PMA Ethiopia One-Year Postpartum Maternal and Newborn Health Technical Report, 2019-2021 Cohort

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ADDIS ABABA UNIVERSITY

PMA Ethiopia One-Year Maternal and Newborn Health Technical Report, 2019-2021 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 **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 January 2020. Data collection for the one-year postpartum interview occurred between July 2020 and August 2021. Of note, as of November 2020, data collection was ceased in Tigray Region due to security concerns. The analytic sample included 2,094 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 (2,054 out of 2,131 live births).

Key Findings:

- Sexual and reproductive health
    - Approximately half (42.6%) of women have resumed sexual activities while their menses returned at the time of the one-year postpartum follow-up interview.
    - Over half (56.9%) of women were not using a family planning method. Among all current users, the most common methods were injectables (57.4%), followed by implants (26.5%) and contraceptive pills (7.3%).
    - The majority (80.7%) of women using contraception discussed their decision with their partner before method initiation.
- Maternal health
    - Less than half (44.7%) 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 (41.8%) reported that their children's weight was measured at PNC; fewer than one-quarter reported that their children's MUAC (24.4%) and height (14.9%) were measured at PNC.
    - Roughly one in five women received information on family planning during non-immunization (18.6%) and immunization health checks (20.5%), respectively.
- Child health
    - The large majority of children approximately 12 months old were given breast milk (97.3%) and grains, roots, and tuber foods (93.6%) in the last 24 hours. One in six (16.2%) children met the minimum dietary diversity criteria.
    - One in three (32.3%) 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 (10.4%) children received no vaccination.

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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 first 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 & 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.
- Assesses whether key MNH outcomes have been affected by the COVID-19 pandemic, including healthcare-seeking behaviors related to antenatal, delivery, newborn postnatal care, and early infant vaccinations.

Methods

PMA Ethiopia features cross-sectional and longitudinal data collection in four large, predominantly agrarian regions (Tigray, Oromia, Amhara, and SNNP), one pastoralist region (Afar) and one urban region (Addis Ababa) and annual cross-sectional data collection in the remaining five regions (B-Gumuz, Gambella, Somali, Harari, and Dire Dawa).[*] As of November 2020, data collection was ceased in Tigray due to security concerns. The three data collection activities featured by PMA Ethiopia include:

- A longitudinal survey that follows eligible women at six-weeks, six-months, and one-year postpartum after pregnancy screening and enrollment in panel regions.

[*] Data collection for the baseline survey occurred in 2019 prior to the ratification of regional statehood of Sidama.

- A cross-sectional survey administered to 35 randomly selected households annually 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 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 multistage 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, Tigray, 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, resident enumerators (REs) identified all women who were aged 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 oral consent were enrolled in the study.

To arrive at the required sample size, PMA Ethiopia used previous data from PMA2020 surveys to estimate the 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 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 56 EAs were needed to estimate mCPR with a 5% margin of error. Based on anticipated fertility across the six panel regions, we estimated that we would enroll approximately 3,000 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 et al., 2020.[1]

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,

[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

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.

A State of Emergency in Ethiopia was declared in April 2020 in response to COVID-19 before data collection for the one-year postpartum interview began. After COVID-19 emergency lockdown procedures eased in early June, the one-year questionnaire was modified to include questions related to women's knowledge of COVID-19 and the impact of COVID-19 on access to health services and care-seeking.

Survey Implementation and Participants

Training for data collection for the six-month and one-year interviews took place simultaneously in January 2020. Data collection occurred between July 2020 and August 2021.

As shown in Figure 1, a total of 2,094 women completed the one-year interview. Due to security concerns emerging in the country at this time, 419 expected interviews were not conducted, with 83.1% (348 interviews) being from Tigray. Other reasons for incomplete interviews included that the respondent or household moved (n=129), was not at home (n=29), was absent indefinitely (n=15), refused (n=5), or whose interview date exceeded eligibility (n=1). One partially completed interview and one interview completed by the caregiver were also excluded.

The analytic sample included 2,094 women aged 15-49 who provided complete one-year postpartum survey data. Interviews from Tigray (n=98) were included in the overall estimate but were excluded from regional comparisons due to limited sample size. Children-level analyses included in this report were restricted to all alive children who remained in follow-up (2,054 out of 2,131 live births).

