PMA Ethiopia One-Year Postpartum Maternal and Newborn Health Technical Report, 2021-2023 Cohort

PMA ETHIOPIA
PERFORMANCE MONITORING FOR ACTION

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PMA Ethiopia One-Year Maternal and Newborn Health Technical Report, 2021-2023 Cohort

Title: One-Year Postpartum Data Collected on Women's Sexual and Reproductive Health, Postnatal Care, and Child Health

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Executive Summary

Background and Objective:

To fill the data gap in priority maternal and newborn health (MNH) indicators in Ethiopia and assess factors associated with the initiation and continuation of care, Performance Monitoring for Action Ethiopia (PMA Ethiopia) implemented a longitudinal survey that enrolled and followed pregnant women at six-weeks, six-months, and one-year postpartum.

This report summarizes key findings from the second cohort's **one-year postpartum survey**. During the one-year postpartum interview, resident enumerators collected information on women's sexual and reproductive health, postnatal care (PNC), and child health, including child nutrition, immunization, and experiences of illness.

Training for data collection for the six-month and one-year interviews took place simultaneously in February 2022. Data collection for the one-year postpartum interview occurred between September 2022 and September 2023. The analytic sample included 1,858 women aged 15-49 who provided complete one-year postpartum survey data. Children-level analyses included in this report were restricted to all alive children who remained in follow-up (1,831 out of 1,822 live births).

Key Findings:

- Sexual and reproductive health
    - Roughly 44% of women reported that their menses had returned at time of the one-year postpartum interview.
    - Over ninety percent (94.1%) of women had resumed sexual activity.
    - Slightly more than four in ten (44.3%) women were using a family planning method by one year postpartum. Among all current users, the most common methods were injectables (53.2%) followed by implants (35.3%) and contraceptive pills (6.7%).
    - The majority (85.6%) of women using contraception discussed their decision with their partner before method initiation.
    - Among all non-pregnant women, 36.7% were not current users of family planning, but intended to use a method in the future; 17.8% were not current users of family planning and did not intend to use a method in the future.
- Maternal health
    - Less than half (42.0%) of women reported receiving any PNC in the past six months.
    - Among women with any PNC in the past six months, about two in five (46.7%) reported that their children's weight was measured at PNC; fewer than one-third reported that their children's MUAC (27.5%) and height (15.3%) were measured at PNC.
    - Roughly one in five women received information on family planning during non-immunization (17.9%) and immunization health checks (16.9%), respectively.
- Child health

    - The majority of children approximately 12 months old were given breast milk (97.1%) and grains, roots, and tuber foods (95.6%) in the last 24 hours. One in five (22.0%) children met the minimum dietary diversity criteria.
    - One in three (29.5%) children received all 13 vaccines (BGC, polio 1-3, pentavalent 1-3, PCV 1-3, Rota 1-2, and measles vaccine), while one in ten (9.7%) children received no vaccination.
- Continuum of Care:
    - Despite better coverage for individual services, fewer than one in five (14%) women completed all four key maternal and child health care services in the first year postpartum.
    - There was significant variation in service utilization at the regional level, with the majority of respondents from Addis Ababa (77.2%) having received all four maternal and child health services relative to 19.6% of respondents in SNNP.

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Introduction and Survey Methodology

Performance Monitoring for Action Ethiopia (PMA Ethiopia) builds upon the previous success of the Performance Monitoring and Accountability 2020 (PMA2020)/Ethiopia survey, conducted between 2013 and 2018, and the PMA Maternal and Newborn Health (MNH) survey, conducted in the Southern Nations, Nationalities, and People's (SNNP) region between 2016 and 2017. PMA Ethiopia, a five-year project launched in 2018, features an enhanced topical scope, moving beyond the family planning indicators captured in the PMA2020 surveys to include MNH indicators, expands geographically to provide greater regional representation, and broadens its survey methodology to include both cross-sectional and longitudinal data collection.

This report summarizes **one-year** postpartum data collected from women who participated in the second cohort of PMA Ethiopia, summarizing their experiences related to postnatal care (PNC), newborn care, and postpartum sexual and reproductive health.

Research Objectives

The PMA Ethiopia study:

- Monitors the use of proven, effective, and cost-effective interventions and the practice of healthy behaviors aimed at reducing maternal and newborn mortality in Ethiopia using priority indicators identified by the Ethiopian Federal Ministry of Health (FMoH) and the Bill and Melinda Gates Foundation (BMGF).
- Identifies factors associated with the use of Reproductive, Maternal and Newborn Health (RMNH) services, including individual, partner, and community influences.
- Develops and validates measures of reproductive empowerment, fertility intentions, and community norms that are hypothesized to be associated with the use of health services.

Methods

PMA Ethiopia features cross-sectional and longitudinal data collection in three large, predominantly agrarian regions (Oromia, Amhara, and SNNP), and one urban region (Addis Ababa) and annual cross-sectional data collection in the remaining regions with the exception of Tigray. Data collection in Tigray was suspended from November 2020 to November 2023 due to security concerns. The three data collection activities featured by PMA Ethiopia include:

- A longitudinal survey that follows eligible women at six-week, six-month, and one-year postpartum after screening and enrollment in panel regions.
- A national cross-sectional survey administered to 35 randomly selected households in each enumeration area, annually.
- The Service Delivery Point (SDP), or health facility survey, conducted at selected health facilities annually in both panel and cross-sectional regions.

This report presents results from the second cohort's one-year postpartum survey of the PMA Ethiopia panel. Findings from the baseline, six-week, six-month, and SDP surveys have been previously published (https://www.pmadata.org/countries/ethiopia). Cross-sectional results can be found in various briefs (https://www.pmadata.org/countries/ethiopia) and on the PMA data visualization platform, DataLab (datalab.pmadata.org).

Sampling

PMA Ethiopia employed a multi-stage stratified cluster sampling, where households were selected in sampled clusters or enumeration areas (EAs). EAs were selected with probability proportional to size within strata. For Amhara, Oromia, and SNNP, strata were defined by both region and urban/rural residence. For the remaining regions, regions served as the strata, without additional urban/rural stratification.

Within panel regions, a census of all households was conducted. From the census, enumerators identified all women who were age 15-49 and regular members of the household. Women were screened and those who reported being pregnant or having given birth in the past six weeks were eligible for the survey. Those who were able and willing to give consent were enrolled into the study.

Original sample size calculations

To arrive at the required sample size, PMA Ethiopia used previous data from PMA2020 surveys to estimate point prevalence of modern Contraceptive Prevalence Rate (mCPR), design effect, and non-response. The 217 EAs required for the panel were sufficient to achieve regional estimates of mCPR with the desired 5% margin-of-error in all panel regions and were distributed across the regions based on the anticipated mCPR. Across the remaining non-panel regions, we estimated that an additional 81 EAs were needed to estimate mCPR with a 5% margin of error. Based on anticipated fertility across the original six panel regions, we estimated that we would enroll approximately 2,800 women into the panel. Additional information on the cross-section and SDP surveys, and additional information on sampling, including sample size calculations, is available from Zimmerman 2020.[1]

Updates in 2021

Data collection was undertaken in the original EAs selected for Cohort 1 in Addis, Amhara, and Oromia. With the creation of the Sidama region in 2020 from within the SNNP region, eight EAs were removed from the panel, as they were located in the new Sidama region. With the removal of Tigray, Afar, and the eight EAs in the original SNNP, the final EA sample size for the second cohort was 162 EAs.

[1] Zimmerman L, Desta S, Yihdego M et al. (2020) "Protocol for PMA-Ethiopia: A new data source for cross-sectional and longitudinal data of reproductive, maternal, and newborn health" [version 1; peer review: awaiting peer review]. Gates Open Research, 4:126 https://doi.org/10.12688/gatesopenres.13161.1

Adjustments to the samples in Afar, Tigray, and SNNP do not affect regional estimates of the other regions, which are directly comparable across the two cohorts. The Ethiopian Statistical Services (formally Central Statistics Agency) provided updated population counts (measure of size) of the SNNP region to allow for post-estimation adjustment to the design weights, accounting for the reduced size of the SNNPR region and for minor changes to the urban and rural distribution within the region. Due largely to the exclusion of Tigray and Afar, however, national estimates between Cohort 1 and Cohort 2 are not directly comparable. Design weights, however, were used to generate representative estimates of the combined population of Addis, Amhara, Oromia, and the SNNP region as of 2021, which together represent approximately 68.5%[2] of the population of Ethiopia.

Questionnaire

For the one-year postpartum interview, enumerators administered a survey that collected information on key MNH services, including receipt, timing, and specific components of postnatal care (PNC), newborn nutrition, immunization, illness, and care-seeking, and utilization of sexual and reproductive health services. Women's sociodemographic characteristics including age, education, region, parity, residence, household wealth, migration status, fertility preferences, and birth histories were matched from the baseline interview. To minimize recall bias, information on number of months postpartum/child age at interview was calculated using the date of delivery as reported in the six-week interview, and when unavailable, using the reported delivery date in the six-month and one-year interview.

Survey Implementation and Participants

Training for data collection for the six-month interview took place in February 2022. Data collection occurred between September 2022 and September 2023.

As shown in Figure 1, a total of 1,858 women completed the one-year interview. Due to a myriad of reasons, 132 expected interviews were not conducted. Reasons for incomplete interviews included that the respondent or household moved (n=76), was not at home (n=24), was absent indefinitely (n=12), refused (n=10), or whose interview was postponed past the allotted window of two weeks past the one-year postpartum period (n=7). In addition there was one partially completed interview, one respondent died, and one respondent was incapacitated and could not participate in the survey.

The analytic sample is comprised of 1,858 women aged 15-49 who provided complete one-year postpartum survey data. These women gave birth to a total of 1,831 live births – 1,822 (99.5%) of which were still living at time of the one-year interview. Children-level analyses included in this report were restricted to all children still living at the time of the interview (1,822 out of 1,831 live births).

[2] https://www.statsethiopia.gov.et/wp-content/uploads/2023/08/Population-of-Zones-and-Weredas-Projected-as-of-July-2023.pdf

Response Rate and Mean Time to Interview

Table 1 shows the response rate from the one-year postpartum interview of the second PMA Ethiopia cohort. Among a total of 1,990 eligible women, 1,858 women completed the one-year interview, yielding an overall response rate of 93.4%. On average, women completed the one-year postpartum interview when they were 12.0 months postpartum.

Interpretation of Sampling Weights

In the PMA Ethiopia panel survey, the initial sample "first cohort" was designed to represent all pregnant or recently postpartum women ages 15-49 in the six regions "Addis, Afar, Amhara, Oromia, SNNP, Tigray" in which the survey was conducted. However, due to security concerns and not to exceed study's budget, the panel survey was restricted to four available regions, reducing the overall number of enumeration areas, for the second cohort. Thus, the interpretation of the weights is slightly different: estimates of Cohort 1 were representative of women across the six regions, while estimates of Cohort 2 are representative of women across the four regions.

To make results meaningful in less populated geographical areas, the sample also needed to be representative at regional levels, which required oversampling of the smaller regions. The rationale for this is that, as the population in Ethiopia is not evenly distributed, drawing random samples across the entire country would result in less-populated regions being less likely to be selected, and therefore not having sufficient sample size for regional estimates.

The number of women who needed to be interviewed from each region was determined by statisticians at PMA Ethiopia. To generate statistics that are representative of Ethiopia's population, sample weights were introduced. Sample weights were constructed based on the selection probabilities of the EAs provided by the Ethiopian Statistical Service "ESS". After data collection for the baseline survey was complete, two weights – household and female – were created to adjust for selection probability and non-response. As noted, post-stratification adjustments were made to the original SNNP probabilities to account for the differential population count between SNNP before and after the creation of the Sidama region.

As all households were included in the census, there was no additional selection probability of households; thus, the household weight was the inverse of the EA selection probability and the response rate to the census within the EA. Female weights for women in the panel were adjusted for non-response within the EA, and six-week postpartum survey weight has adjusted for loss to follow-up from the baseline panel survey sample. Application of the PMA Ethiopia household and female survey weights for the panel survey result in a sample that is representative of all households with pregnant or recently postpartum women and all pregnant or recently postpartum women age 15–49 residing in the four regions included in the PMA Ethiopia panel, respectively.

One-year postpartum weights were calculated using the unnormalized baseline weight, adjusted for the inverse probability of completing the one-year postpartum survey. The log odds of having

completed the one-year postpartum survey was modeled as a linear combination of age, education, marital status, wealth, and residence at baseline.

With this sampling and weighting strategy, PMA Ethiopia was able to interview the minimum number of women per EA and achieve a sample that was representative on both national and regional levels. Because of this representativeness, only weighted results will be presented.

