Antenatal Care Coverage, Quality Adjusted Coverage, and Equity in Ethiopia:

A Policy Brief

Key Messages

1. Antenatal care use has improved at national level, but there are inequalities by region and socioeconomic status.

2. While access to antenatal care has improved, the quality of services remains unequal and incomplete.

3. Health facility readiness to provide quality ANC services has been improved, but there is still challenge in availability of trained staff and supplies in rural settings.

4. Quality of ANC services has stagnated—with gaps in testing, counselling, and regional variations.

5. Effective coverage of antenatal care has improved, But major gaps in quality remain an issue.

Background

Over the past two decades, Ethiopia has made substantial progress in improving access to reproductive, maternal, newborn, and child health (RMNCH) services. However, the quality of maternal health care—particularly antenatal care (ANC)—continues to lag, posing a barrier to achieving better health outcomes. Recognizing this challenge, the Federal Ministry of Health (FMoH) is working to meet national health targets outlined in the 2023/24–2025/26 plan ,the Health Sector Transformation Plan II (HSTP-II) , and the Sustainable Development Goals (SDG) 2030 , with a focus on improving service coverage, care quality, and reducing inequalities across population groups.

In support of these goals, the Ethiopia Countdown to 2030 initiative, led by the Health Systems Research Directorate at EPHI, conducted a study using data from the Ethiopia Demographic and Health Surveys (2011–2019) , , the 2022 National Health Equity Survey , and the 2014 and 2021/22 ESPA health facility surveys , . The study analyses ANC coverage trends, equity across regions and population groups, service readiness, and the quality of care delivered. It evaluates both contact coverage (ANC visits) and effective coverage (quality-adjusted care), using key indicators aligned with WHO standards, and inequalities overtime. This policy brief provides key messages and actionable insights to guide policy, strategic planning, and program improvements in Ethiopia's maternal health services, with a focus on ANC utilization, quality, and equity. More information about the methods found on the report (link for the report).

1. *MOH. Health Sector Medium Term Development and Investment Plan. 2023;(June):2016–8.*
2. *MoH. Health Sector Transformation Plan II: HSTP II (2020/21-2024/25). 2021*
3. *SDG 2030 targets*
4. *EDHS 2011*
5. *EDHS 2016*
6. *Mini-EDHS 2019*
7. *EPHI and MOH. National Health Equity Survey 2022/23: Final Report.*
8. *EPHI. Ethiopia Service Provision Assessment Plus (SPA+) Survey. 2014*
9. *Ethiopian Public Health Institute. Service Provision Assessment 2021–22.*

Key Message 1: Antenatal Care Use has Improved at National Level, but there are Inequalities by Region and Socioeconomic Status

There is a dramatic improvement on the ANC at country level: Between 2011 and 2022, the percentage of women attending at least one ANC visit increased from 43% to 90%, while those receiving four or more visits (ANC4+) rose from 19% to 54%. This marks a significant improvement in maternal health service uptake across the country *(Figure 1).*

Equity substantially improved among disadvantaged groups: ANC4+ use improved among rural women (14% to 48%), uneducated women (12% to 46%), and women from the poorest households (8% to 41%), indicating effective outreach and inclusion of vulnerable populations *(Figure 1).*

Inequality gaps narrowed and regions progressed well: The ANC4+ coverage gap between urban and rural women reduced from 32%to 20%, between educated and uneducated from 52% to 28%, and between richest and poorest from 38% to 33%.

Regional improvements were relatively higher in Amhara (12% to 51%) and Oromia (19% to 54%), while low-performing regions like Somali (7% to 31%) and Afar (11% to 20%) showed slight improvement *(Figures 2).*