Response Rate and Mean Time to Interview

Table 1 shows the response rate from the one-year postpartum interview of the first PMA Ethiopia cohort. Among a total of 2,693 eligible women, 2,094 women completed the one-year interview, yielding an overall response rate of 77.8%. 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 sample was designed to represent all pregnant women ages 15-49 in the six regions in which the survey was conducted. 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 sizes for regional estimation of key MNH indicators. For detailed explanations comparing weighted and unweighted sample sizes, please refer to the PMA Ethiopia Baseline Maternal and Newborn Health Report.

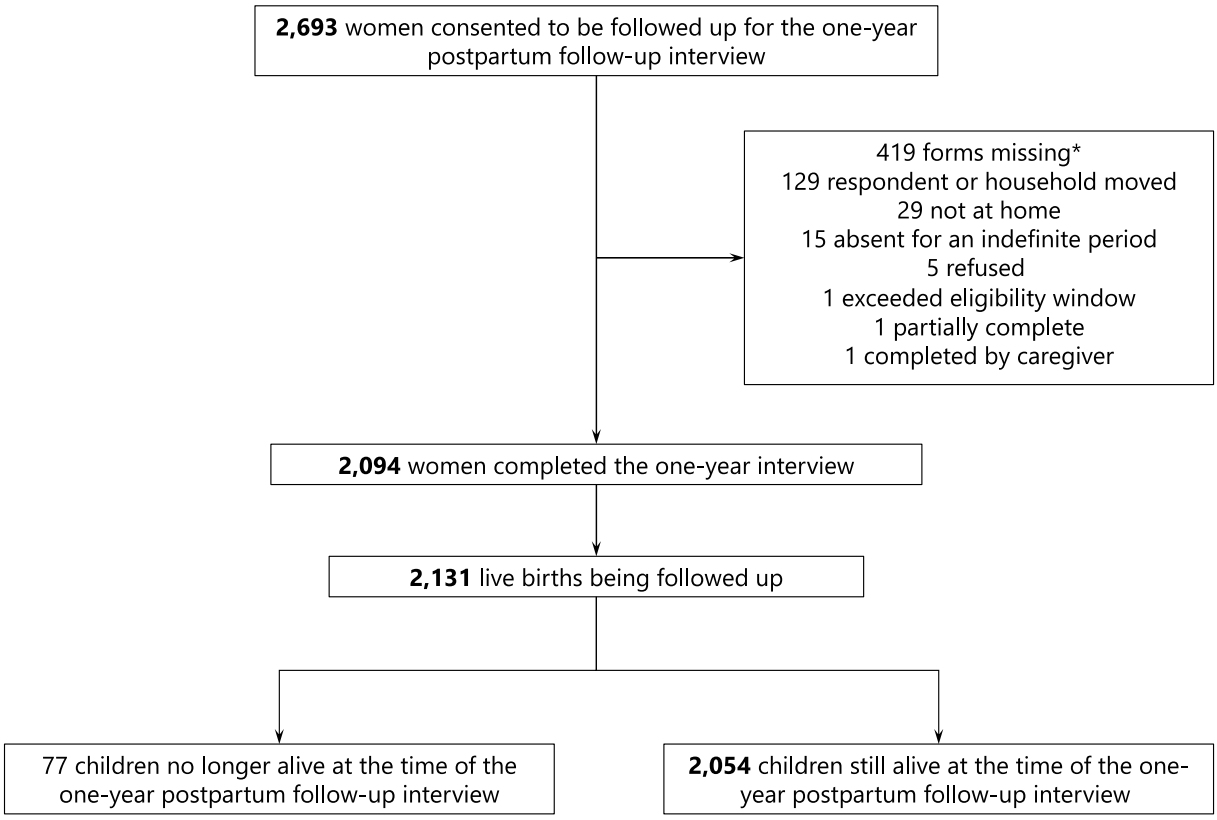
The number of women needed to interview from each region was determined by statisticians at PMA Ethiopia. To generate statistics that are representative of Ethiopia's population, sample weights were introduced. Sample weights were constructed based on the selection probabilities of the EAs provided by the Central Statistics Agency (CSA). 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 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 should result in a sample that is representative of all households with pregnant or recently postpartum women and all pregnant or recently postpartum women ages 15–49 residing in the six 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