Figure 1. One-year postpartum interview enrollment flowchart

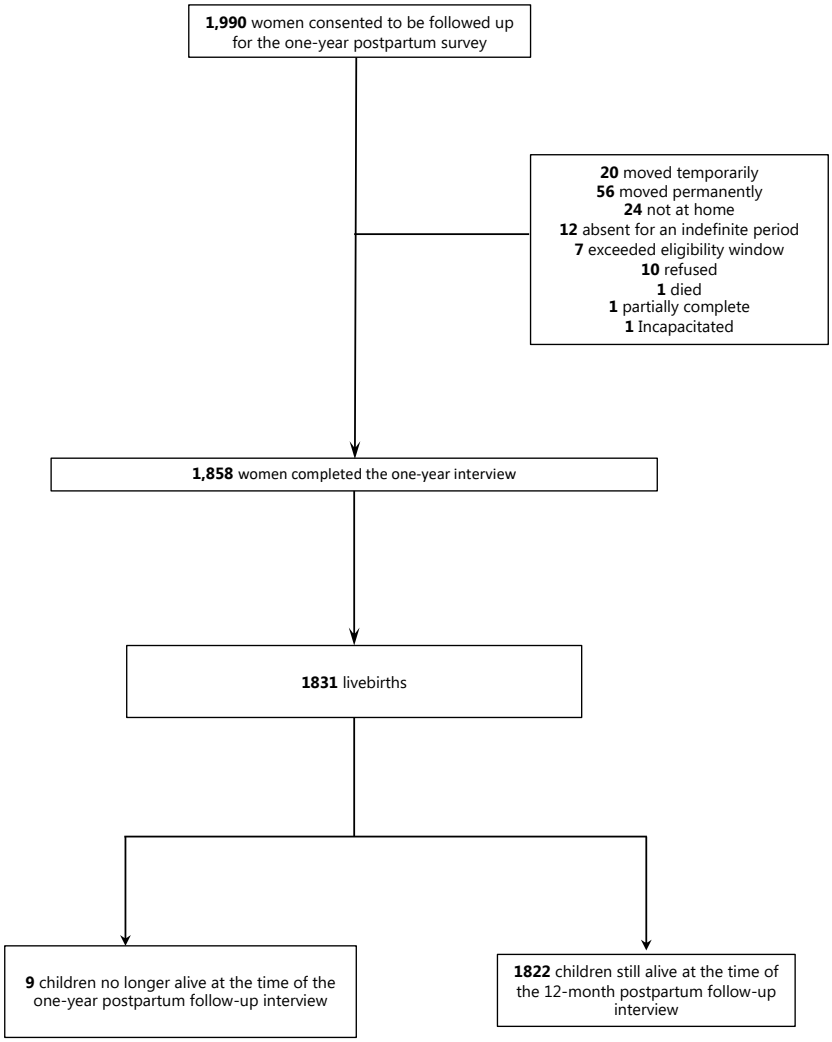


Table 1. One-year postpartum interview response rate and mean time to interview

Response Rate	
Number of eligible women	1,990
Number of eligible women who completed the interview	1,858
One-year interview response rate	93.4
Number of months postpartum	
Mean (sd)	12.0
Number of women	1,858

Characteristics of Respondents

The sociodemographic characteristics of the overall sample are presented in Table 2. These data were collected from women during the baseline survey and matched with their one-year survey responses. Of note, parity does not include the index "most recent" pregnancy. Characteristics of most recently born child are presented in Table 3.

Age: On average, women who completed the one-year interview were 27 years old. Nearly one-third (28.7%) of respondents were between the ages of 25-29 and 13.0% were aged 15-19 years.

Education: A third (31.4%) of women had no formal education, and nearly half had ever attended primary school (46.1%). Approximately one in seven (14.5%) women attended secondary education. Fewer than one in ten (8.0%) women attended any formal education beyond secondary education (technical & vocational or higher education).

Parity: About one in seven (14.3%) women had no children before they participated in the panel survey. More than a third of respondents (44.1%) had 1-2 children; about equal proportions had 3-4 (22.7%) or 5+ children (18.9%), not including the index pregnancy.

Region: Respondents were enrolled from four regions in Ethiopia. The largest proportion of respondents lived in Oromia (52.2%), followed by SNNP (22.8%) and Amhara (20.3%) regions, while smaller proportions of women were from Addis Ababa (4.7%).

Residence: The vast majority (75.3%) of women lived in rural areas, with fewer than one-quarter (24.7%) of respondents from urban areas.

Table 2. Background characteristics of respondents

Percent distribution of respondents by selected background characteristics, PMA Ethiopia 2021-2023 Cohort			
Background characteristics	Weighted percent	Weighted N	Unweighted N
Age			
15-19	13.0	242	183
20-24	23.7	441	433
25-29	28.5	529	572
30-34	19.0	354	381
35-39	11.8	219	231
40-49	4.0	74	58
Education			
No education	31.4	583	500
Primary	46.1	856	798
Secondary	14.5	270	316
More than secondary	8.0	149	244
Parity			
0 children	14.3	264	285
1-2 children	44.1	813	879
3-4 children	22.7	419	384
5+ children	18.9	348	296
Region			
Amhara	20.3	378	401
Oromia	52.2	971	660
SNNP	22.8	423	535
Addis Ababa	4.7	87	262
Residence			
Rural	75.3	1,400	1,072
Urban	24.7	458	786
Wealth			
Lowest quintile	20.0	371	290
Lower quintile	19.8	367	286
Middle quintile	20.0	371	298
Higher quintile	20.1	374	356
Highest quintile	20.2	375	628
Overall	**100.0**	**1,858**	**1,858**

**Notes:* 1. Background characteristics are obtained from the baseline interview.

Table 3. Background characteristics of children from most recent pregnancy

Percent distribution of mother's selected background characteristics, among children still alive at time of the 1-year interview, PMA Ethiopia 2021-2023 Cohort			
Background characteristics	Weighted percent	Weighted N	Unweighted N
Mother's Age			
15-19	12.8	232	175
20-24	23.9	436	425
25-29	28.7	522	565
30-34	19.1	349	376
35-39	11.6	212	225
40-49	3.9	70	56
Mother's Education			
No education	30.9	563	487
Primary	46.3	843	784
Secondary	14.6	266	310
More than secondary	8.2	150	241
Mother's parity			
0 children	14.1	255	276
1-2 children	44.4	802	864
3-4 children	22.7	411	379
5+ children	18.8	339	289
Region			
Amhara	20.8	379	399
Oromia	51.6	940	639
SNNP	22.9	417	527
Addis Ababa	4.7	86	257
Residence			
Rural	75.2	1,370	1,050
Urban	24.8	452	772
Wealth			
Lowest quintile	19.7	359	282
Lower quintile	19.6	357	277
Middle quintile	19.9	362	291
Higher quintile	20.6	376	357
Highest quintile	20.2	369	615
Overall	**100.0**	**1,822**	**1,822**

**Notes:* 1. Background characteristics are obtained from the baseline interview.

Sexual and Reproductive Health

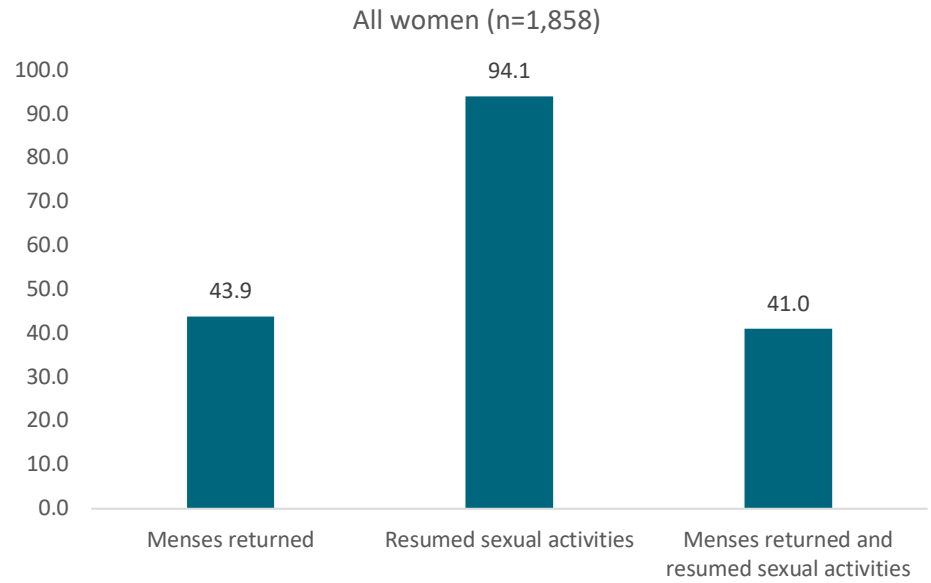
Return of Menses and Sexual Activity

Definition: Women were asked whether their menses had returned since their most recent pregnancy and whether they had resumed sexual activity. Women who reported being pregnant at the one-year postpartum interview were considered to have resumed sexual activity. Table 4 presents the proportion of women who reported that their menses had returned, resumed sexual activity, and both, by background characteristics.

Key findings:

- Roughly 43.9% of women reported that their menses had returned at time of the one-year postpartum interview Figure 2 and Table 4.
- Over ninety percent 94.1% of women had resumed sexual activity.
- Less than half 41.0% of women reported that they had resumed sexual activity and that their menses returned.

Figure 2. Return of menses and resumption of sexual activities



Reproductive patterns by background characteristics:

- **Age:** The proportion of women indicating a return to menstruation ranged from nearly three in five 52.9% in those aged 15-19 to fewer than one in three in those aged 40-49 31.6%.

- **Education:** The proportion of women who resumed sexual activity and indicated their menses had returned increased with education. Approximately one-third of women with no education (29.9%) and three-fourths of women with more than secondary education (65.2%) resumed sexual activity with returned menses.
- **Parity:** Women who had no prior children constituted the highest percentage of those who resumed sexual activity upon the return of menses (61.4%), while women with five or more children had the lowest percentage (26.6%).
- **Region:** Nearly three in four (77.0%) women in Addis Ababa, compared to fewer than two in five women in Amhara (37.4%), indicated that they had resumed sexual activity in addition to the return of their menses.
- **Residence:** The proportions of women who resumed sexual activity were similar between women living in urban and rural areas (95.6% and 93.6%, respectively). More than one-third (35.0%) of women in rural areas and nearly two-thirds (59.1%) of women in urban areas reported that their menses had returned and that they have resumed sexual activity since the most recent pregnancy.
- **Wealth:** While about the same proportions of women in all wealth quintiles reported resuming sexual activity (88.9%-96.1%), a higher proportion of wealthier women (63.8%). indicated the return of menses by one year relative to the poorest women (28.8%).

Table 4. Return of menses and resumption of sexual activities, by background characteristics

Percentage of women approximately one year postpartum whose menses returned, resumed sexual activities since delivery by the date of interview, by background characteristics, PMA Ethiopia 2021-2023 Cohort				
Background characteristics	Menses returned	Resumed sexual activities	Menses returned and resumed sexual activities	Number of women (weighted)
Overall	**43.9**	**94.1**	**41.0**	**1,858**
Age				
15-19	52.9	91.5	49.4	242
20-24	49.0	94.1	45.6	441
25-29	45.2	95.1	42.6	529
30-34	36.4	94.6	33.9	354
35-39	36.8	94.0	35.0	219
40-49	31.6	93.2	26.3	74
Education				
No education	33.8	92.7	29.9	583
Primary	42.5	93.6	39.8	856
Secondary	57.6	96.7	55.3	270
More than secondary	66.6	97.5	65.2	149
Parity				
0 children	64.0	93.9	61.4	264
1-2 children	51.0	92.7	47.1	813
3-4 children	29.4	96.0	27.8	419
5+ children	29.1	94.9	26.6	348
Region				
Amhara	40.9	92.7	37.4	378
Oromia	44.6	94.8	41.5	971
SNNP	37.6	93.3	35.5	423
Addis Ababa	79.6	96.1	77.0	87
Residence				
Rural	38.1	93.6	35.0	1,400
Urban	61.6	95.6	59.1	458
Wealth				
Lowest quintile	28.8	88.9	23.4	371
Lower quintile	36.0	93.6	33.2	367
Middle quintile	40.4	96.1	38.8	371
Higher quintile	50.2	96.1	47.7	374
Highest quintile	63.8	95.6	61.5	375

Contraceptive Use and Method Type

Definition: Women who were current contraceptive users reported the type of method they were using. Women who were pregnant at the time of the one-year interview were considered non-users (n=53). Figure 3 (right panel) presents the method distribution (ranked by effectiveness) among all current users. Table 5 shows the percentage of women who were not using any method, using a short-acting method, long-acting method, and traditional method, by background characteristics.