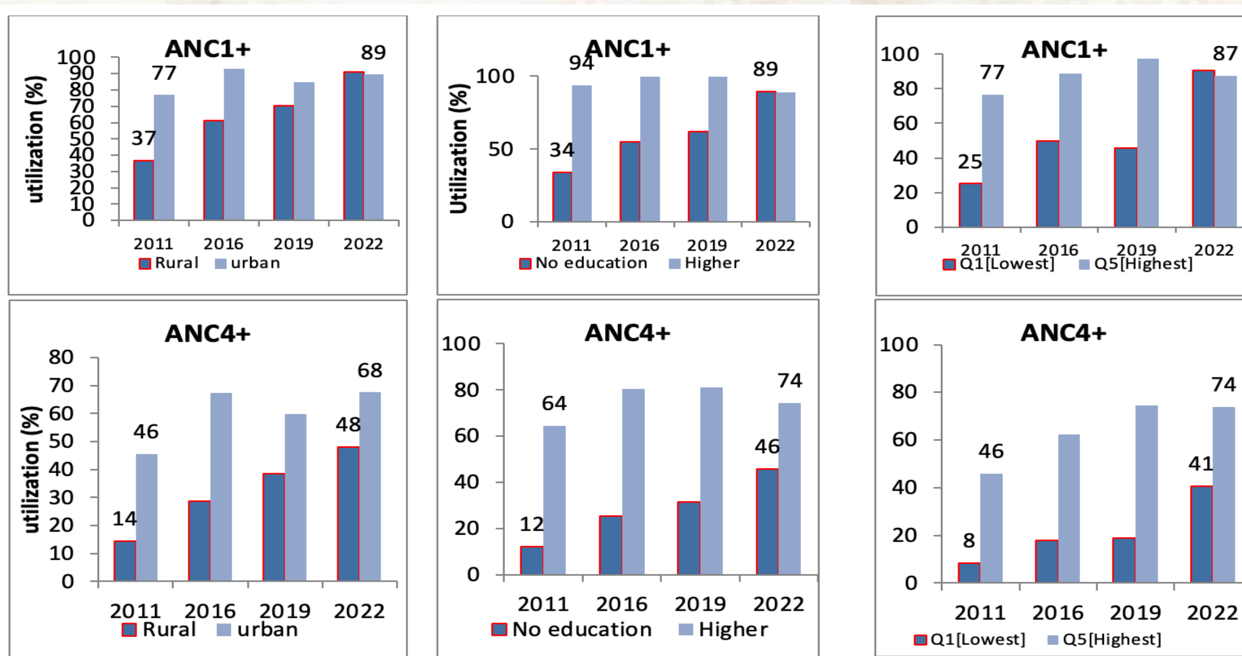

Figure1: Trends and distribution of ANC care by residence, education, and wealth quintile, 2011 - 2022

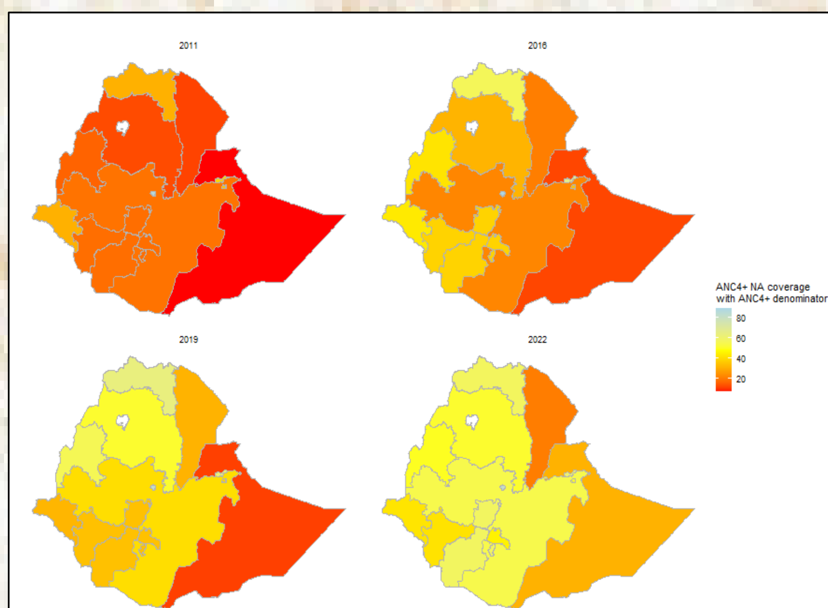

Figure2: Trends and distribution of ANC4+ care by region, 2011- 2022

Key Message 2: While Access to Antenatal Care has Improved, the Quality of Services Remains Unequal and Incomplete

Access to ANC is remarkably increased, but quality of care still lags: While ANC1+ coverage increased from 43% to 90% and ANC4+ from 19% to 54% between 2011 and 2022, content-adjusted ANC4+ (care with at least five recommended components) only increased from 24% to 50%, which shows many women attend ANC but don't receive -quality care *(Figure 3).*