** Forms were missing due to the stop in data collection in Tigray and other areas affected by conflicts. Of the 419 missing forms, 348 (83.1%) were from Tigray, 30 (7.2%) were from SNNP, 18 (4.3%) were from Oromia, 16 (3.8%) were from Amhara, 5 (1.2%) were from Afar, and 2 (0.5%) was from Addis Ababa.*

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

Response Rate	
Number of eligible women who completed the interview	2,094
Number of eligible women	2,693
One-year interview response rate	**77.8**
Number of months postpartum	
Mean (sd)	12.0 (0.32)
Number of women	**2,093**

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 (30.1%) of respondents were between the ages of 25-29 and 10.8% were aged 15-19 years.

Education: Forty-one percent (40.8%) of women had no formal education, and about an equal proportion had ever attended primary school (40.7%). Approximately one in ten (11.5%) women attended secondary education. Fewer than one in ten (7.1%) women attended any formal education beyond secondary education (technical & vocational or higher education).

Parity: About one in five (17.1%) women had no children before they participated in the panel survey. More than a third of respondents (37.6%) had 1-2 children; about equal proportions had 3-4 (22.5%) or 5+ children (22.8%), not including the index pregnancy.

Region: Respondents were enrolled from six regions in Ethiopia. The largest proportion of respondents lived in Oromia (44.1%), followed by SNNP (23.1%) and Amhara (20.4%) regions, while smaller proportions of women were from Tigray (6.6%), Addis Ababa (3.8%), and Afar (2.0%).

Residence: The vast majority (77.8%) of women lived in rural areas, with fewer than one-quarter (22.2%) of respondents from urban areas.

Table 2. Background characteristics of respondents

Percent distribution of respondents by selected background characteristics, PMA Ethiopia 2019-2021 Cohort			
Background characteristics[1]	Weighted percent	Weighted N	Unweighted N
Age			
15-19	10.8	225	175
20-24	23.5	491	508
25-29	30.1	631	691
30-34	18.8	393	401
35-39	12.8	269	257
40-49	4.0	84	61
Education			
No education	40.8	854	835
Primary	40.7	851	762
Secondary	11.5	240	286
More than secondary	7.1	148	210
Parity			
0 children	17.1	358	375
1-2 children	37.6	787	838
3-4 children	22.5	472	479
5+ children	22.8	476	401
Region[2]			
Tigray	6.6	138	98
Afar	2.0	42	208
Amhara	20.4	427	424
Oromia	44.1	922	592
SNNP	23.1	483	538
Addis Ababa	3.8	81	233
Residence			
Rural	77.8	1,629	1,340
Urban	22.2	464	753
Wealth			
Lowest quintile	20.2	422	384
Lower quintile	20.5	429	334
Middle quintile	20.1	420	343
Higher quintile	20.0	418	381
Highest quintile	19.3	405	651
Overall	**100.0**	**2,093**	**2,093**

**Notes:* 1. Background characteristics are obtained from the baseline interview. Parity, for example, refers to women's parity at enrollment.

2. Ninety eight interviews were completed before November 2020 when data collection in Tigray was stopped. Tigray is excluded from regional comparisons because the estimates will not be regionally representative.

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 one-year interview, PMA Ethiopia 2019-2021 Cohort			
Background characteristics[1]	Weighted percent	Weighted N	Unweighted N
Mother's Age			
15-19	10.7	220	169
20-24	23.3	479	496
25-29	30.8	632	687
30-34	19.0	390	398
35-39	12.3	252	246
40-49	4.0	82	58
Mother's Education			
No education	40.6	833	810
Primary	40.5	831	748
Secondary	11.7	241	285
More than secondary	7.3	149	211
Mother's parity			
0 children	17.0	349	365
1-2 children	38.1	782	831
3-4 children	22.7	466	471
5+ children	22.3	458	387
Region[2]			
Tigray	6.6	135	96
Afar	1.9	40	197
Amhara	20.7	425	422
Oromia	43.6	895	574
SNNP	23.3	478	531
Addis Ababa	4.0	81	234
Residence			
Rural	77.4	1,590	1,303
Urban	22.6	464	751
Wealth			
Lowest quintile	20.3	417	374
Lower quintile	19.9	408	322
Middle quintile	19.8	406	331
Higher quintile	20.3	417	375
Highest quintile	19.8	406	652
Overall	**100.0**	**2,054**	**2,054**

**Notes:* 1. Background characteristics are obtained from the baseline interview.
2. 98 interviews were completed before November 2020 when data collection in Tigray was stopped. Tigray is excluded from regional comparisons because the estimates will not be regionally representative.