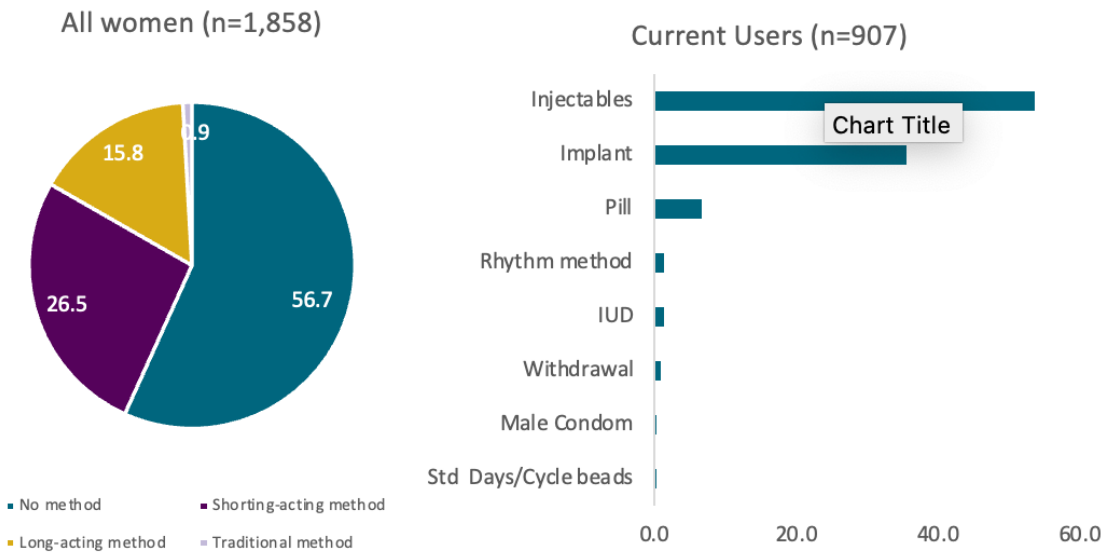
- Shorting-acting methods: injectables, pills, emergency contraception, male condom, and standard days/cycle beads.
- Long-acting and permanent methods: female sterilization, implant, and IUD
- Traditional methods: rhythm method and withdrawal

Key findings:

- Over half of women (56.7%) were not using a family planning method at the time of the one-year postpartum interview (Figure 3 and Table 5).
- Among all current users, the most common method of FP was injectables (53.2%), followed by implant (35.3%), and contraceptive pills (6.7%).

Figure 3. Family planning use and method type

Family planning method type patterns by background characteristics:



- **Age:** The proportion of women using a long-acting method declined with age, with women aged 25-29 having the greatest proportion of long-acting method use (18.1%). The percentage of non-users ranged from 50.6% among women aged 15-19 to 70.8% among women aged 40-49.
- **Education:** The majority of women with more than a secondary education were using a contraceptive method (63.5%), while fewer than one-third of women with no education were (28.8%). Fewer women with no education were using a long-acting method (9.7%), compared to 28.1% of women with more than secondary education.
- **Parity:** Among primiparous women, nearly two in five were not using any contraceptive method (40.8%), 37.3% were using a short-acting method, and 21.1% were using a long-acting method.
- **Region:** Over half of women in Addis Ababa were using a short-acting method (34.8%), compared to 20.4% in SNNP. The proportion of non-users ranged from 22.5% in Addis Ababa to 60.4% in Oromia.
- **Residence:** Nearly two-thirds of women in rural areas were not using any contraceptive method (62.3%), compared to two in five women living in urban areas (39.8%). A greater proportion of women in urban areas were using long-acting methods (22.9%), compared to women living in rural areas (13.5%).
- **Wealth:** The proportion of women not using any contraceptive method decreased with increasing wealth (74.1% of the poorest women compared to 36.5% of the wealthiest). Conversely, the percentage of women using short-acting (16.2%-33.8%) and long-acting methods (9.7%-25.2%) increased by wealth quintile.

Table 5. Use of family planning, by background characteristics

Among women approximately one year postpartum, the percentage distribution of those using no method, short-acting, long-acting, and traditional method, by background characteristics, PMA Ethiopia 2021-2023 Cohort						
Background characteristics	No method	Short-acting method	Long-acting method	Traditional method	Any Method	Number of women (weighted)
Overall	**56.7**	**26.1**	**15.8**	**0.9**	**43.3**	**1,858**
Age						
15-19	50.6	31.8	17.6	0.0	49.4	242
20-24	51.9	30.4	17.0	0.4	48.1	441
25-29	51.1	29.2	18.1	1.2	48.9	529
30-34	65.4	19.9	13.4	0.4	34.6	354
35-39	68.1	17.4	11.0	3.3	31.9	219
40-49	70.8	15.6	13.5	0.0	29.2	74
Education						
No education	72.2	17.8	9.7	0.2	27.8	583
Primary	55.7	27.2	15.9	0.7	44.3	856
Secondary	37.9	38.6	22.0	0.3	62.1	270
More than secondary	36.0	29.8	28.1	5.8	64.0	149
Parity						
0 children	40.3	39.4	21.1	1.2	58.8	264
1-2 children	48.5	29.8	19.7	1.3	51.9	813
3-4 children	65.0	20.6	13.4	0.1	34.7	419
5+ children	79.2	13.6	5.9	0.8	20.5	348
Region						
Amhara	53.2	34.2	12.4	0.2	46.8	378
Oromia	60.4	24.7	13.7	0.6	39.6	971
SNNP	58.6	20.4	19.7	1.1	41.4	423
Addis Ababa	22.5	34.8	35.9	6.4	77.5	87
Residence						
Rural	62.3	23.4	13.5	0.4	37.7	1,400
Urban	39.8	34.4	22.9	2.3	60.2	458
Wealth						
Lowest quintile	74.1	16.2	9.7	0.0	26.0	371
Lower quintile	61.8	24.4	13.3	0.0	38.2	367
Middle quintile	62.7	23.7	13.0	0.0	37.3	371
Higher quintile	48.9	32.5	17.9	0.7	51.1	374
Highest quintile	36.5	33.8	25.2	3.8	63.5	375

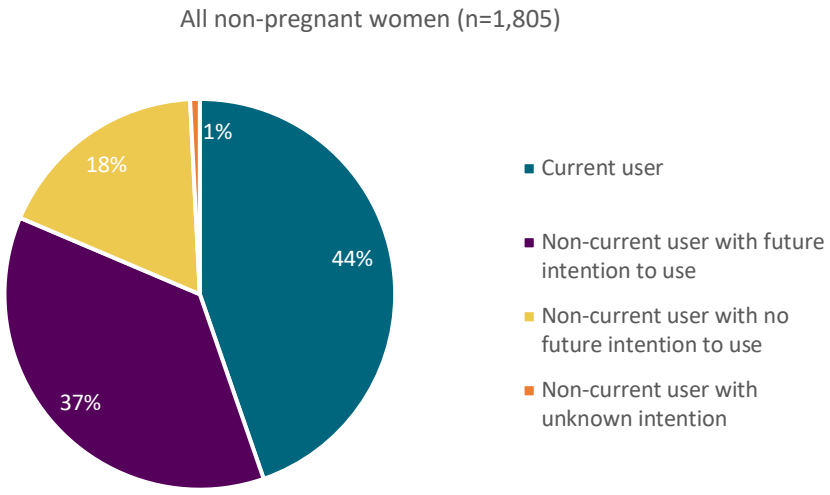
Future Intention to Use Contraception

Definition: Women who were not currently using a method at the time of the one-year interview were asked whether they planned to use a contraceptive method in the future. We combined women's current use of contraception with their intentions to use to explore women's contraceptive needs and desires across four categories: current users; non-users with future intentions to use; non-users with no future intentions to use; and non-users with unknown future intentions. Women who answered "do not know" or did not respond to the future intention question were defined to have "unknown intention". Of note, 53 women reported being currently pregnant at the one-year interview.

Key findings:

- Over two in five women (44.5%) were using a family planning method at the time of the one-year postpartum interview (Figure 4 and Table 6).
- Among all (non-pregnant) women, 36.7% were not current users of FP, but intended to use FP in the future; 17.8% were not current users of FP and did not intend to use FP in the future; 0.8% were non-users and were not sure about future intention.

Figure 4. Future family planning use intention



Contraceptive intention patterns by background characteristics:

- **Age:** About half of women (49.3%) ages 20-24 were using a method of FP at one year postpartum, compared to a third of women ages 40-49 (29.2%). Roughly one third women

ages 15-19 (31.9%) were not using FP and intended to use in the future, compared to nearly two in five women ages 40-49 (37.1%).

- **Education:** The proportion of current contraceptive users increased with education, ranging from 28.8% among women with no education to 66.3% among women with more than secondary education. One-third (30.6%) of women with no education were not using contraception at one year postpartum and reported they did not intend to use it in the future; compared to 7.8% of women with more than secondary education.
- **Parity:** Two-thirds of women who were nulliparous at enrollment were current users of contraception (63.9%), compared to one in five women with five or more children at enrollment (21.4%). Among women who were nulliparous at enrollment, 12.6% were not using a method of contraception and did not intend to use it in the future. Almost one-third of women with five or more children at enrollment were not using contraception at one year postpartum and did not intend to use it in the future (27.4%).
- **Region:** The proportion of women using contraception at one year postpartum ranged from 41.2% in Oromia to 80.1% in Addis Ababa. A very small proportion of women in Addis Ababa were non-users with no intention to use FP in the future (6.2%), compared to 21.6% in SNNP.
- **Residence:** The proportion of women living in rural areas who were not using FP at one year postpartum but intended to use a method in the future (40.2%) was greater than women living in urban areas (26.3%). Nearly one-fourth of women in rural areas were not using contraception and did not intend to use it in the future (20.0%) compared to approximately one in ten women in urban areas (11.3%).
- **Wealth:** The proportion of women who were using any contraception at one year postpartum was highest among women in the highest wealth quintile (65.1%) and lowest among the lowest wealth quintile (26.7%). One-third of women in the lowest quintile were non-users with no future intention to use (32.1%), compared to only 8.6% among the wealthiest women.

Table 6. Family planning intention, by background characteristics

Among women who were approximately one year postpartum and not pregnant, the percent distribution of those who were currently using family planning, not currently using with future intention to use, not currently using with no future intention to use, and not currently using and not sure about future intention at the time of the survey, by background characteristics PMA Ethiopia 2021-2023 Cohort

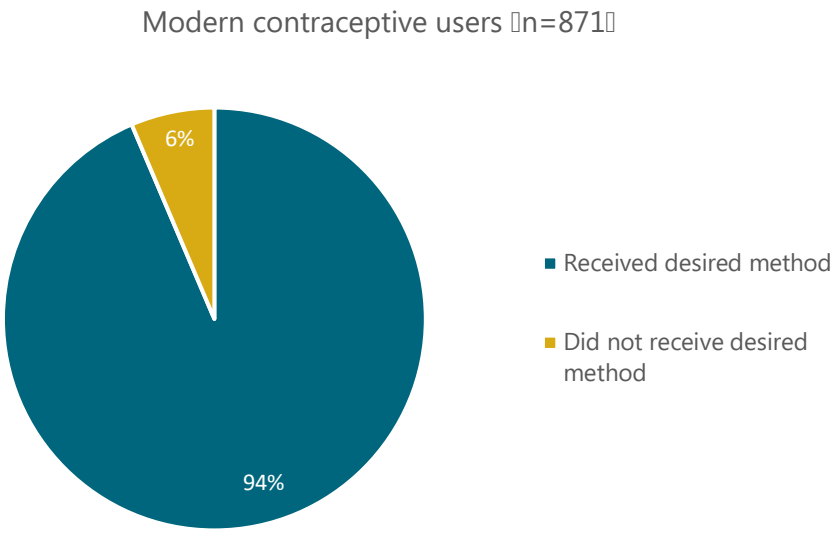
Background characteristics	Current user	Non-current user with future intention to use	Non-current user with no future intention to use	Non-current user with unknown intention	Number of women weighted*
Overall	**44.5**	**36.7**	**17.8**	**0.8**	**1,805**
Age					
15-19	52.0	31.9	15.2	0.9	230
20-24	49.3	36.6	12.7	1.2	430
25-29	50.2	34.4	14.6	0.5	514
30-34	350	41.9	21.9	0.6	345
35-39	330	39.3	26.5	1.1	211
40-49	29.2	37.1	33.8	0.0	74
Education					
No education	28.8	39.8	30.6	0.9	565
Primary	45.4	39.3	14.0	1.0	833
Secondary	63.5	28.3	7.8	0.0	263
More than secondary	66.2	25.2	7.8	0.7	145
Parity					
0 children	64.1	23.6	12.6	0.0	242
1-2 children	52.7	33.7	12.5	0.9	796
3-4 children	35.3	39.6	23.8	0.5	412
5+ children	21.0	50.1	27.4	1.1	339
Region					
Amhara	47.4	37.6	14.8	0.2	374
Oromia	40.9	39.2	18.3	1.2	935
SNNP	42.6	35.3	21.6	0.3	411
Addis Ababa	80.0	12.1	6.2	1.7	84
Residence					
Rural	38.9	40.2	20.0	0.8	1,356
Urban	61.4	26.3	11.3	0.8	449
Wealth					
Lowest quintile	26.7	40.2	32.1	1.0	361
Lower quintile	39.4	42.5	16.7	1.1	354
Middle quintile	38.4	41.8	19.0	0.4	358
Higher quintile	52.4	33.5	12.8	1.3	365
Highest quintile	64.9	26.0	8.6	0.3	367

Desired Contraceptive Method Obtained

Definition: Current users of female sterilization, implant, IUD, pills, injectables, male condoms, emergency contraception, and standard days method were asked whether they obtained the method they desired to delay or avoid getting pregnant. The percent distribution of women who obtained their desired contraceptive method, by background characteristics, is not presented due to lack of variation.

Key findings: The majority of contraceptive users one year postpartum (93.6%) obtained the contraceptive method they desired (Figure 5).