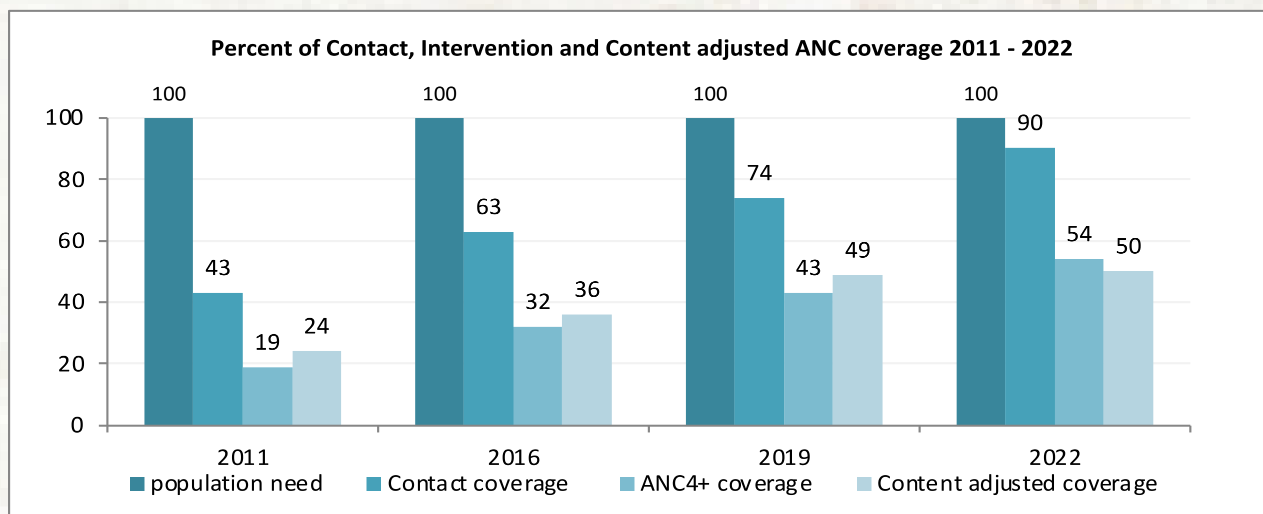

Figure3: Trends of ANC contact coverage, intervention and content adjusted coverage 2011 -2022

The content adjusted coverage showed wider gaps for rural, poor, and uneducated women: In 2022, rural women had a 47%-point gap between contact and content-adjusted ANC coverage while 28% point by urban women; the poorest women had a 54-%point gap versus 17 % points for the richest; and women with no formal education had a 46 %-point gap compared to 17 %points for the most educated. These gaps point to deep inequities in the quality of ANC services. *(Figure 4).*

Figure3: Trends of ANC contact coverage, intervention and content adjusted coverage by place of residence, wealth quintile, and educational level 2011 -2022

Despite improved contact coverage, regional disparities in quality persist: In 2022, content-adjusted ANC coverage ranged from 79% in Addis Ababa to just 18% in Afar followed by Somali, 27%. *(Figure 5).*

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10. Iron prescribed, urine and blood samples taken, blood pressure measured, and information provided about pregnancy complications

