Uptake of Antenatal Care (ANC) in the first trimester in West Nile: Ascertaining the supply side gaps and tackling the barriers

A team of experts examine the uptake of first trimester ANC in West Nile, Uganda

Prenatal care has been shown to improve the quality of maternal and child health outcomes at delivery. The revised Uganda Ministry of Health (MoH) guidelines for Antenatal Care (ANC) recommend at least eight ANC contacts, with emphasis on an initial visit during the first trimester. Early ANC facilitates the early identification of risk factors and remedial actions for better pregnancy outcomes. However, the uptake of ANC in the first trimester is challenging due to various factors, such as lack of maternal education, limitations to female decision-making power, fear of early disclosure and associated witchcraft, and the quality of ANC service provision by health facilities.

Interventions such as FamilyConnect aim to improve uptake of ANC. The FamilyConnect tool sends targeted SMS messages to pregnant women and heads of households, including male partners and caregivers, with educational information and peer support. This aims at improving mother and new-born care and motivating behaviour change during the first 1,000 days of life. The system also strengthens the referral chain by sending SMS reminders to community health workers for the purpose of tracking.

This study examines the supply-side gaps in receiving the first ANC in the first trimester. Specifically, we analysed factors affecting knowledge and uptake of ANC, including barriers, enablers, and relationships with Village Health Teams (VHTs) and health workers at the community and facility levels in the West Nile region of Uganda.

Findings

Objective 1. Prevalence of ANC1 services in the first trimester and association with the supply side gaps at different levels of care

Uptake of ANC services in the first trimester in catchment area 2019		
	Intervention	Counterfactual
Household survey	77.7%	78.2%
HMIS/DHIS2 Data	19%	27%

Availability of ANC services and essential medicines at the health facility level

	Intervention					counterfactual				
	ANC					ANC				
Level	N	%	Folic acid/ Iron	Meben dazole	Sulphadoxine/ Pyrimethamine	N	%	Folic acid/ Iron	Meben dazole	Sulphadoxine/ Pyrimethamine
RRH	1	69.6	100	100	100	1	100	100	100	100
GH	11	70.5	31	31	23	7	86.8	60	60	80
HC IV	14	74.0	54	52	52	4	94.3	69	60	60
HC III	54	75.3	56	64	56	34	79.6	60	57	62
HC II	55	49.9	33	33	33	45	58.1	71	71	57
Overall	135	67.5	51	53	50	45	58.1	64	60	62

Overall, the proportion of health facilities that provided ANC services following MoH standards during 2019 was consistently higher in the counterfactual at 74 per cent, compared to intervention districts at 67.5 per cent. Across intervention and counterfactual districts, compliance with ANC service availability standards was highest at Regional Referral Hospitals (RRH) at 84.8 per cent and lowest at health centres II (HC IIs) at 54.0 per cent.

Essential Medicines and Health Supplies (EMHS) stock cards for 2019 were reviewed to assess whether the medicines and health commodities required to provide ANC services according to MoH standards were in stock. The average availability of medicines and health commodities at the intervention and counterfactual health facilities during 2019 is presented below.

Most health facilities did not offer the full range of medicines and health commodities required. The availability of medicine and health supplies was better in the counterfactual districts than in the intervention districts (see table below). Ideally, folic acid should be taken before conception and at least during the first month of pregnancy to prevent the occurrence of congenital defects. In the intervention districts, folic acid and iron were the least available in health centres IV (HCIV) and hospitals.

Availability of laboratory services at the health facility level

Level		Blood grouping reagents	Complete blood count	HIV rapid testing kits	Liver function tests	Malaria rapid diagnostic	Syphilis (TPHA) test	Urine dipstick
Intervention	RRH			100%	100%	100%	100%	100%
	HC IV	77%	54%	100%		85%	85%	77%
	HC III			98%		100%	100%	96%
	HC II			100%	90%	92%	100%	100%
	Overall	77%	54%	99%	91%	96%	98%	94%
counterfactual	RRH			100%	100%	100%	100%	100%
	HC IV	100%	100%	100%		100%	100%	100%
	HC III			97%		100%	97%	91%
	HC II			100%	100%	83%	100%	100%
	Overall	100%	100%	98%	100%	98%	96%	92%

The basic laboratory investigations during the first trimester enable screening for conditions for which advice on prevention can be given or treatment scheduled.

Blood grouping reagents were only available at HCIV in all sampled facilities in the counterfactual and only 77% in the intervention districts. The lack of blood grouping reagents at other levels of care, compromises the opportunity to screen for potential blood grouping incompatibilities with the unborn child and undermines preparation for emergencies where a transfusion may be needed. Similarly, most facilities were also not able to conduct a complete blood count as these were only registered at HCIV (100% in counterfactual and 54% in the intervention facilities). As shown above, urine dipsticks, HIV test kits, and syphilis tests had high availability in both intervention and counterfactual health facilities.

Key bottlenecks from the supply side

Improvements to the procurement and delivery systems were identified as key to ANC attendance, as mothers become discouraged when they show up and are not given the required drugs. The above findings were further confirmed by the Health Systems Strengthening Baseline Report, which revealed that the availability of required ANC medicines and commodities was only 51.7% in intervention districts and 61.8% in counterfactual districts in 2019.

Targeted health education: The attendance of ANC was noted to have been affected by negative practices. For instance, mothers in some districts would not go for ANC until pregnancies were visible to other people. In light of this, more targeted health education was viewed as vital.

Improving service delivery by building staff capacity: District Health Team (DHT) members from some intervention districts expressed concern that health facilities did not provide the full range of ANC services, which turned mothers away. Moreover, mothers stated that ANC services were not available on the weekends. To address these barriers, the DHT members proposed staff capacity building and improvements in work scheduling.