Figure 5. Desired family planning method obtained



Reasons for Choosing Current Method

Definition: All women currently using contraception were asked why they had chosen their current method. Respondents were able to list more than one reason; unprompted responses were coded into the following categories: long duration of protection, less need for follow-up, unavailability of other methods, provider recommended, fewer side effects, can use without partner's knowledge, and other. The percentages of women indicating each reason, by short and long-acting method users, are presented in Table 7. Reasons for choosing the current method, by background characteristics, are not presented due to little variation.

Key findings:

- Among long-acting method users, the most common reason for choosing the method was long duration of protection (77.7 %), followed by less need for follow-up (47.1%), and fewer side effects than other methods (23.4%)
- Users of a short-acting method most commonly reported fewer side effects compared to other methods as the reason for choosing their current method (53.7%), followed by less need for follow-up (37.2%), and long duration of protection (14.4%).

Table 7. Reasons for choosing current method

Among women approximately one year postpartum who were currently using a modern method of family planning at the time of the survey, the percentage distribution of reported reasons for choosing the method, by method type, PMA Ethiopia 2021-2023 Cohort

	Long-acting methods users	Shorting-acting methods users
Long duration of protection	77.7	14.4
Less need for follow-up	47.1	37.2
Unavailability of other methods	7.2	4.8
Provider recommended	16.1	5.9
Fewer side effects than other methods	23.4	53.7
Can use without husband's knowledge	0.9	1.5
Other	1.6	8.6
Number of women	**357**	**521**

**Note*: Column percentages presented.

Reasons for Not Using Contraception

Definition: Women who were not using any contraceptive method at the time of the one-year postpartum interview were asked why they decided not to use contraception. Interviewers grouped unprompted responses into one or more of the following themes: worried about side effects, currently breastfeeding, contraception might make getting pregnant again difficult, menstruation had not returned, infrequent/no sex or prefers abstinence, wants to become pregnant, religious prohibition, partner disapproved, desired method not available, and other. Women could select more than one reason for the non-use of contraception. The percent distribution of reasons is presented in Table 8. Stratified results by background characteristics are not presented due to lack of variation.

Key findings:

- Over half of non-users reported they were not using contraception because their menstrual cycle had not returned (59.2 %).
- One in five non-users reported they were worried about side effects (16.4%).
- Roughly one in six women (16.1%) indicated they were not using contraception due to religious prohibitions or partner disapproval.
- Less than 2% of non-users reported they were not using contraception due to lack of availability of their desired method (1.2%) and few non-users reported they did not use contraception because they wanted to become pregnant (6.5%).

Table 8. Reasons for not using family planning

Among women approximately one year postpartum who have not used any family planning since delivery, the percentage distribution of reported reasons for not using any method, PMA Ethiopia 2021-2023 Cohort	
	Percent
Has not resumed menstruation	59.2
Worried about side effects	16.4
Religious prohibition or partner disapproves	16.1
Currently breastfeeding	12.3
No/infrequent sex or prefers abstinence	12.2
Other	5.4
Wants to become pregnant	6.5
FP might make getting pregnant again difficult	2.4
Do not know enough about family planning	1.7
Desired method not available	1.2
Number of non-current users	**866**

**Note*: Column percentages presented.

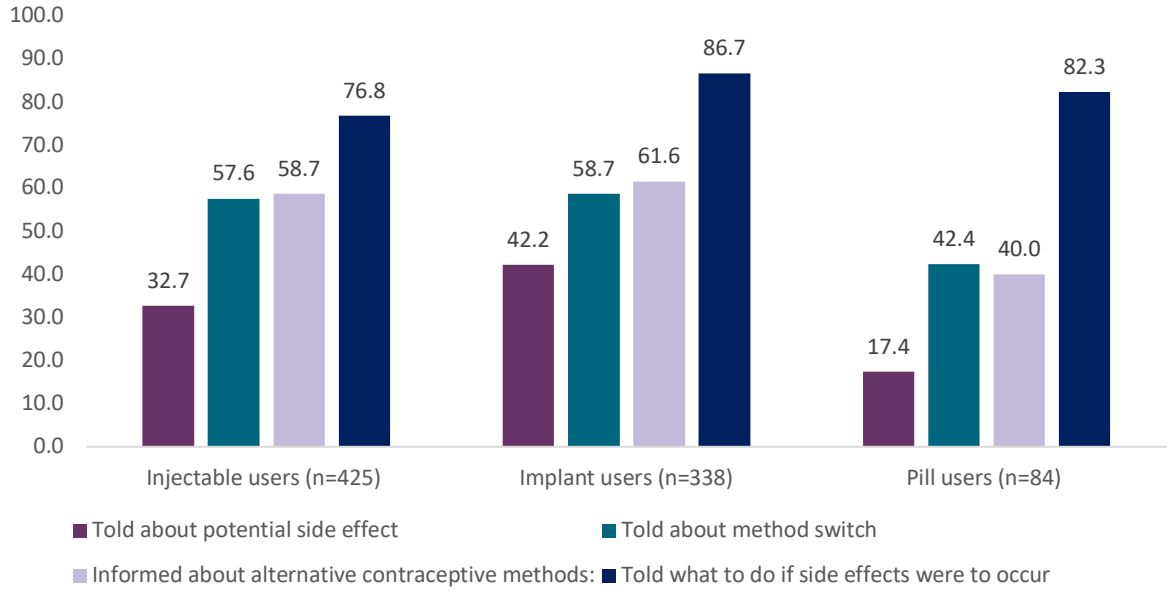
Contraceptive Counseling

Definition: All current users of modern contraception, other than female and male sterilization, were asked whether they were informed about potential side effects, informed about what to do if they experienced side effects, told about other methods, and whether they were told that they could switch to a different method. The proportions of women who responded "yes" to each of these four questions, among injectable, implant, and pill users, are shown in Figure 6. Estimates of provider bias in contraceptive counseling among users of other contraceptive methods are not presented due to limitations in sample size.

Key findings:

- Nearly three-fifths of all injectable users were told they could switch methods (57.6 %) but only one-third were told about potential side effects (32.7%).
- More than half of all implant users (58.7%) were told they could switch to a different method; two in five were told about potential side effects (42.2%).
- While two-fifths of pill users were told they could switch methods (42.4%), fewer were told about potential side effects (17.4%).

Figure 6. Family planning counseling



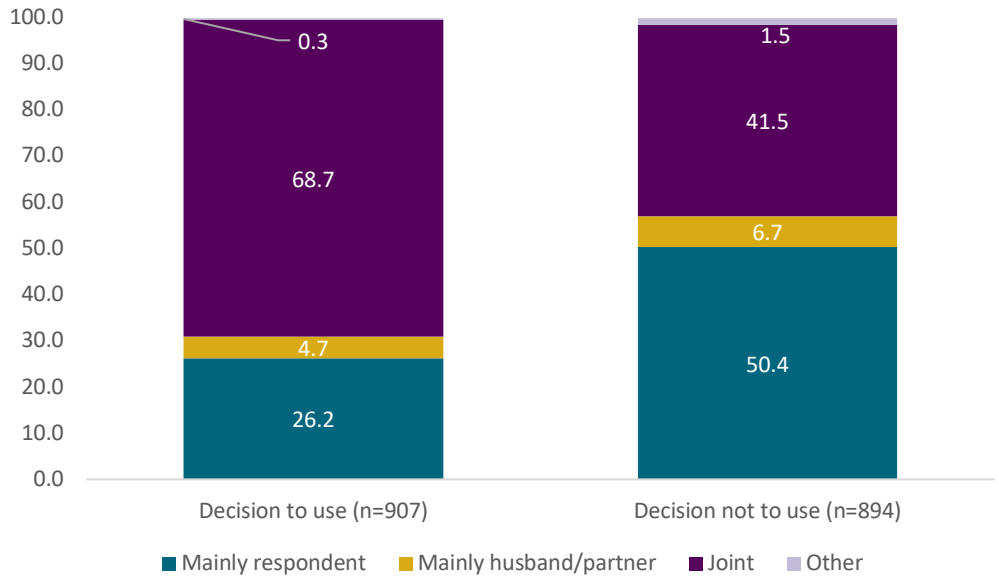
Decision-making for Contraception

Definition: All women currently using contraception were asked whether they had discussed their decision to use contraception with their partner before use. The proportion of respondents indicating that they discussed their decision to use contraception with their partner before use, by background characteristics, is presented in Table 9. Additionally, both current users and non-users were asked whether their decision to use/not to use contraception was mainly hers, her partner's, a joint decision, or other. The distribution of contraceptive decision categories, by current and non-current users, is presented in Figure 7.

Key findings:

- The majority of women using contraception discussed their decision with their partner before method initiation (85.9%; Table 9).
- Among current users, the majority (68.7%) indicated that their decision to use contraception was a joint decision; 4.7% reported the decision was mainly their partner's, and 26.2% indicated the decision was mainly theirs.
- Among non-users, half (50.4%) decided not to use contraception by herself; two in five non-users decided jointly with her partner (41.5%); less than one in ten (6.7%) indicated the decision to not use contraception was mainly her partner's.

Figure 7. Family planning decisions



Decision-making for family planning patterns by background characteristics:

- **Age:** The majority of women of all ages discussed their decision to use contraception with their partner before use. The proportion of respondents who discussed their contraceptive decision with their partner before use was the highest among women aged 15-19 (88.9%) and lowest among women aged 35-39 years old (70.4%).
- **Education:** The proportion of women using any contraceptive method, who discussed their decision with their partner before use increased with increasing education. Nearly three-fourths of women with no education discussed their decision with their partner (72.3%); 96.9% of women with more than secondary education discussed their decision to use contraception with their partner.
- **Parity:** With increasing parity, a decreasing proportion of respondents using any contraceptive method discussed use with their partner before method initiation, with 92.9% of women with no prior children at enrollment and 68.9% of women with five or more children at enrollment indicating they discussed their decision with their partner.
- **Region:** More than three-fourths of women in all regions discussed their decision to use contraception with their partner, with the greatest proportion living in Addis Ababa (89.0%).
- **Residence:** Approximately nine out of ten (87.8%) of urban women and 84.4% of rural women discussed their decision to use contraception with their partner.
- **Wealth:** The proportion of women involving their partners in their contraceptive decision ranged from 76.6% among the poorest women to 91.7% among the wealthiest women.

Table 9. Family planning discussion, by background characteristics

Among all women approximately one year postpartum who were using any family planning (FP) method, the percentage distribution of those who discussed their decision to use FP with their partner before use, by background characteristics, PMA Ethiopia 2021-2023 Cohort

Background characteristics	Percent	Number of women (weighted)
Overall	**85.6**	**907**
Age		
15-19	88.9	135
20-24	88.7	239
25-29	87.6	292
30-34	81.3	138
35-39	70.4	79
40-49	*	24
Education		
No education	72.3	183
Primary	86.3	428
Secondary	90.3	189
More than secondary	96.9	108
Parity		
0 children	92.9	177
1-2 children	86.9	475
3-4 children	81.6	163
5+ children	68.9	82
Region		
Amhara	81.5	200
Oromia	86.3	434
SNNP	86.8	198
Addis Ababa	89.0	76
Residence		
Rural	84.4	596
Urban	87.8	311
Wealth		
Lowest quintile	76.6	109
Lower quintile	84.4	158
Middle quintile	81.0	156
Higher quintile	86.6	215
Highest quintile	91.7	269

**Indicates <25 observations*

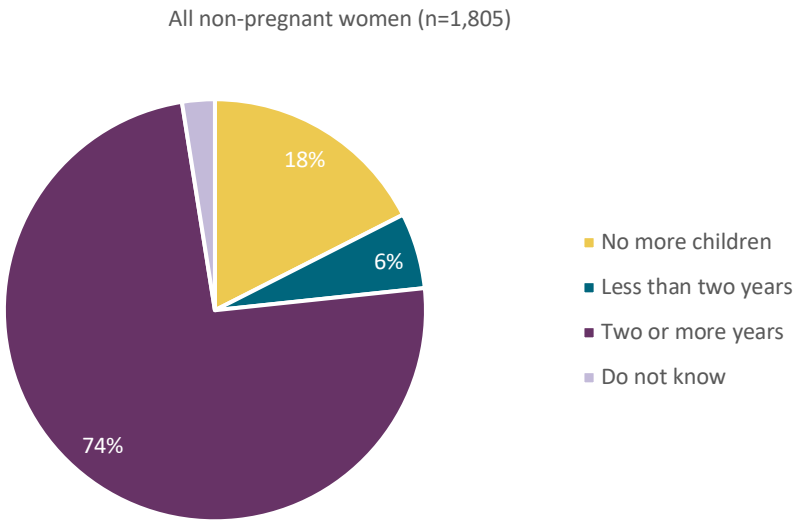
Future Pregnancy Intention

Definition: All women who were not pregnant at the time of the one-year postpartum follow-up interview were asked if they would like to have more children in the future. Those who indicated wanting to have more children were asked how long they would like to wait before having more children. The percentage of women reporting that they would like to have no more children, more children in less than two years, and more children in two or more years, by background characteristics, are shown in Table 10.

Key findings:

- One in five women (17.5%) reported not wanting to have any more children.
- Overall, the majority (74.1%) indicated wanting to wait two or more years to have more children (Figure 8).