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 activities. Table 4 presents the proportion of women who reported that their menses had returned, resumed sexual activities, and both, by background characteristics.

Key findings:

- Roughly 45% of women reported that their menses had returned at time of the one-year postpartum interview (Figure 2 and Table 4).
- Over ninety percent (94.5%) of women had resumed sexual activity.
- Less than half (42.6%) 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 (56.5%) in those aged 15-19 to fewer than one in three in those aged 40-49 (30.7%).
- **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 (34.0%) and three-fourths of women with more than secondary education (75.9%) 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 (60.3%), while women with five or more children had the lowest percentage (31.7%).
- **Region:** Nearly three in four (76.7%) women in Addis Ababa, compared to fewer than two in five women in Amhara (37.2%), 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. More than one-third (36.7%) of women in rural areas and nearly two-thirds (63.4%) 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 (92.1%-95.9%), a higher proportion of wealthier women indicated the return of menses (33.5%-68.7%).

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 2019-2021 Cohort

Background characteristics	Menses returned	Resumed sexual activities	Menses returned and resumed sexual activities	Number of women (weighted)
Overall	**44.8**	**94.5**	**42.6**	**2,093**
Age				
15-19	56.5	90.5	49.1	225
20-24	49.3	93.9	46.9	491
25-29	43.6	95.3	42.0	631
30-34	40.0	95.5	38.7	393
35-39	41.1	95.3	40.8	269
40-49	30.7	94.8	29.0	84
Education				
No education	35.3	94.3	34.0	854
Primary	44.7	95.2	42.4	851
Secondary	59.0	90.3	53.5	240
More than secondary	76.8	98.3	75.9	148
Parity				
0 children	63.4	95.1	60.3	358
1-2 children	49.3	92.3	46.1	787
3-4 children	35.4	96.9	34.3	472
5+ children	32.6	95.3	31.7	476
Region*				
Afar	57.5	89.4	53.1	43
Amhara	38.3	94.8	37.2	436
Oromia	48.0	94.5	45.5	941
SNNP	39.3	96.3	38.1	493
Addis Ababa	79.0	96.4	76.7	82
Residence				
Rural	38.6	94.4	36.7	1,629
Urban	66.6	94.7	63.4	464
Wealth				
Lowest quintile	33.5	92.1	29.7	422
Lower quintile	34.7	94.5	33.3	429
Middle quintile	41.3	96.0	40.2	420
Higher quintile	46.8	94.0	45.3	418
Highest quintile	68.7	95.9	65.6	405

**Note:* Row percentages presented; interviews from Tigray are included in the overall estimate but excluded from regional comparisons.

Contraceptive Use and Method Type

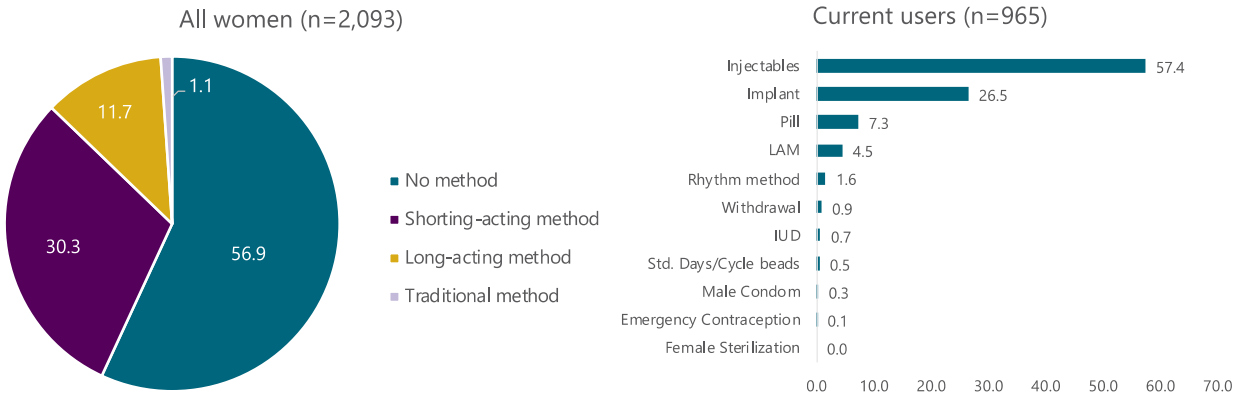
Definition: Women who were current contraceptive users reported the type of method they were using. Women who were pregnant at time of the one-year interview were considered non-users (n=22). Figure 3 (right panel) presents the method distribution (most effective) among all current users. Table 5 shows 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, standard days/cycle beads, and lactational amenorrhea (LAM)
- Long-acting methods: female sterilization, implant, and IUD
- Traditional methods: rhythm method and withdrawal

