provision of key preventive services during ANC, 2010 and 2012



Counseling on Birth Preparedness/Complication Readiness

Figure 2 shows improvements between 2010 and 2012 in counseling on birth preparedness during ANC. The mean percent score for birth preparation counseling increased by 13%. Significant improvements occurred in asking the woman where should planned to deliver (14% increase, $p < 0.0001$), discussing emergency supplies to have at home (16% increase), and counseling on postpartum family planning (20% increase, $p < 0.0001$). Performance at lower-level health facilities increased consistently, while performance at regional hospitals actually declined in some cases. This is discussed further in the Discussion section.

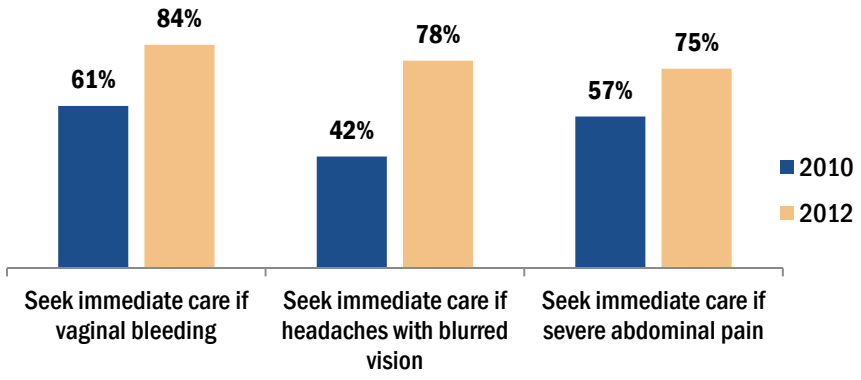
Figure 2: Counseling on birth preparedness and postpartum family planning, 2010 and 2012



Counseling on Danger Signs

As is shown in Figure 3, counseling on danger signs during the ANC visit increased substantially between 2010 and 2012, with counseling about severe headaches and blurred vision showing the largest improvement (36% increase), followed by counseling on vaginal bleeding (23% increase) and severe abdominal pain (18% increase). The increases were driven largely by improvements at the lower-level health facilities rather than in the regional hospitals.

Figure 3: Counseling on danger signs at ANC, 2010 and 2012



Counseling on Preventive Treatments

Counseling on preventive treatments actually declined for counseling on iron/folic acid, driven by an extraordinarily low performance at regional hospitals, with only 10–18% of ANC clients receiving iron/folic acid counseling. Slight improvements in counseling on tetanus toxoid and antimalarials were noted (Table 3). Across the board, lower-level facilities made greater strides than regional hospitals in improving counseling on preventive treatments. For counseling on tetanus toxoid, for example, lower-level facilities improved by 16%, whereas regional hospitals improved by only 5%. Counseling for antimalarials actually declined at the regional hospital level but improved at health facilities.

Table 3: Counseling during ANC, 2010 and 2012

Counseling tasks	2010	2012
Tasks for iron pills or folic acid:		
Explain the purpose of the treatment	83%	77%
Explain how to take	92%	83%
Explain side effects	37%	44%
All counseling for iron/folic acid	71%	68%
Tasks for tetanus toxoid injection:		
Explain the purpose of the treatment	60%	73%
Tasks for antimalarials:		
Explain the purpose of the treatment	80%	89%
Explain how to take	89%	90%
Explain side effects	34%	40%
All counseling for antimalarials	68%	73%
Tasks for insecticide-treated nets:		
Explain the importance of the treatment	87%	83%

Findings from ANC Inventory

In 2012 almost all facilities had functioning equipment for ANC service provision. Because the availability of supplies was generally high at baseline, the increases were modest. However, marginally fewer facilities had iron/folic acid and sulfadoxine-pyrimethamine (SP) at endline. In addition, only 74% of facilities had syphilis test kits (a 7% decline) and only 76% of facilities had HIV test kits at endline.

Table 4: Availability of equipment and supplies, 2010 and 2012

Supplies for ANC	2010 N=48		2012 N=50	
	N	%	N	%
Functioning adult weighing scale	43	90	47	94
Functioning blood pressure apparatus	43	90	47	94
Functioning stethoscope	39	81	48	96
Functioning fetal stethoscope	46	96	48	96
Iron or folic acid tablets	43	90	40	80
Tetanus toxoid vaccine	43	90	47	94
SP for intermittent preventive treatment	43	90	41	82
RPR kit/Syphilis SD Bioline	44	92	37	74
HIV rapid test/HIV Determine and Unigold	N/A	N/A	38	76
Mebendazole/albendazole	N/A	N/A	42	84

N/A indicates that data were not collected in 2010.

DISCUSSION

The high attendance at ANC in Tanzania makes ANC an important entry point for improving maternal health [4]. The findings from this study show that with intervention, improvements in ANC services can be achieved.

Evidence-Based ANC Interventions for First-Level Facilities:

- Iron and folic acid supplementation
- Tetanus immunization
- Prevention and management of malaria with insecticide-treated nets and antimalarial medicines
- Prevention and management of sexually transmitted infections and HIV, including provision of antiretroviral medicines
- Counseling and health education

Source: The Partnership for Maternal Health, Newborn and Child Health. *Essential Interventions, Commodities and Guidelines for Reproductive, Maternal, Newborn and Child Health: A Global Review of the Key Interventions Related to Reproductive, Maternal, Newborn and Child Health.* Geneva: PMNCH, 2011.