Figure 8. Future pregnancy intention



Future pregnancy by background characteristics:

- **Age:** The percentage of women who wanted to have more children in two or more years ranged from 90.0% for women aged 15-19 to less than one-third of women aged 40-49 (28.4%). Less than 10% of women ages 15-19 and 20-24 reported wanting to have no more children.
- **Education:** Almost four-fifths of women with more than secondary education wanted more children in two or more years (80.0%), compared to three-fifths of women with no education (62.1%). Approximately one in ten women with more than secondary education reported they did not want any more children (9.7%).

- **Parity:** The majority (85.6%) of women with no prior children at enrollment reported they would like to have more children in two more years, compared to half of the women with five or more children at enrollment (51.2%).
- **Region:** The proportion of women not wanting more children ranged from 15.5% in Oromia to 24.0% in Amhara. Over half of women in Amhara (67.8%), Oromia (75.4%), SNNP (78.0%), and Addis Ababa (68.3%) indicated wanting children in two or more years.
- **Residence:** There were similar percentages of rural (18.0%) and urban women (16.1%) who reported wanting no more children. A similar proportion of urban and rural women wanted to wait two or more years before having another child, 72.9% and 74.5%, respectively.
- **Wealth:** A slightly lower proportion of women in the highest wealth quintile indicated not wanting any more children (12.9%), compared to less wealthy women (ranging between 17.1% and 22.3%).

Emotional Response Toward Potential Pregnancy

Definition: All women who were not pregnant at the time of the one-year postpartum follow-up interview were asked how they would feel if they were pregnant now. Possible responses included "very happy", "sort of happy", "mixed happy and unhappy", "sort of unhappy", and "very unhappy", as presented in Figure 9. Women's emotional response to pregnancy, by background characteristics, is not presented because women's emotional responses showed little variation by sociodemographic characteristics.

Key findings:

- Most women would feel either very unhappy (32.3%) or sort of unhappy (36.2%) if they were pregnant at the time of the one-year postpartum interview.
- Approximately one in ten (11.7%) women would feel sort of happy if they were pregnant; 3.0% would feel very happy.

Figure 9. Emotional response toward potential pregnancy

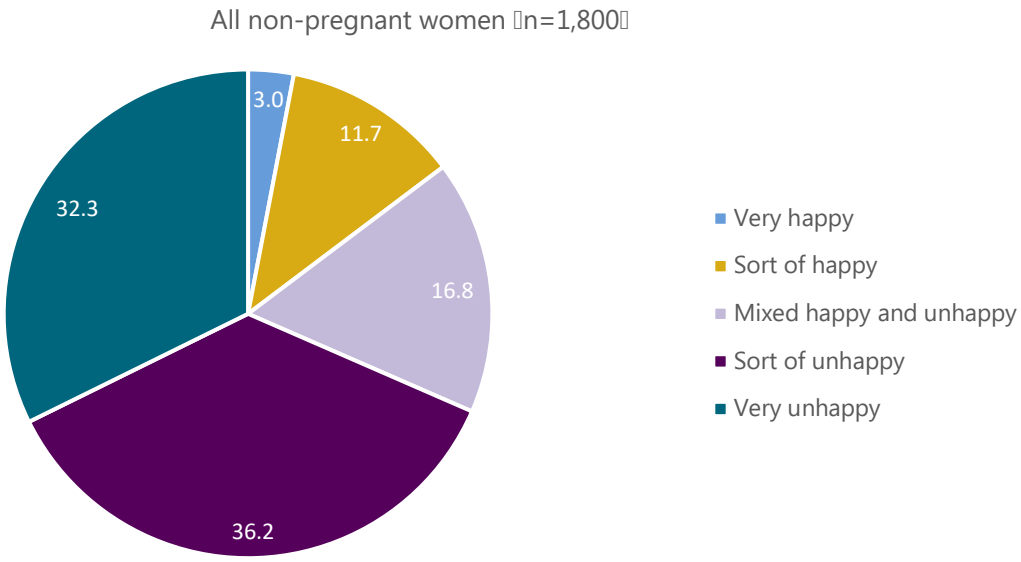


Table 10. Future pregnancy intention, by background characteristics

Among women approximately one year postpartum, the percentage of those who wanted no more child, would wait less than two years and two or more years before having another child, by background characteristics, PMA Ethiopia 2021-2023					
Background characteristics	No more children	Less than two years	Two or more years	Do not know	Number of women weighted*
Overall	**17.5**	**5.8**	**74.1**	**2.5**	**1,805**
Age					
15-19	3.0	5.8	90.0	1.2	176
20-24	4.9	4.8	88.9	1.3	421
25-29	13.7	5.2	78.1	2.9	554
30-34	24.9	7.0	65.6	2.6	371
35-39	41.5	7.4	46.8	4.3	225
40-49	60.1	5.6	28.4	6.0	58
Education					
No education	30.2	5.0	62.1	2.6	486
Primary	12.4	5.8	79.3	2.5	777
Secondary	12.2	5.3	80.1	2.3	306
More than secondary	7.5	9.7	80.0	2.9	236
Parity					
0 children	4.1	9.1	85.6	1.3	262
1-2 children	9.4	6.1	82.3	2.2	858
3-4 children	21.8	4.8	69.5	4.0	378
5+ children	42.1	4.1	51.2	2.6	289
Region					
Amhara	24.0	5.7	67.8	2.4	395
Oromia	15.5	6.2	75.4	2.9	638
SNNP	16.4	4.4	78.0	1.2	519
Addis Ababa	17.5	8.3	68.3	5.9	253
Residence					
Rural	18.0	5.5	74.5	2.0	1,039
Urban	16.1	6.7	72.9	4.2	766
Wealth					
Lowest quintile	17.1	3.4	77.0	2.6	282
Lower quintile	22.3	5.9	68.6	3.3	277
Middle quintile	16.2	7.5	74.6	1.6	288
Higher quintile	19.4	4.0	75.3	1.4	346
Highest quintile	12.9	8.3	75.0	3.8	612

Maternal Health

Postnatal Care Coverage and Counseling

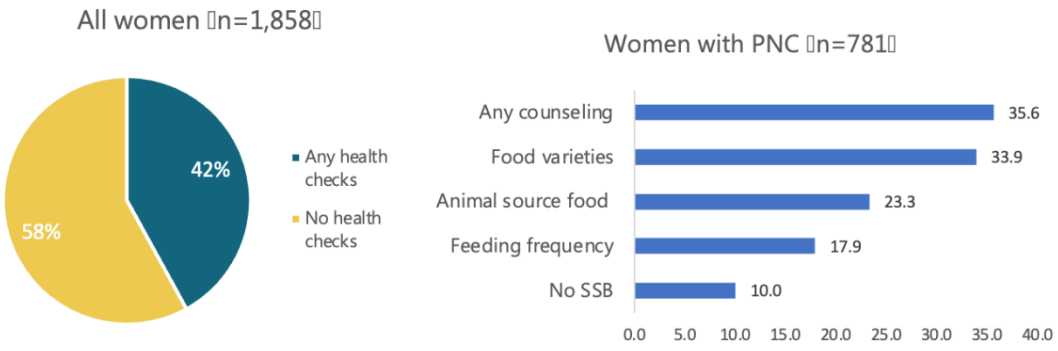
Definition: During the one-year postpartum interview, respondents were asked whether they had any health checks either for themselves or their children in the past six months from either a health extension worker or other professional healthcare providers. Those who answered "yes" to this question were considered to have received postnatal care (PNC) between six months and one year postpartum.

Among women who reported receiving any PNC in the past six months at the time of the one-year interview, a series of questions on content of child nutrition counseling were asked, including counseling on giving a variety of foods, giving animal source foods, how often to feed, and not feeding sugar-sweetened beverages (SSB). Receiving any PNC counseling was defined as answering "yes" to any of the PNC counseling content. The percentages of respondents who had any health checks and received counseling on each topic, by background characteristics, are presented in Table 11.

Key findings:

- Among women approximately one-year postpartum, less than half (42.0%) received any PNC in the past six months.
- Among women who received PNC, less than one in three (33.9%) received counseling on giving a variety of foods to the baby; three in ten (23.3%) were counseled on feeding animal source foods; two in ten (17.9%) received counseling on feeding frequencies.

Figure 10. Postnatal care and counseling



**SSB: sugar-sweetened beverages*

PNC counseling patterns by background characteristics:

- **Age:** The proportion of women with any PNC in the past six months was the highest among those aged 30-34 (44.6%) and lowest among those aged 15-19 (36.7%). Among those with PNC, only one in three (30.0%) women aged 15-19 received any counseling on child nutrition, compared to nearly two-fifths (38.1%) of women who were 20-24 years of age.
- **Education:** While more than half (52.5%) of women who attended more than secondary education received any PNC in the past six months, a smaller proportion (40.5%) of women with no education did. Among those who received any PNC, the prevalence of counseling did not appear to differ by education level.
- **Parity:** Receipt of PNC was relatively similar across parity. Among women who were nulliparous at enrollment two in five (41.5%) received any PN; among women who had five or more children, this value was 43.3%.
- **Region:** The proportion of women who reported receiving any PNC in the past six months ranged from 34.2% in SNNP to 48.2% in Amhara. Among women who had any PNC, one in three (28.2%) women in Oromia received any counseling, compared to three in five (59.9%) women in Addis Ababa.
- **Residence:** Less than half (41.9%) of women in urban areas and (42.2%) women in rural areas received any PNC between six months and one year postpartum. Compared to urban women, however, a lower proportion of rural women who received PNC were counseled on child nutrition topics.
- **Wealth:** Fewer than two in five (36.8%) women in the lowest wealth quintile received any PNC in the past six months, compared to three in five (46.3%) women in the highest wealth quintile.

Table 11. Postnatal care and counseling, by background characteristics

Percentage of women with infants alive at one year who received any postnatal care (PNC) in the past 6 months, and among those who received any PNC, the percentage receiving each form of PNC counseling, by background characteristics, PMA Ethiopia 2021-2023 Cohort

Background characteristics	Any health checks	Number of women (weighted)	Food varieties	Animal source food	Feeding frequency	No SSB	Any counseling	Number of women with PNC (weighted)
Overall	**42.0**	**1,858**	**33.9**	**23.3**	**17.9**	**10.0**	**35.6**	**781**
Age								
15-19	36.7	242	26.8	19.3	14.5	8.8	30.0	87
20-24	40.7	441	36.5	25.2	20.7	11.1	38.1	175
25-29	43.6	529	31.9	20.4	15.1	7.6	34.6	225
30-34	44.6	354	36.1	26.3	19.5	12.9	36.0	154
35-39	41.3	219	34.9	25.4	16.2	9.2	36.0	88
40-49	44.3	74	*	*	*	*	*	32
Education								
No education	40.5	583	31.6	23.9	17.1	11.7	33.8	230
Primary	40.3	856	34.6	20.4	19.6	9.2	36.3	336
Secondary	44.9	270	29.7	23.7	17.2	7.5	30.5	118
More than secondary	52.5	149	44.0	33.8	13.6	12.5	46.0	76
Parity								
0 children	41.5	260	34.3	28.2	17.8	12.6	36.0	105
1-2 children	41.8	817	36.1	23.1	16.4	8.3	37.6	334
3-4 children	40.2	417	33.5	23.4	21.6	11.1	35.6	164
5+ children	43.3	349	31.3	21.1	18.2	11.7	32.8	147
Region								
Amhara	48.2	378	44.9	35.2	26.3	19.0	45.4	177
Oromia	43.2	971	26.4	14.8	11.8	5.2	28.2	409
SNNP	34.2	423	35.7	30.1	23.6	11.1	39.1	141
Addis Ababa	39.6	87	57.8	33.7	22.4	15.2	59.9	34
Residence								
Rural	41.9	1,400	32.0	22.7	19.4	9.9	34.0	572
Urban	42.2	458	39.7	25.1	13.3	10.4	40.5	189
Wealth								
Lowest quintile	36.8	371	22.7	17.4	9.6	4.4	24.5	133
Lower quintile	35.9	367	28.9	23.2	20.5	11.2	33.2	129
Middle quintile	46.3	371	38.8	20.3	24.1	13.0	38.0	168
Higher quintile	44.5	374	34.7	24.2	20.2	9.8	36.7	162
Highest quintile	46.3	375	40.8	30.2	14.0	10.8	42.8	169

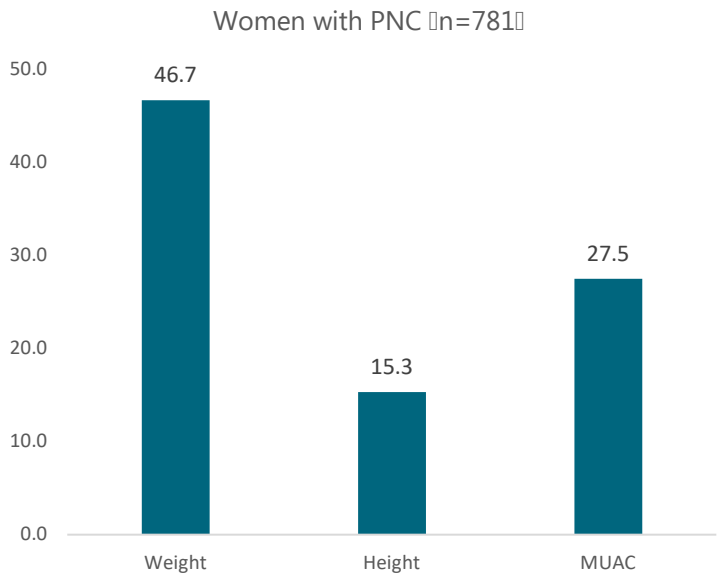
**Indicates <25 observations * SSB :sugar-sweetened beverages*

Growth Monitoring and Screening for Malnutrition at PNC

Definition: Questions regarding receipt of growth monitoring and screening for malnutrition as part of PNC, including weight, height, and mid-upper arm circumference (MUAC) measurements were asked of all women who reported receiving any PNC in the past six months. Women who reported having any PNC were asked whether their children received each measurement during PNC visit(s).