Key findings:

- Over half of women (56.9%) 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 (57.4%), followed by implant (26.5%), and contraceptive pills (7.3%).

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 20-24 having the greatest proportion of long-acting method use (15.4%). The percentage of non-users ranged from 45.3% among women aged 20-24 to 80.1% among women aged 40-49.
- **Education:** The majority of women with more than a secondary education were using a contraceptive method (73.5%), while fewer than one-third of women with no education were (30.3%). Fewer women with no education were using a long-acting method (7.3%), compared to 22.2% of women with more than secondary education.

- **Parity:** Among primiparous women, nearly two in five were not using any contraceptive method (37.8%), 44.8% were using a short-acting method, and 15.2% were using a long-acting method.
- **Region:** Over half of women in Addis Ababa were using a short-acting method (52.6%), compared to less than two percent in Afar (1.4%). The proportion of non-users ranged from 15.0% in Addis Ababa to 97.2% in Afar.
- **Residence:** Nearly two-thirds of women in rural areas were not using any contraceptive method (64.6%), compared to three in ten women living in urban areas (30.0%). A greater proportion of women in urban areas were using long-acting methods (20.6%), compared to women living in rural areas (9.2%).
- **Wealth:** The proportion of women not using any contraceptive method decreased with increasing wealth (75.1%-27.4%). Conversely, the percentage of women using short-acting (19.1%-46.3%) and long-acting methods (4.8%-23.1%) 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 2019-2021 Cohort

Background characteristics	No method	Shorting-acting method	Long-acting method	Traditional method	Number of women (weighted)
Overall	**56.9**	**30.3**	**11.7**	**1.1**	**2,093**
Age					
15-19	59.0	30.2	10.0	0.7	225
20-24	45.3	38.6	15.4	0.7	491
25-29	54.5	30.6	13.6	1.4	631
30-34	60.6	28.9	9.0	1.5	393
35-39	69.6	20.6	9.1	0.8	269
40-49	80.1	16.3	2.7	0.9	84
Education					
No education	69.7	22.4	7.3	0.5	854
Primary	54.9	31.7	13.0	0.5	851
Secondary	37.4	45.0	16.7	0.9	240
More than secondary	26.5	43.5	22.2	7.8	148
Parity					
0 children	37.8	44.8	15.2	2.2	358
1-2 children	48.4	34.8	16.0	0.9	787
3-4 children	62.9	27.1	8.6	1.4	472
5+ children	79.5	15.1	5.2	0.2	476
Region*					
Afar	97.2	1.4	1.4	0.0	43
Amhara	55.1	37.3	7.1	0.5	436
Oromia	60.2	27.5	11.3	1.0	941
SNNP	54.6	30.2	13.7	1.5	493
Addis Ababa	15.0	52.6	27.8	4.6	82
Residence					
Rural	64.6	25.6	9.2	0.6	1,629
Urban	30.0	46.6	20.6	2.8	464
Wealth					
Lowest quintile	75.1	19.1	4.8	1.0	422
Lower quintile	68.5	24.2	7.0	0.2	429
Middle quintile	58.2	27.3	13.5	1.0	420
Higher quintile	54.1	35.2	10.8	0.0	418
Highest quintile	27.4	46.3	23.1	3.2	405

**Note:* Row percentages presented; Interviews from Tigray are included in the overall estimate but excluded from regional comparisons.