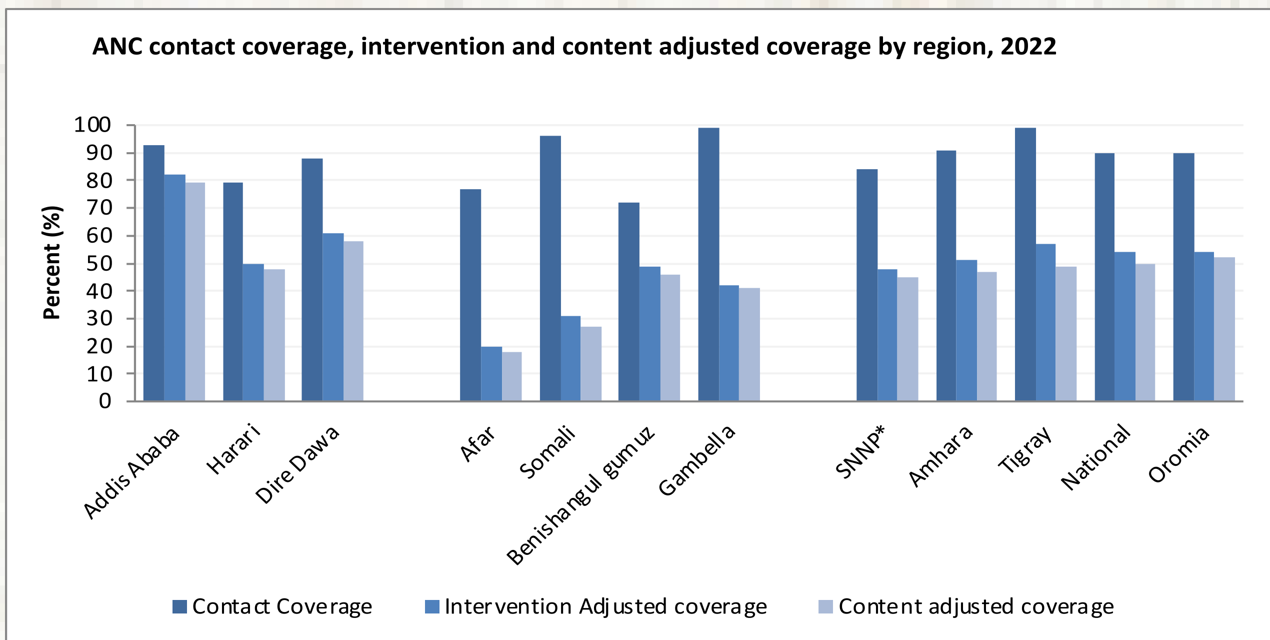

Figure5: ANC contact coverage, intervention and content adjusted coverage by region 2022

Key Message 3: Health Facility Readiness to Provide Quality ANC Services has been Improved, but there is Still Challenge in Availability of Trained Staff and Supplies in Rural Settings

Readiness has improved across all facility types: Between 2014 and 2021/22, the median ANC readiness score increased from 37 to 52. Health centers improved from 63 to 72, clinics from 50 to 62, and health posts from 33 to 44. Hospitals showed a smaller rise, from 80 to 83. This shows general progress in facility capacity, especially in primary care settings. *(Figure6).*

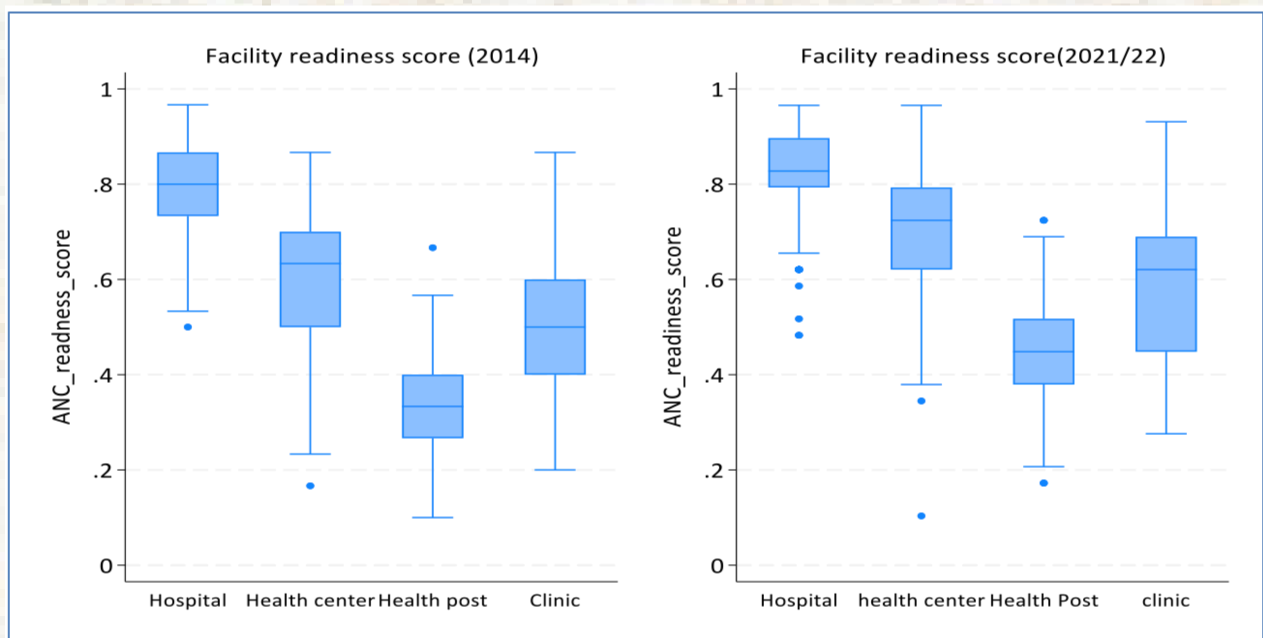

Figure 6: Facility readiness for Antenatal care by facility level

Biggest challenges are availability related issues like trained staff and guidelines: While most ANC readiness domains improved, scores for trained staff and ANC guidelines dropped sharply—by 62% in hospitals, 63% in health centers, and 58% in health posts.