Key finding: Among women with any PNC in the past six months, nearly half (46.7%) of women reported that their children's weight was measured at PNC; fewer than one-third reported that their children's MUAC (27.5%) and height (15.3%) were measured at PNC (Figure 11 and Table 12).

Figure 11. Growth monitoring and screening for malnutrition



Patterns of growth monitoring and screening by background characteristics:

- **Age:** The proportion of women who reported that their children's weight was measured at PNC was the lowest among women aged 15-19 (38.4%) and highest among women aged 20-24 (53.8%). Approximately one in seven (10.6%-17.2%) and one in four (23.0%-31.4%) women reported receipt of height and MUAC measurement at PNC, respectively, across age groups.
- **Education:** Two in five (40.0%) women with no education and about three in four (74.1%) women with more than secondary education reported that their children's weight was

measured at PNC, respectively. The reported prevalence of height measurement was similar across education levels (13.4%-17.2%). MUAC measurement, on the other hand, was the highest among those with no education (32.2%) and lowest among those with more than secondary education (21.6%).

- **Parity:** Over half (68.6%) of women who were nulliparous at enrollment reported receipt of weight measurement at PNC, compared to one in three (35.3%) women who had 5+ children at enrollment. Roughly the same proportion of women reported receiving height and MUAC measurements for their children at PNC.
- **Region:** The prevalence of growth monitoring and malnutrition screening differed by region. For example, while less than two in five (37.5%) women in SNNP reported weight measurement at PNC, the majority (92.8%) of women in Addis Ababa did.
- **Residence:** Receipt of weight measurement was higher among urban women (68.4% versus 39.5%), while receipt of height (13.9% versus 19.5%; rural versus urban) and MUAC measurements (29.5% versus 21.7%; rural versus urban) were higher among rural women.
- **Wealth:** Compared to women in the highest wealth quintile, less wealthy women reported a lower prevalence of weight measurement and a higher prevalence of MUAC measurement at PNC.

Table 12. Growth monitoring and screening for malnutrition at postnatal care, by background characteristics

Among women with living infants at one year who received any postnatal care (PNC) in the past six months, the percentage of those whose children's weight, length of height, and mid-upper arm circumference (MUAC) were measured, by background characteristics, PMA Ethiopia 2021-2023 Cohort

Background characteristics	Weight	Height	MUAC	Number of women with PNC (weighted)
Overall	**46.7**	**15.3**	**27.5**	**781**
Age				
15-19	38.4	16.1	25.5	87
20-24	53.8	13.4	28.3	175
25-29	47.8	16.6	26.3	225
30-34	50.2	17.2	31.4	154
35-39	38.7	10.6	23.0	88
40-49	*	*	*	32
Education				
No education	40.0	13.7	32.3	230
Primary	41.4	14.8	25.6	336
Secondary	56.8	18.1	27.6	118
More than secondary	74.1	18.0	21.6	76
Parity				
0 children	68.6	23.0	26.0	105
1-2 children	48.6	15.0	24.3	334
3-4 children	40.6	13.1	28.9	164
5+ children	35.3	14.2	33.1	147
Region				
Amhara	56.0	17.3	32.7	177
Oromia	42.0	11.0	23.3	409
SNNP	37.5	20.9	32.4	141
Addis Ababa	92.8	32.8	30.4	34
Residence				
Rural	39.5	13.9	29.5	572
Urban	68.4	19.5	21.7	189
Wealth				
Lowest quintile	31.4	12.3	29.4	133
Lower quintile	37.7	14.8	31.3	129
Middle quintile	36.4	15.6	35.3	168
Higher quintile	50.1	13.8	25.0	162
Highest quintile	72.3	19.1	17.9	169

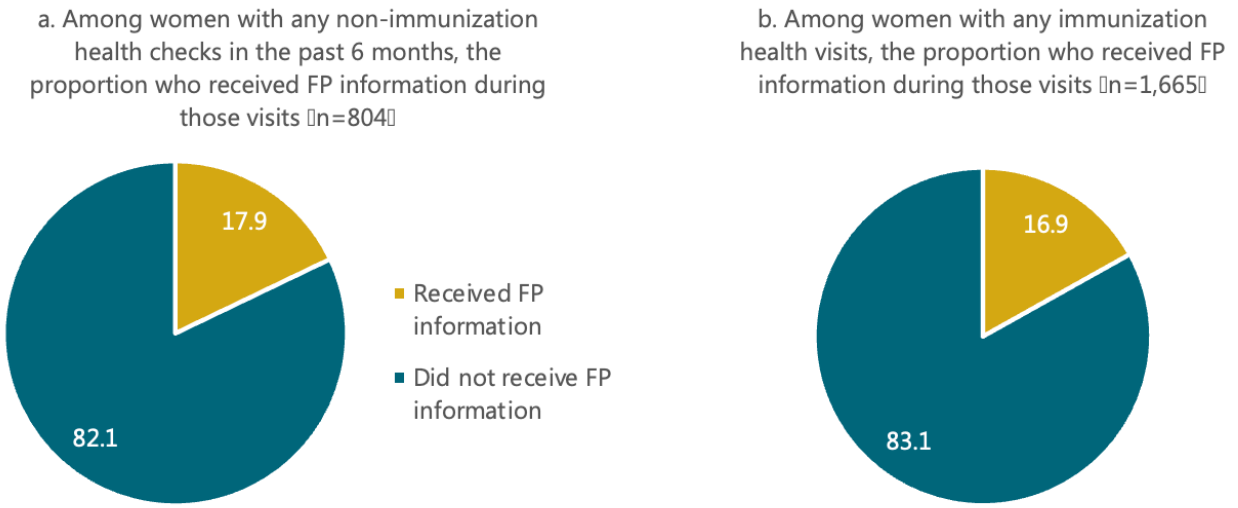
**Indicates <25 observations.*

Information about Family Planning and Health Checks

Definition: The one-year postpartum questionnaire asked women about their experiences receiving family planning (FP) information, referral, and services during any health checks received in the past six months and immunization health visits, specifically. Figure 12 presents receipt of FP information, referral, and services received during a) any health checks for herself or her baby, other than vaccination appointments, and b) receipt of FP information, referral, and services specifically within vaccination appointments (i.e. immunization health visits). Stratified results by background characteristics are not presented due to little variation in women's sociodemographic characteristics.

Key findings: Overall, approximately one in five women received information on family planning during non-immunization (17.9%) and immunization health checks (16.9%), respectively.

Figure 12. Family planning information at non-immunization and immunization health checks



Maternal & Child Health

Continuum of Care

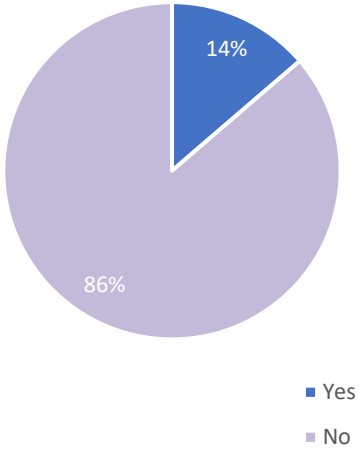
Definition: The continuum for maternal, newborn, and child health typically refers to continuity of care for the individual mother and the infant/child. PMAET data provides rich data on experiences of pregnant women accessing maternal and childcare services through one year postpartum. The data for the multiple indicators used to depict service utilization come from the six-month and twelve-month questionnaire. Specifically, these set of indicators include whether the respondent had at least four ANC visits, delivered in a facility, received any PNC by six-weeks postpartum, and completed the required child immunizations by the child's first birthday.

Key findings: Despite higher coverage for individual services, **fewer than one in five (13.7%)** respondents completed all the four key maternal and child health care services in the first year postpartum. Across the key services, there is noticeable regional variation, with the majority of respondents from Addis Ababa generally completing all care services by one year postpartum relative to less than half of women in other regions.

Table & Fig 13. Continuum of Care – receipt of essential maternal and child health services

Continuum of Care, by Region	ANC4+	ANC4+ & Facility Delivery	ANC4+ & Facility Delivery & Any PNC within 6 weeks	ANC4+ & Facility Delivery & Any PNC within 6 weeks & fully vaccinated by 12 Months
Amhara	49.4	40.8	32.9	40.7
Oromia	44.3	31.8	27.7	30.2
SNNP	34.6	28.2	21.1	19.6
Addis Ababa	72.4	71.7	67.6	77.2
Total	**44.5**	**34.9**	**29.2**	**32.2**

Fig. 13: Percentage of women who had 4+ ANC, delivered at health facility, received PNC within 6 weeks after delivery and fully vaccinated



Child Health

Child Nutrition

Definition: During the one-year interview, respondents were asked whether they had breastfed and given any foods/liquids to their child in the last 24 hours. Foods are categorized into the following 8 groups:

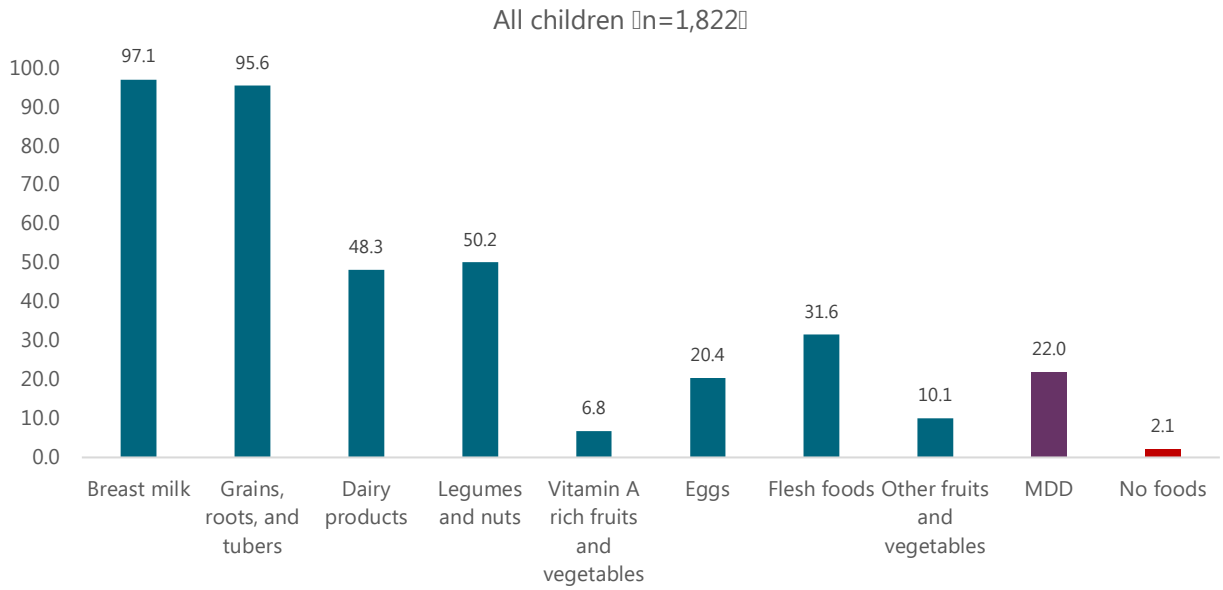
- **Breast milk**
- **Grain, roots, and tuber foods**, including root vegetables, gruel (sweetened or unsweetened), fenugreek (sweetened or unsweetened), grains (such as rice, noodles, and porridge), and any commercially fortified baby foods
- **Legumes and nuts**, including any foods made from beans, peas, lentils, or nuts
- **Dairy products**, including milk, infant formula, yogurt, cheese, and commercial cheese products
- **Animal protein**, including organ meats, meat (e.g., beef, pork, and chicken), and fresh or dried shellfish
- **Eggs**
- **Vitamin-A rich fruits and vegetables**, including yellow vegetables (e.g., pumpkin, carrot, and squash), dark green vegetables, and ripe fruits (e.g., mangoes and papayas)
- **Other fruits and vegetables**

Meeting minimum dietary diversity (MDD) is defined as having 5 or more food groups from the list above. Figure 14 presents the percentage of children who consumed each food group, met MDD, and consumed no food in the past 24 hours. Child nutrition patterns by mother's background characteristics are presented in Table 14.

Key findings:

- The majority of infants approximate 12 months old were given breast milk (97.1%) and grains, roots, and tuber foods (95.6%) in the last 24 hours.
- Other commonly consumed food groups were dairy products (48.3%), legumes and nuts (50.2%), and Vitamin A-rich fruits and vegetables (6.8%).
- One in five (22.0%) infants met MDD, that is, were given five or more food groups.
- A small proportion (2.1%) of infants were not given any food in the 24 hours preceding the survey. This percentage was highest in SNNP, where almost five percent (4.5%) of infants did not eat any food in the 24 hours preceding the survey.