Determining the association between knowledge and ANC-1 uptake during the first trimester

In the West Nile districts, mothers who knew that they were expected to attend four or more ANC visits were more likely to attend ANC1 in the first trimester. In contrast, there was no clear pattern between the knowledge of how many times a mother was supposed to attend ANC and if they attended ANC1 in the first trimester in the counterfactual districts. This suggests that supply-side factors may be the main drivers of or barriers to early ANC1 in these districts.

The relationship between knowledge and ANC 1 attendance in the first trimester

Knowledge question	Intervention	Counterfactual
How many times is a pregnant woman supposed to attend antenatal care?		
1-3 times, N (%)	62 (60%)	37 (78%)
4 times, N (%)	394 (76%)	375 (77%)
5-7 times, N (%)	515 (83%)	328 (79%)
8 and above, N(%)	682 (76%)	232 (79%)
Sources of information on health and nutrition services		
Public health facility, N(%)	1,545 (78%)	924 (78%)
Private health facility, N(%)	180 (84%)	186 (65%)
Community Health worker, N(%)	103 (81%)	29 (86%)
Traditional birth attendant, N(%)	47 (96%)	3 (67%)

An equal proportion of mothers in the intervention in West Nile and northern Uganda counterfactual districts named a public health facility as their source of knowledge for when to attend ANC1. Overall, mothers in both groups had other sources of information. The most common source among mothers in the West Nile was traditional birth attendants (TBA), followed by private health facilities and community health workers, while the least was the public health facility. In the counterfactual districts, the most commonly named source was the community health worker, followed by public health facilities, private health facilities, and the least TBAs.

	Barriers	Findings
Supply factors	Limited access to health facilities	Mothers in both the intervention and counterfactual districts revealed that the long distances they travelled to reach health facilities were a hindrance to ANC access.
	Drug stock-outs	Mothers, mainly in counterfactual districts, revealed that they were discouraged by the drug stock out.
	Insufficient follow-up and outreach services	A number of mothers from counterfactual districts said this had negated the use of ANC services. Inadequate facilitation of VHTs was viewed as the main cause. Outreaches by professional health workers were also viewed as inadequate yet they were key in increasing access to ANC-related services.
	Low staffing at health facilities	Mothers in counterfactual districts indicated that the numbers of health workers in most health facilities were insufficient. This increased the waiting time for mothers and discouraged them from seeking ANC services.
Demand factors	Low male/husband involvement	It was noted that poverty or busy schedules limited men's attendance of ANC to only the late stages of the pregnancy.
	Poverty	Mothers across the board expressed concern that poverty deterred women from obtaining some items needed to put ANC knowledge into practice.
	Negative attitudes and lack of interest	Cultural beliefs were reported as limiting the use of ANC knowledge. Likewise, lack of interest or laziness was said to constrain the translation of knowledge about ANC into practice.
	Alcoholism	Mothers in intervention districts were silent about the effect of alcoholism on ANC use while those in counterfactual districts, especially Amuru, revealed that alcoholism limited the use of ANC services.

Identified appropriate channels of communication by VHTs and health workers

Participating mothers were asked about their preferred channels/platforms of communication used by VHTs and health centre staff to convey ANC information. Mothers in both intervention and counterfactual districts had similar perceptions, expressing preference for VHTs' home visits, community trainings and during distribution of Mama-kits and mosquito nets. Additional channels of communication included church leaders, marketplaces, adhoc meetings like funerals, radios, and education sessions during antenatal visits. However, some participants in counterfactual districts stressed that most of the health information was directed to women and children.

Perceptions of the role of FamilyConnect in antenatal care

Mothers in intervention districts where the FamilyConnect tool was applied revealed its key role in enhancing ANC attendance through sharing information on nutrition during pregnancy, ANC visits and preparation for delivery.

Whilst a few mothers in Amuru, one of the counterfactual districts, were aware of the FamilyConnect platform, ANC attendance was not enhanced. This is due to inadequate experience with the tool. The penetration of FamilyConnect was also limited to a few districts, even in the intervention area. However, overall, FamilyConnect was vital for promoting ANC.

Discussion

Knowledge was an important predictor of ANC use. Mothers who had attended four or more ANC visits were more likely to be found in intervention districts where mothers were aware that a higher number of ANC visits was required. There was also an inverse relationship between supply-side factors and the use of ANC1 services in the first trimester, although this did not reach statistical significance.

The provision of ANC services according to the MoH standards varied but was slightly higher in counterfactual districts. The provision of a standard ANC service is shown to enhance its attendance, and therefore, appropriate measures should be taken into account to enhance compliance with the required standards. The study identified the need for more targeted health education in order to reach more mothers and other community members with ANC.

Conclusion

This study showed that investment in health education and communication to community members and mothers is essential to improving ANC attendance. Furthermore, applying various means of communication such as FamilyConnect and TBAs is also critical in reaching the larger population through a community-based approach and empowering women to freely access information and maternal health services.

Boda Boda Rider on arrival with an expectant mother at Midigo Health Centre IV /. Photo Credit UNICEF: © UNICEF/UNI358283/Emorut

The HSS baseline study was comparative cross-sectional and mixed methodology in 11 districts (Arua, Adjumani, Maracha, Madi Okollo, Moyo, Pakwach, Obongi, Koboko, Nebbi, Zombo and Yumbe) in the West Nile region of Uganda Nile and six counterfactual districts in the Acholi (Gulu, Kitgum, Nwoya and Amuru) and Lango (Apac and Kole) regions.

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