Medicine availability increased significantly—by 173% in health posts and 82% in clinics. (Table1).

Table 1: ANC Domain score for providing ANC service by facility type 2014 & 2022

		Hospital		Health centre		Health Post		Other clinic	
		n	Mean [95%CI]	n	Mean [95%CI]	n	Mean [95%CI]	n	Mean [95%CI]
ESPA2014	Basic amenities	200	87[85,89]	289	62[60,64]	259	45[42,47]	171	61[58, 64]
	Staff& Guideline	200	47[42,52]	289	35[31,39]	259	38[34,42]	171	7[4,10]
	Equipment	200	78[77,80]	289	68[66,70]	259	51[49,53]	171	77[75,79]
	Diagnostic capacity	200	93[91,95]	289	53[50,56]	NA	NA	171	26[21,32]
	Medicine	200	65[62,69]	289	48[45,51]	259	19[16,22]	171	12[8,15]
ESPA 2021/22	Basic amenities	364	92[90,93]	267	66[64,69]	201	47[44,49]	73	66[61,71]
	Staff& Guideline	364	18[16,21]	267	13[10,16]	201	16[13,19]	73	11[6,15]
	Equipment	364	81[79,83]	267	83[81,85]	201	61[58,64]	73	85[82,89]
	Diagnostic capacity	364	94[92,95]	267	66[62,69]	NA	NA	73	46[37,55]
	Medicine	364	68[66,71]	267	71[68,74]	201	51[47,55]	73	21[13,28]

Lower facilities and facilities found in Rural areas still lag behind: In 2021/22, health posts scored just 16% in staff/guidelines and 47% in basic amenities. Regional gaps also persist, especially in areas like SNNP and Oromia. *(Table2).*

Table 2: Readiness of facility to provide ANC services by background characteristics

		2014			2021/22			% Change (2021-2014)
		n	mean	[95%CI]	n	mean	[95%CI]	
Facility Type	Hospital	200	79	77,80	364	79	78,80	0
	Health center	289	59	57,60	267	70	68,71	19
	Health Post	259	35	34,36	201	43	41,45	23
	Clinic	171	50	48,52	73	60	56,63	20
Managing Authority	Public	690	46	39,41	758	50	48,51	25
	Private	229	56	49,53	147	62	59,64	22
Location	Urban	390	59	57,60	450	65	63,67	10
	Rural	529	39					
Region	Tigray	97	55	52,58				
	Afar	53	46	43,49	36	52		46,58 13
	Amhara	146	45	42,48	149	53		50,56 18
	Oromia	169	39	36,42	205	50	48,52	28
	Somali	54	36	32,39	68	51	47,56	42
	Benishangul gumuz	51	41	38,43	28	61	57,65	49
	SNNP	143	41	39,43	141	45	43,48	10
	Gambela	38	39	36,43	43	51	46,57	31
	Harari	39	56	53,58	33	63	57,69	13
	Addis Ababa	71	70	67,73	62	77	74,79	10
	Dire Dawa	58	56	54,58	48	66	61,71	18
	Sidama				92	50	46,53	
	Total	919	42	41,43	905	51	49,52	21

Key Message 4: Quality of ANC Services has Stagnated—with Gaps in Testing, Counselling, and Regional Variation

Little improvement in quality of ANC services over time: From 2014 to 2021/22, the composite ANC process quality index slightly increased from 57% to 58%. This indicates stagnation in the quality of care, despite expanded access. *(Table3).*

Many women miss essential tests and counselling: While 84% of providers measured blood pressure and 85% assessed weight, fewer women received essential laboratory tests—only 45% had urine tests, 40% had hemoglobin tests, and just 35% were tested for syphilis.