Figure 14. Food(s) consumed in the past 24 hours



Child nutrition patterns by background characteristics:

- **Mother's Age:** The proportion of children who met MDD was the highest among infants whose mothers were 20-29 years old and lowest among infants whose mothers were 40-49 years of age.
- **Mother's Education:** Infant nutrition patterns showed large variability by mother's education level. While almost half (47.2%) infants whose mothers attended more than secondary education met MDD, only one in seven (14.4%) infnats whose mothers had no education did.
- **Mother's Parity:** First-born children had the highest percentage of meeting MDD (27.0%), while infants whose mothers had five or more children at enrollment had the lowest percentage (13.1%).
- **Region:** The percentage of infants meeting MDD was 53.0% in Addis Ababa (highest) and 14.0% in Amhara (lowest). In Amhara, while the majority of infants consumed breast milk (97.0%), grains (97.2%), dairy products (68.7%), and less than one third consumed other foods (5.9%-30.5%).
- **Residence:** Approximately one in five (18.6%) and three in ten (32.1%) infants in rural and urban areas met MDD, respectively.
- **Wealth:** About two in five (39.1%) infants from the wealthiest families met MDD, compared to one in ten (10.5%) infants from the poorest families. Foods almost universally consumed by all infants across wealth status were breast milk (93.7%-98.6%) and grains (95.3%-97.7%) but there was significant variation in consumption of dairy products and other fruits and vegetable by wealth.

Table 14. Child nutrition, by background characteristics

Among children approximately 12-month old, the percentage who consumed each food group, who met the minimum dietary diversity (MDD), and who consumed no foods in the past 24 hours, among all alive children, by background characteristics, PMA Ethiopia 2021-2023 Cohort

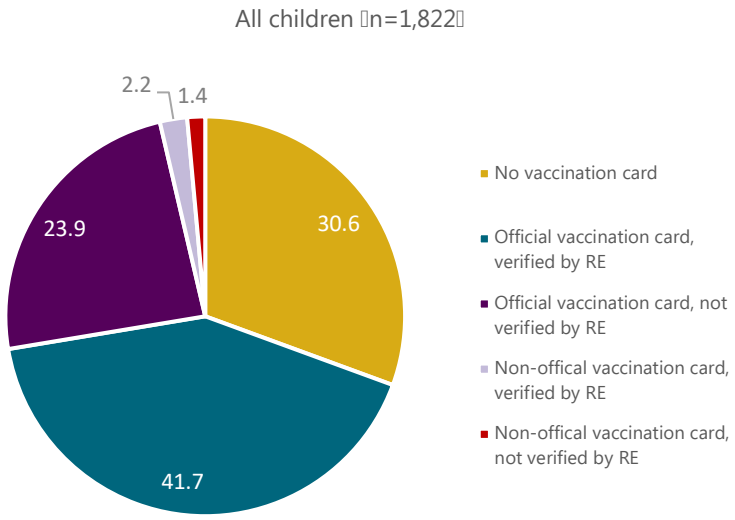
Background characteristics	Breast milk	Grains, roots, and tubers	Dairy products	Legumes and nuts	Vitamin A rich fruits and vegetables	Eggs	Flesh foods	Other fruits and vegetables	MDD	No foods	Number of children (weighted)
Overall	**97.1**	**95.6**	**48.3**	**50.2**	**6.8**	**20.4**	**31.6**	**10.1**	**22.0**	**2.1**	**1,822**
Age											
15-19	97.2	96.8	42.1	49.7	8.2	22.2	34.5	10.7	22.4	1.5	232
20-24	95.3	94.9	50.5	51.9	7.7	21.7	31.4	11.2	23.2	2.1	436
25-29	96.9	96.1	47.9	50.7	5.3	23.8	31.7	10.3	23.1	2.0	522
30-34	98.7	95.3	51.9	50.9	8.4	17.4	29.2	9.1	21.7	2.6	349
35-39	97.4	95.9	48.2	46.3	5.9	14.6	35.4	8.4	19.3	2.8	212
40-49	100.0	93.4	38.8	45.0	2.2	13.6	24.3	8.8	13.7	1.6	70
Education											
No education	98.0	94.1	42.9	45.5	4.1	13.1	27.3	5.4	14.4	3.4	563
Primary	97.9	95.3	44.3	48.3	6.0	21.1	31.5	10.3	20.4	1.9	843
Secondary	94.8	98.7	63.2	52.6	10.9	25.5	34.8	12.7	28.7	1.0	266
More than secondary	92.8	97.7	64.4	74.0	13.5	34.8	42.9	21.9	47.2	0.6	150
Parity											
0 children	96.6	96.5	55.0	48.7	8.0	26.6	34.6	14.0	27.0	0.9	253
1-2 children	96.2	96.2	50.8	53.0	8.7	22.0	34.8	11.9	26.2	1.9	804
3-4 children	97.1	95.4	48.7	45.3	5.2	19.5	27.3	7.7	17.6	2.1	409
5+ children	99.6	93.7	36.8	49.3	3.2	12.5	26.2	6.0	13.1	3.6	340
Region											
Amhara	97.0	97.2	68.7	30.5	7.7	16.1	19.0	5.9	14.0	2.1	379
Oromia	97.0	96.8	47.4	58.1	6.8	20.7	31.1	8.6	23.3	1.2	940
SNNP	98.9	91.5	27.9	46.8	3.0	20.2	39.4	13.4	19.8	4.5	417
Addis Ababa	89.4	96.5	65.8	66.6	20.7	37.0	55.4	28.6	53.0	1.0	86
Residence											
Rural	98.0	95.4	46.0	45.8	5.7	19.5	30.4	7.9	18.6	2.0	1,370
Urban	94.3	96.3	55.0	63.4	9.9	23.1	35.3	16.7	32.1	2.4	452
Wealth											
Lowest quintile	98.6	92.8	29.8	50.0	3.4	17.7	26.4	6.1	10.5	3.6	359
Lower quintile	97.2	95.3	42.3	35.3	4.8	20.6	23.2	4.4	12.8	2.5	357
Middle quintile	97.4	97.0	51.2	45.5	5.8	17.3	35.3	8.8	19.3	0.6	362
Higher quintile	98.4	95.4	52.8	51.2	8.4	18.9	32.0	10.3	27.5	2.7	376
Highest quintile	93.7	97.7	64.5	68.3	11.3	27.5	40.8	20.4	39.1	1.3	369

Vaccination Documentation

Definition: During the one-year interview, all respondents with infants that were still alive at the time of the interview were asked whether they had a formal vaccination card with an official Ministry of Health logo where vaccinations were written down. Those who answered "yes" were asked if the card was available to be seen. If a woman answered "no", the RE then asked if they had any paper or card with vaccination information written down, which was not an official record but should include a list of vaccines and the dates of administration. Women who said they had this non-official record were asked if the paper/card could be seen. The type of vaccination documentation is presented in five mutually exclusive categories: 1) no vaccination card, 2) official vaccination card, verified by RE, 3) official vaccination card, not verified by RE, 4) non-official vaccination card, verified by RE, and 5) non-official vaccination card, not verified by RE (Figure 15).

Key findings: Overall, roughly one-third (30.6 %) of infants had no vaccination card. Over two in five (41.7%) infants had a verified official vaccination card; one in five (23.9%) had an official unverified official vaccination card; a small proportion had a non-official vaccination card (3.6 %).

Figure 15. Types of vaccination documentation



Child Immunization

Definition: Women with infants alive at one year answered questions about receipt of child immunization; specifically, whether their child received the Bacillus Calmette–Guerin (BCG), polio (three doses), pentavalent (three doses), pneumococcal (PCV, three doses), rotavirus vaccines (two doses), measles, and any Vitamin A supplementation. Receipt of vaccination and Vitamin A supplementation were either validated through vaccination cards (official or non-official) or relied on the mother's reporting. Infants were considered to have received a vaccination if 1) their vaccination cards provided proof, or 2) their mothers reported that they received the vaccination, despite no vaccination card being present at the time of the interview.

We applied guidance from the World Health Organization and the 2016 Ethiopia Demographic Health Survey to identify age-appropriate vaccinations for infants 12 months of age.[3,4]

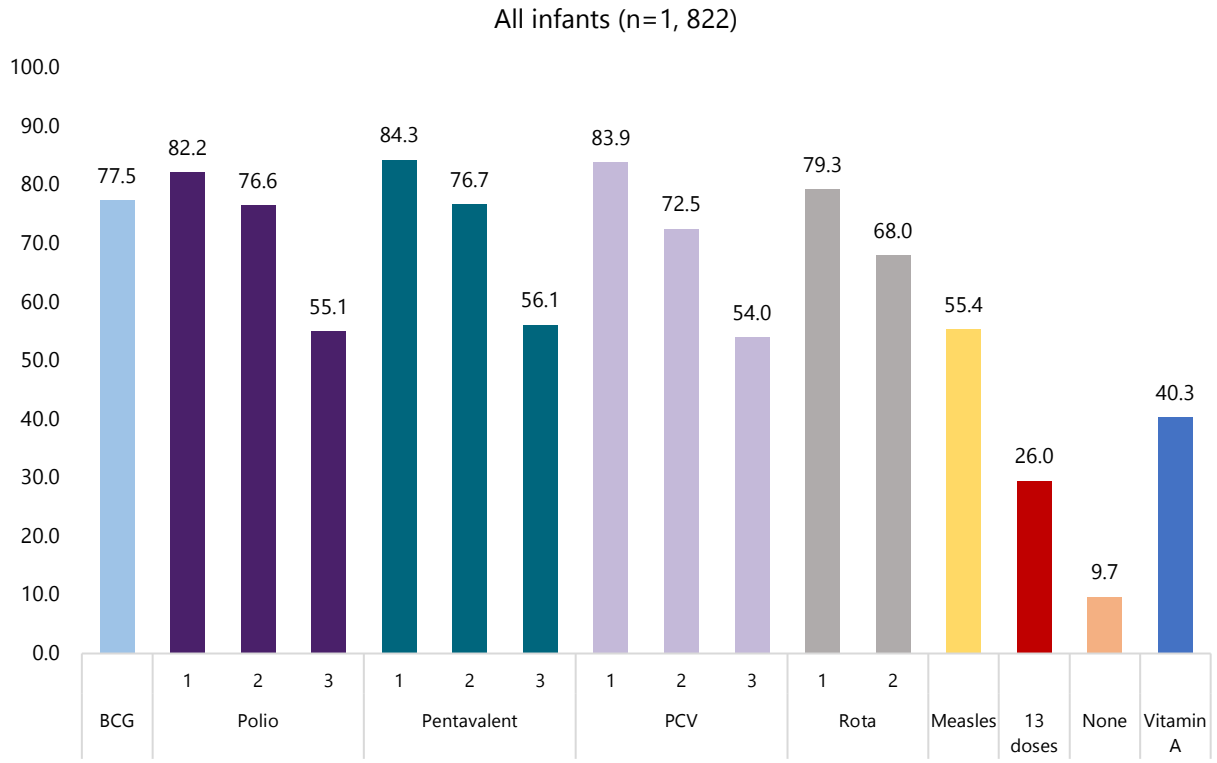
- Receiving all 13 doses of vaccines: BCG, polio 1-3, pentavalent 1-3, PCV 1-3, Rota 1-2, and measles vaccine

Key findings:

- As shown in Figure 16, about one in three (26.0 %) infants received all 13 vaccines, while one in ten (9.7%) infants received no vaccination.
  - Specifically, more than seven in ten (77.5%) infants received the BCG vaccine.
  - More than half received all three doses of (55.1%), pentavalent (56.1%), and PCV vaccines (54.0%).
  - Two-thirds (68.0%) of infants received two doses of Rota vaccines.
  - Over half (55.4%) infants received the measles vaccine.
- More than one in three infants received Vitamin A supplementation (40.3%).

[3] Nour, T.Y., Farah, A.M., Ali, O.M. *et al.* Immunization coverage in Ethiopia among 12–23 month old children: systematic review and meta-analysis. *BMC Public Health* **20,** 1134 (2020). https://doi.org/10.1186/s12889-020-09118-1

[4] Central Statistical Agency (CSA) [Ethiopia] and ICF. 2016. *Ethiopia Demographic and Health Survey 2016*. Addis Ababa, Ethiopia, and Rockville, Maryland, USA: CSA and ICF.



Vaccination patterns by background characteristics:

- **Mother's Age:** The percentage of infants receiving all 13 vaccines ranged from one in five (19.7%) among infants of mothers aged 40-49 to almost two in five (31.5%) among infants whose mothers were 25-29 years of age.
- **Mother's Education:** While 13.7% of infants whose mothers had no education did not receive any vaccination, almost all infants whose mothers had more than secondary education received at least one vaccination (97.3%).
- **Mother's Parity:** More than two in five first-born children received all 13 doses of vaccines (37.7%), while only one in seven children whose mother had five or more children did (14.4%). Receipt of vitamin A supplementation was also higher for firstborns.
- **Region:** Vaccination coverage had wide regional differences. For example, the coverage of infants having received all 13 doses ranged from 16.4%-76.4%.
- **Residence:** About one in five (21.2%) infants in rural areas and more than half (54.7%) infants in urban areas received all 13 doses of vaccines.
- **Wealth:** Disparities in vaccine coverage by wealth were also observed. Six in ten (58.0%) infants from the wealthiest families received all 13 vaccines, compared to about one in ten (11.1%) infants from the poorest families.