Impressive improvements were noted in the provision of preventive treatments to women during their ANC visits, with 83% of women receiving iron or folic acid at their first visit, 77% receiving tetanus toxoid injections, and 76% receiving vouchers for insecticide-treated nets. These are all considered highly effective in improving maternal and newborn outcomes. The provision of all of the key components of ANC increased between 2010 and 2012, with the greatest improvements seen in testing for anemia and syphilis and counseling for family planning. Improvements were also made in the delivery of all aspects of preventive care during ANC; most notably, there was a 26% increase in the distribution of vouchers for insecticide-treated nets. Birth preparedness counseling increased by 13% overall, with the greatest improvements found in counseling on postpartum family planning, reported availability of emergency supplies in the home, and asking women where they planned to deliver. Counseling on danger signs during the ANC visit increased substantially between 2010 and 2012, with counseling about severe headaches and

blurred vision showing the largest improvement (37% increase), followed by counseling on vaginal bleeding (23% increase) and counseling on severe abdominal pain (18% increase).

Despite the overall improvements, there were a few significant gaps in quality improvements. Our study, although with a notably small sample size, found that approximately one third of the first visit ANC clients did not receive HIV as part of their ANC consultation. Testing at ANC is a key entry point for HIV-positive women to obtain antiretroviral therapy for themselves and testing and prophylaxis for their infants.Estimates from UNAIDS show that only 53% of eligible pregnant women in Tanzania are receiving antiretroviral therapy [5]. The limited testing seen in this study may have been a result of lack of HIV test kits; at endline only one-fourth of the facilities assessed had test kits available. Counseling on preventive treatments actually declined for iron/folic acid. In addition, fewer facilities had supplies of iron/folic acid and SP at endline; only 74% of facilities had syphilis test kits (a 7% decline); and only 76% of facilities had HIV test kits at endline. Our findings, like those in the 2012 study by Nyamtema et al., suggest that Tanzanian health facilities needs higher security in essential supplies, drugs, and equipment in order to ensure quality service provision [4].

With only a couple of exceptions, the greatest improvements in quality occurred at lower-level health facilities. The difference in achievement between these facilities and the regional hospitals was particularly pronounced in the results related to counseling.* Environmental factors related to the lower volume of clients and closer relationship to the community (i.e., health care providers living in the community) may facilitate better relationships and should be counted among the strengths of the lower-level health facilities. Globally, in efforts to provide respectful maternity care—care that is woman-centered, empowering, and supportive—programs should promote free communication and the full expression of trust and commitment, and this may be more achievable when providers are connected to the community they serve [6].

Women need information to understand how to care for themselves during their pregnancy, when they should seek assistance for problems, and how to prepare for labor, delivery, and after delivery. Our findings show that 20% or more of ANC clients are not receiving information they need for a safe pregnancy and delivery. The poorer performance noted at regional hospitals indicates a need for a renewed emphasis on counseling in pre-service and in-service training and in supportive supervision and mentorship.

The Countdown to 2015 Report by WHO and UNICEF highlights the need to scale up services to save more mothers and newborns and to reach Millennium Development Goals 4 and 5. The impressive number of ANC visits in Tanzania needs to be underpinned by improved quality so that no opportunities—for example, for screening for HIV—are missed.

There may be some confounding in our results from regional hospitals. As the MOHSW attempts to decongest outpatient services in hospitals and enable them to focus on more specialized or complicated care, clients are being pushed to lower-level health facilities for routine ANC services and the quality of what is considered basic ANC may be affected. Continued emphasis on provision of key services and counseling at all ANC visits is required to sustain and continue improvements to service quality.

* The trend of lower-level health facilities scoring better on interpersonal communication with the client was seen in labor and delivery observations as well.

RECOMMENDATIONS

Based on the findings from the QoC study, the MOHSW and other key stakeholders are encouraged to:

- Continue to support provision of ANC services that showed some improvement, such as BP measurement for screening for hypertensive disorders and anemia testing;
- Focus on areas that need strengthening, such as urine testing and counseling on postpartum family planning;
- Continue to strengthen monitoring and supervision of preventive treatments during ANC consultations;
- Work to improve commodity logistics for ANC services—notably, the supply of syphilis and HIV tests;
- Refresh regional hospital staff on the national service standards, including counseling during ANC on preventive treatments and birth preparedness; and
- Integrate services to improve access (e.g., urine testing can be done during ANC).

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REFERENCES

1. World Health Organization and UNICEF. *Countdown to 2015 Report: Maternal, Newborn and Child Survival*. Geneva: WHO, 2010.
2. National Bureau of Statistics (NBS) and ICF Macro. *Tanzania Demographic and Health Survey 2010*. Dar es Salaam: NBS, 2011.
3. MOHSW /RCHS. 2007. National Package of Essential Reproductive and Child Health Interventions
4. Nyamtema, A.S., Bartsch-de Jong, A., Urassa, D.P., Hagen, J.P., van Roosmalen, J. The quality of antenatal care in rural Tanzania: what is behind the number of visits? *BMC Pregnancy and Childbirth* 2012; 12(70). doi: 10.1186/1471-2393-12-70 Accessed September 27, 2013, at: http://www.biomedcentral.com/1471-2393/12/70
5. UNAIDS. *2013 Progress Report on the Global Plan towards the Elimination of New HIV Infections among Children by 2015 and Keeping Their Mothers Alive*. UNAIDS, June 2013. Accessed September 4, 2013, at: http://www.unaids.org/en/media/unaids/contentassets/documents/unaidspublication/2013/20130625_progress_global_plan_en.pdf
6. White Ribbon Alliance for Safe Motherhood. *Respectful maternity care: the universal rights of childbearing women*. Washington, DC: WRA. Accessed September 4, 2013, at: http://www.whiteribbonalliance.org/WRA/assets/File/Final_RMC_Charter.pdf