Key counseling services were also lacking: only 53% discussed nutrition, 39% discussed pregnancy progress, and a mere 5% covered breastfeeding, leaving critical care gaps. *(Figure7).*

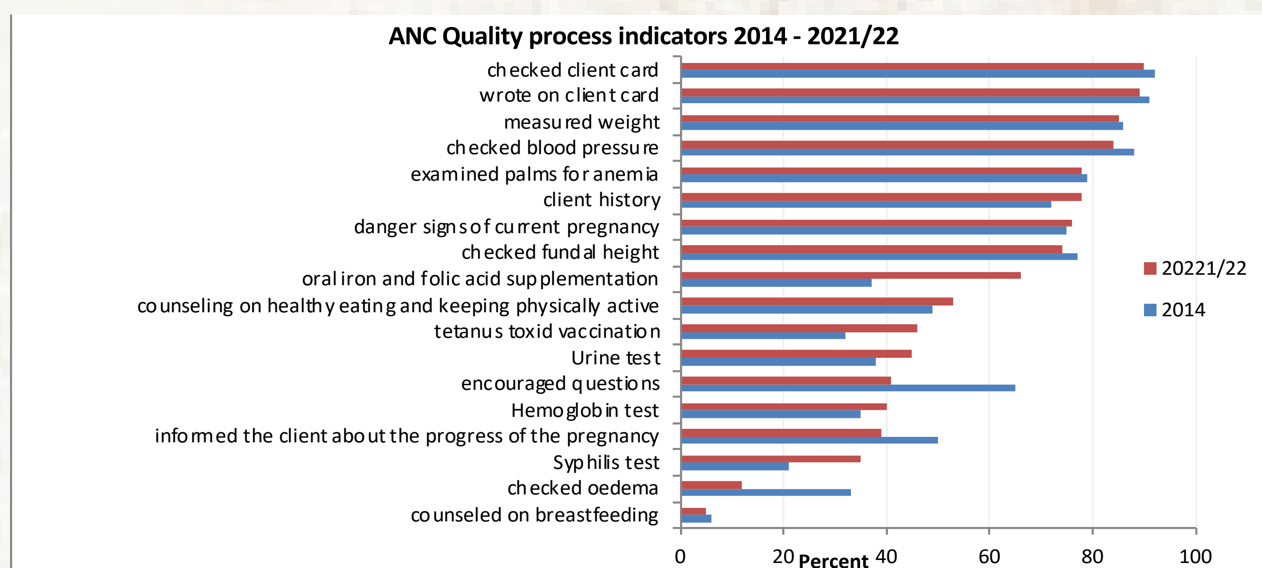

Figure7: Trends of ANC based clinical actions during ANC services provisions 2014 and 2022

Big differences in service quality between regions: In 2021/22, the process quality index varied widely—from just 50% in Sidama to 64% in Afar and Amhara, which indicates that women in some regions receive far fewer recommended services. *(Table3).*

Table 3: Quality process index of facility to provide quality ANC services by background characteristics

	ESPA 2014		ESPA 2021/22	
	observation	Estimate [95%CI]	observation	Estimate [95%CI]
Facility Type				
Hospital	948	60[59,61]	3049	59[57,60]
Health centre	648	58[56,60]	1097	59[57,62]
Health post	14	31[16,47]	74	49[41,58]
Health clinic	30	58[47,69]	115	53[49,57]
Managing authority				
Public	1414	55[53,58]	3859	58[56,60]
Private	226	58[51,60]	476	55[52,57]
Location				
Urban	1241	60[58,62]	2925	58[56,61]
Rural	399	52[49,56]	1410	57[54,60]
Region				
Tigray	173	63[58,69]		
Afar	47	57[51,62]	89	64[57,71]
Amhara	270	56[51,60]	699	64[60,67]
Oromia	424	55[50,59]	1386	57[54,60]
Somali	75	52[43,60]	225	55[47,64]
Benishangul gumuz	72	55[47,63]	116	61[56,65]
SNNP	188	52[46,57]	788	54[49,60]
Gambella	27	55[49,61]	122	54[51,58]
Harari	49	55[46,64]	82	62[57,66]
Addis Ababa	232	60[56,64]	386	57[53,61]
Dire Dawa	83	61[56,66]	127	55[50,60]
Sidama			315	50[45,55]
Total	1640	57[54,60]	4335	58[56,59]

Key Message 5: Effective Coverage of Antenatal Care has Improved, But Major Gaps in Quality Remain an Issue

Access has expanded, but quality lags: In 2022, 91% of pregnant women had at least one ANC visit (contact coverage), but only 41% received quality-adjusted care—up from 24% in 2014. (Table4&Table5).