Table 15. Child vaccination, by background characteristics

Percentage of children approximately one year old who received BCG, Polio1-3, PCV1-3, Pentavalent1-3, Rota1-2, IPV, Measles vaccinations, and Vitamin A supplement, by mother's background characteristics, PMA Ethiopia 2021-2023 Cohort

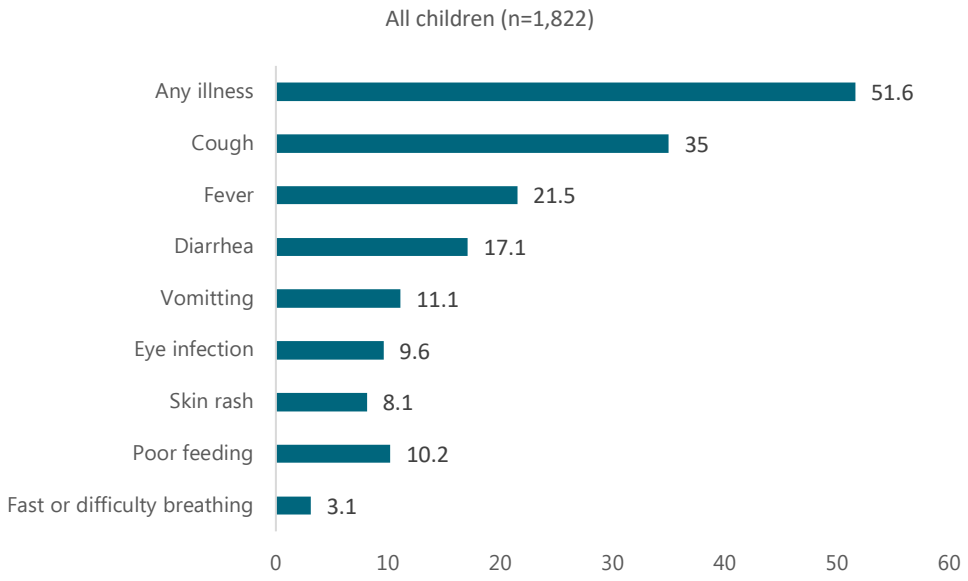
Background characteristics	BCG	Polio			Pentavalent			PCV			Rota		Measles	13 doses	None	Vitamin A	Number of Children (weighted)
		1	2	3	1	2	3	1	2	3	1	2					
Overall	77.5	82.2	76.6	55.1	84.3	76.7	56.1	83.9	72.5	54.0	79.3	68.0	55.4	29.5	9.7	40.3	1,822
Age																	
15-19	73.6	85.5	76.5	50.8	83.5	77.8	49.5	83.5	74.0	46.9	80.2	71.7	51.2	26.9	11.3	45.4	232
20-24	77.1	81.5	75.3	57.9	82.2	76.2	59.0	82.9	72.3	56.2	78.8	67.5	58.2	30.5	9.7	42.5	436
25-29	78.7	82.1	76.5	55.5	84.4	76.5	58.0	84.2	72.7	54.9	78.5	67.5	56.5	31.5	10.4	40.3	522
30-34	80.1	85.2	80.9	57.1	86.7	79.4	58.7	85.6	74.6	58.3	81.0	71.6	58.9	30.7	6.7	38.7	349
35-39	76.0	78.9	74.7	51.7	87.0	74.4	52.2	85.7	70.1	50.7	80.6	65.4	49.6	26.7	9.6	37.9	212
40-49	74.5	73.1	69.8	48.0	79.4	72.1	45.1	74.5	63.4	45.4	72.1	52.4	43.0	19.7	14.3	25.2	70
Education																	
No education	69.5	76.8	70.3	44.3	81.1	69.8	43.1	79.8	64.0	42.4	73.0	58.5	43.7	18.2	13.7	37.3	563
Primary	76.6	81.9	76.1	53.6	82.0	76.0	54.1	82.5	71.5	51.2	77.5	66.6	53.7	27.8	10.3	40.6	843
Secondary	88.6	89.6	83.7	70.0	93.8	85.2	74.0	91.8	84.6	71.9	91.3	82.2	72.6	44.5	3.4	45.1	266
More than secondary	92.3	91.3	90.4	77.0	92.1	91.8	84.1	93.3	88.3	81.3	91.2	86.3	78.4	55.2	2.7	41.1	150
Parity																	
0 children	83.7	86.3	83.1	67.1	89.5	86.3	70.6	88.8	81.8	68.4	88.3	81.3	65.9	37.7	5.9	45.0	253
1-2 children	80.7	84.6	80.2	59.5	85.5	80.0	61.7	86.2	77.4	59.2	82.9	73.5	61.8	36.7	8.3	39.9	804
3-4 children	74.5	79.2	71.2	49.4	83.9	72.4	48.5	81.6	66.7	46.3	74.5	60.6	48.4	23.6	11.3	39.6	409
5+ children	67.9	77.2	68.6	42.3	77.9	66.1	41.6	77.4	60.2	41.1	69.1	53.5	40.8	14.4	14.2	35.9	340
Region																	
Amhara	84.9	83.6	89.9	73.1	94.2	90.3	71.4	93.2	86.3	70.5	91.7	86.0	64.7	37.8	4.1	32.9	379
Oromia	74.6	81.7	73.0	52.5	81.4	73.1	54.4	81.6	69.4	52.1	75.3	64.1	51.4	27.7	10.4	42.5	940
SNNP	72.7	79.3	68.8	37.4	78.5	67.9	37.6	77.6	61.5	34.9	72.9	54.3	48.4	16.4	15.2	38.8	417
Addis Ababa	99.3	97.3	94.9	89.2	100.0	99.1	96.6	99.0	98.1	95.4	98.9	97.4	91.1	76.4	0.0	56.1	86
Residence																	
Rural	71.2	79.2	71.5	47.6	80.7	71.2	47.5	80.2	66.4	45.5	74.7	61.4	46.6	21.2	12.3	39.1	1,370
Urban	96.3	91.6	92.0	77.8	95.0	93.4	82.3	95.1	90.7	79.8	93.2	87.9	81.9	54.7	1.8	43.8	452
Wealth																	
Lowest quintile	62.8	74.0	63.9	34.4	73.4	62.5	34.7	72.9	57.7	33.4	61.9	48.1	40.5	11.1	17.9	39.3	359
Lower quintile	68.4	76.4	66.1	40.4	78.8	67.1	36.2	78.6	59.4	35.0	73.6	56.2	38.3	14.6	11.7	40.3	357
Middle quintile	71.4	79.8	78.1	54.9	82.6	74.2	53.6	81.4	72.1	52.9	77.8	66.7	47.6	25.3	14.1	33.2	362
Higher quintile	86.1	87.0	81.0	63.0	89.8	84.5	68.7	90.0	80.6	64.4	87.3	78.8	65.1	37.5	4.6	42.6	376
Highest quintile	97.6	93.5	93.0	81.4	96.3	94.4	85.8	95.9	91.5	82.9	94.9	89.0	84.1	58.0	0.7	45.9	369

Child Illness

Definition: During the one-year postpartum follow-up interview, women were asked whether their children had suffered any illness in the past two weeks, including difficulties/poor feeding, eye infection, skin rash/lesion, convulsion, lethargy, unconsciousness, fever, cold/cough, sore throat, fast or difficulty breathing, diarrhea, and vomiting (Figure 16). Suffering from any illness was defined as having an affirmative response for any illnesses listed. Percent distribution of illnesses with fewer than 100 children affected is not presented due to sample size limitations.

Key findings: Half of all children suffered at least one illness in the past two weeks at time of the one-year postpartum interview (51.6%). The most common illnesses were cough (35.0%), fever (21.5%) and diarrhea (17.1%).

Figure 14. Child illness suffered in the past 2 weeks



Patterns of child illness by background characteristics:

- **Mother's Age:** Reports of illness in the previous two weeks did not show large variability by mother's age.
- **Mother's Education:** Similar to mother's age, reports of illness in the previous two weeks were relatively similar across mothers' education levels.
- **Mother's Parity:** In most illnesses, the percentage of children suffering the illness was the highest among women with five or more children at enrollment. For example, while 11.6% of children of nulliparous mothers suffered diarrhea, 21.3% of children whose mothers had 5+ children experienced diarrhea in the last two weeks.

- **Region:** The proportion of children who suffered any illness in the past two weeks was the highest in Amhara (57.0%) and lowest in Addis Ababa (48.4%).
- **Residence:** Report of illness in the past two weeks were similar for children in urban and rural communities.
- **Wealth:** The percentage of children suffering any illness was generally lower among children from the wealthiest families. For example, one in five (20.5%) and over on in ten (13.6%) children in the lowest and highest wealth quintile suffered diarrhea in the past two weeks, respectively.

Treatment for Child Illness

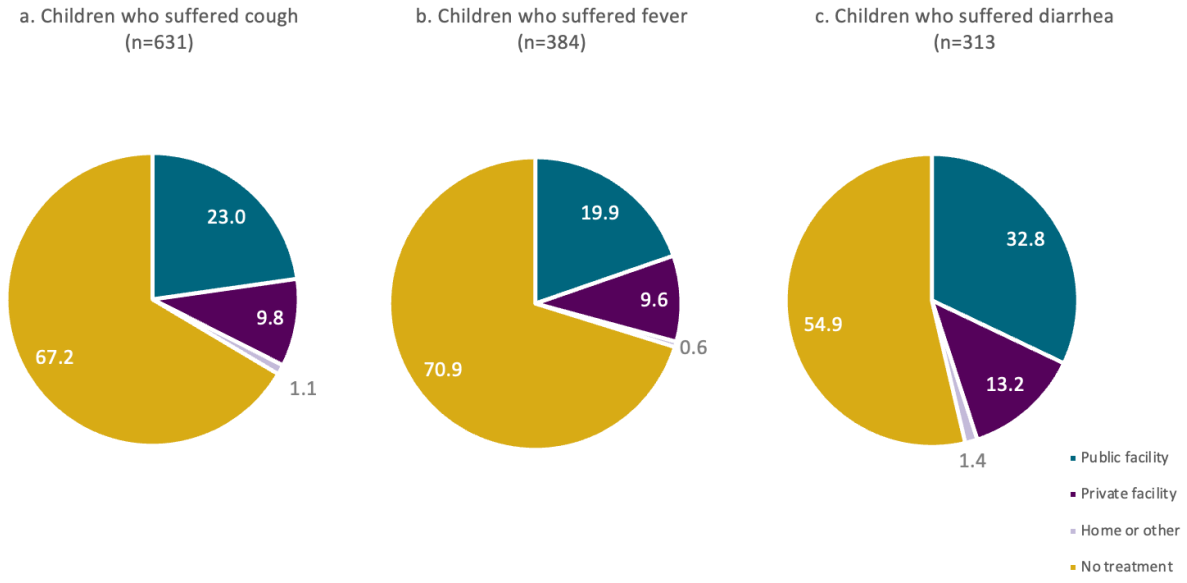
Definition: Women who reported that their children had suffered any illness in the past two weeks were asked whether and where they sought treatment for the illness, by illness type. Place of treatment was grouped into three categories: 1) treatment at public facilities (government hospital, government health center, government health post, and other public sectors), 2) treatment at private facilities (private hospital/clinic, NGO/faith-based facilities, and other private sectors), and 3) treatment at home or other facilities, including provider home visit, treatment at other homes, traditional healer/medicine, pharmacy/drug store, retail store, religious treatment, and others.

Figure 17 present the place of treatment among children who suffered from cough, fever, and diarrhea. Care-seeking behaviors for other illnesses (e.g., eye infection, skin rash/lesion, convulsion, lethargy, unconsciousness, and vomiting) and stratified results by background characteristics are not presented due to small sample sizes.

Key findings:

- Among children who suffered cough, fever, and diarrhea, the majority (~60%) did not receive any treatment.
- Children were most commonly seen for care at public facilities (23.0%-32.8%).
- Roughly one in ten (9.6%-13.2%) children who suffered cough, fever, or diarrhea received treatment at a private facility.

Figure 15. Treatment for child illness



Presence of Blood and Treatment for Diarrhea

Definition: Women who reported that their children had suffered diarrhea in the past two weeks were asked whether there was blood □stained or mixed□ in the diarrhea. The presence of bloody diarrhea was defined as having an affirmative response to this question.

Women who reported that they sought treatment for their child/ren experiencing diarrhea were asked what types of treatment they received, including stool examination, oral rehydration solution □ORS□, zinc tablets, oral antibiotics, etc. The proportions of children who received zinc tablets and ORS either at the facility or to take home, among children who suffered diarrhea, are presented in Figure 18.

Key findings: Among children who suffered diarrhea, 14.7% were reported to have blood present in diarrhea. Approximately one in forty □1.4%□ and one in four □27.7%□ children received zinc tablets and ORS as treatment for diarrhea, respectively.

Figure 16. Presence of blood and treatment for diarrhea