Facility readiness limits service quality: After adjusting for health facility readiness (infrastructure, equipment, trained staff), coverage drops to 75%, and further declines to 68% when adjusted for actual service delivery (*Table4&Table5).*

Rural areas face greater quality deficits: Contact coverage is similar across settings (94% urban vs. 90% rural), but intervention-adjusted coverage drops to 63% in rural vs. 78% in urban areas, and quality-adjusted coverage is slightly lower in rural (40%) than urban (42%) settings. (Table4&Table5).

Gaps persist across the care continuum: While basic services like weight and blood pressure checks are commonly provided, only 45% of women received urine tests, 40% had hemoglobin tests, and just 35% underwent syphilis testing—highlighting missed opportunities for lifesaving care *(Table4&Table5).*

Table 4: Effective coverage cascade of ANC by background characteristics, 2014

	Contact coverage	Readiness adjusted coverage	Intervention adjusted coverage	Quality adjusted coverage
	Estimate [95% CI]	Estimate [95% CI]	Estimate [95% CI]	Estimate [95% CI]
Place of Residence				
Total	65[61,68]	58[56,59]	39[37,41]	24[23,25]
Urban	91[87,95]	77[75,78]	63[60,66]	38[36,40]
Rural	61[56,65]	53[52,55]	33[31,35]	20[19,21]
Region				
Tigray	90[87,94]	60[58,62]	49[46,51]	29[27,31]
Afar	52[43,60]	65[62,69]	44[39,48]	26[24,29]
Amhara	68[62,73]	61[59,62]	43[41,46]	27[25,28]
Oromia	55[46,64]	54[52,57]	31[28,34]	19[18,21]
Somali	44[36,52]	68[64,73]	45[40,50]	26[24,27]
Benishangul gumuz	69[62,77]	50[46,55]	34[29,40]	21[17,24]
SNNP	70[64,75]	53[50,55]	32[30,34]	19[18,21]
Gambella	73[67,78]	69[66,72]	47[43,51]	29[26,32]
Harari	85[73,97]	68[65,71]	56[50,62]	32[29,35]
Addis Ababa	97[95,99]	77[76,79]	68[66,70]	41[40,43]
Dire Dawa	96[90,101]	77[71,83]	72[58,85]	43[36,50]

Table 5: Effective coverage cascade of ANC by background characteristics, 2022

	Contact coverage	Readiness adjusted coverage	Intervention adjusted coverage	Quality adjusted coverage
	Estimate [95% CI]	Estimate [95% CI]	Estimate [95% CI]	Estimate [95% CI]
Place of Residence				
Urban	90[88,92]	82 [82,83]	78[77,79]	42[42,43]
Rural	92[90,94]	72 [71,73]	63[62,65]	40[40,41]
Total	91[90,93]	75 [74,76]	68[67,69]	41[40,42]
Region				
Afar	77[71,82]	72 [69,74]	60[57,64]	38[36,40]
Amhara	91[89,93]	75 [73,76]	67[65,69]	41[40,42]
Oromia	90[88,93]	74 [73,75]	66[64,68]	40[39,42]
Somali	96[93,99]	73 [70,75]	62[59,66]	41[39,44]
Benishangul gumuz	72[68,77]	74 [72,76]	66[63,68]	39[37,41]
Sidama	99[98,100]	75 [74,76]	70[68,72]	44[42,45]
Gambella	99[98,100]	78 [77,79]	71[69,74]	41[40,43]
Harari	79[75,83]	81 [79,82]	74[72,76]	39[37,40]
Addis Ababa	93[91,95]	83 [82,83]	80[79,81]	44[43,45]
Dire Dawa	97[96,98]	83 [83,84]	82[82,83]	45[44,46]

Potential Impacts of Improved ANC Coverage and Quality

- High-quality ANC reduces maternal and newborn deaths by detecting and managing risks (e.g., infections, hypertension and other pregnancy related complications)
- The improved ANC service ensure equitable access for vulnerable groups (rural, poor, uneducated), reducing disparities while strengthening primary healthcare capacity for Universal Health Coverage.
- In the long term, hhealthy pregnancies improve child development, education, and economic productivity, supporting to realize SDG 1 (poverty reduction) and SDG 4 (education).

Recommendations and Implications for Improving Antenatal Care Service

These recommendations aim to create a more equitable and effective antenatal care system. The implications highlight the importance of accessibility, quality, community involvement, and data-driven decision-making in improving maternal health outcomes. By addressing these areas, health systems can significantly enhance the care provided to pregnant women, ultimately leading to better health for mothers and infants and no one behind the care.

- Focus on Reaching the under-served populations: Continue expanding ANC access, especially in rural, poor, and less-educated communities; Use targeted outreach to improve services in regions like Afar, Somali, and Gambella, where coverage is still low. Expanding access to ANC in rural and impoverished areas will help reduce maternal and infant mortality rates. Targeted outreach can help identify and engage communities that have historically been marginalized, ensuring they receive the necessary care. This approach can also foster trust and collaboration between health providers and the community.
- Improve the Quality of Care, Not Just Access: Strengthen training for health workers to ensure they provide all recommended tests and counselling; Ensure health facilities have essential supplies, clear guidelines, and trained staff, especially in rural areas. Enhancing the quality of ANC services is crucial for effective care. By strengthening training for health workers, it ensures that they are equipped to provide comprehensive services. This can lead to better health outcomes as women receive appropriate tests and counseling, reducing complications during pregnancy.
- Address Regional Disparities: Strengthen the Investment in regional health systems, focusing on areas with the biggest gaps, and tailor interventions to local needs; Monitor regional progress to quickly identify and address any declines or persistent gaps. Investing in health systems in regions with significant gaps can lead to more equitable health outcomes. Tailoring interventions to local needs ensures that resources are used effectively and that specific challenges faced by different regions are addressed. Monitoring progress allows for timely adjustments to strategies, maximizing impact.
- Enhance Facility Readiness and Staff Capacity: Increase training and supervision for health workers, especially in rural lower-level facilities; Improve infrastructure, supplies, and service standards uniformly across regions. This will help to ensuring that facilities are well-equipped with necessary supplies and infrastructure can improve service delivery, enhance the overall quality of care. This uniform improvement across regions can help standardize care and reduce disparities.
- Raise the Quality and Completeness of Services: Strengthen the implementation of standard protocols to ensure all women receive comprehensive antenatal tests and counselling; Regularly supervise and evaluate service quality to ensure continuous improvement. These can lead to higher satisfaction rates among patients and better health outcomes for mothers and infants.
- Strengthen Data Use and Monitoring: Use data to identify vulnerable groups and regions requiring additional support; Track progress regularly and adjust strategies accordingly to ensure equitable improvements. Utilizing data effectively allows for targeted interventions and resource allocation. By identifying vulnerable groups and regions, health policymakers can implement strategies that address specific needs. Regular tracking of progress ensures that the initiatives remain relevant and effective, enabling adjustments based on real-time feedback.
- Promote Community Engagement and Education: Involve local communities to raise awareness of the importance of comprehensive ANC; Empower women and families to demand quality care. Empowering women and families to demand quality care fosters accountability and responsiveness from health providers. This community-driven approach can enhance health literacy and encourage proactive health-seeking behavior.

Box-1 The facility readiness for the ANC services is evaluated based on the five domains: Basic amenities (power, improved water sources at facility premises, rooms for visual privacy for patient consultations, access to adequate sanitation facilities for clients, communication equipment, Access to computer with e-mail and Internet, Emergency transportation); Basic equipment and supplies(Tape measure /fundal height measure, Examination bed /coach, Adult weigh scale, Foetal stethoscope, Examination light, Stethoscope, Blood pressure apparatus, Gloves, Single use syringe, Soap and water, alcohol based rub, Disinfectant); Staff and guideline (Guideline and Trained staff); Diagnostic capacity (Haemoglobin Urine - protein Urine dipstick - glucose HIV diagnostic capacity Syphilis RDT), Medicine and Commodity (iron tablets (individual tablets) folic acid tablets (individual tablets) combined iron and folic acid tablets tetanus toxoid vaccine). In 2014, 200 hospitals, 289 health centers, 259 health posts, and 171 clinics providing ANC and in 2022; 364 hospitals, 267 health centers, 201 health posts, and 73 clinics providing the services included in the analysis.
The process quality of ANC services assessed through 18 clinical items: Counselled on breastfeeding, Checked oedema, Syphilis test, Informed the client about the progress of the pregnancy, Hemoglobin test, Encouraged questions, Urine test, Tetanus toxoid vaccination, Counselling on healthy eating and keeping physically active, Oral iron and folic acid supplementation, Checked fundal height, Danger signs of current pregnancy, Client history, Examined palms for anemia, Checked blood pressure, Measured weight, Wrote on client card, Checked client card. The process number of professionals in the ANC service room were 1,640 in 2014 and 4335 in 2022.

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