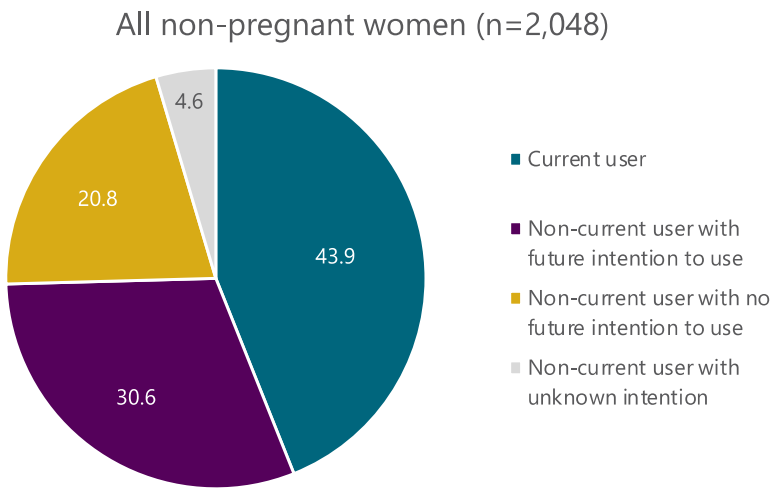
Future Intention to Use Contraception

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, 45 women reported being currently pregnant at the one-year interview.

Key findings:

- Over two in five women (43.9%) 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, 30.6% were not current users of FP, but intended to use FP in the future; 20.8% were not current users of FP and did not intend to use FP in the future; 4.6% were non-users and were not sure about future intention.

Figure 4. Future family planning use intention



Contraceptive intention patterns by background characteristics:

- **Age:** Over half of women (55.8%) ages 20-24 were using a method of FP at one year postpartum, compared to one in five women ages 40-49 (20.3%). Roughly one in five women ages 20-24 (22.3%) were not using FP and intended to use in the future, compared to nearly half of women ages 40-49 (46.8%).

- **Education:** The proportion of current contraceptive users increased with education, ranging from 30.6% among women with no education to 75.7% among women with more than secondary education. One-third (33.1%) 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 8.3% of women with more than secondary education.
- **Parity:** Two-thirds of women who were nulliparous at enrollment were current users of contraception (64.2%), compared to one in five women with five or more children at enrollment (20.8%). Among women who were nulliparous at enrollment, 15.1% 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 (31.6%).
- **Region:** The proportion of women using contraception at one year postpartum ranged from 2.9% in Afar to 86.5% in Addis Ababa. A very small proportion of women in Addis Ababa were non-users with no intention to use FP in the future (4.6%), compared to 87.3% in Afar.
- **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 (36.2%) was greater than women living in urban areas (11.2%). Nearly one-fourth of women in rural areas were not using contraception and did not intend to use it in the future (23.9%), compared to one in ten women in urban areas (9.9%).
- **Wealth:** The proportion of women who were using any contraception at one year postpartum was highest among women in the highest wealth quintile (74.0%) and lowest among the lowest wealth quintile (25.2%). One-third of women in the lowest quintile were non-users with no future intention to use (35.1%), compared to only 8.7% 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 2019-2021 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)[1]
Overall	**43.9**	**30.6**	**20.8**	**4.6**	**2,048**
Age					
15-19	41.8	28.7	21.5	7.9	220
20-24	55.8	22.3	17.9	4.1	481
25-29	46.8	28.5	19.8	4.9	613
30-34	39.9	36.7	19.8	3.6	387
35-39	30.8	38.2	26.3	4.6	265
40-49	20.3	46.8	31.6	1.3	82
Education					
No education	30.6	32.7	33.1	3.5	844
Primary	46.5	35.0	13.4	5.1	825
Secondary	63.4	21.6	10.4	4.6	236
More than secondary	75.7	7.9	8.3	8.0	143
Parity					
0 children	64.2	15.0	15.1	5.7	346
1-2 children	52.5	25.0	16.5	6.0	772
3-4 children	37.9	37.6	21.5	3.1	462
5+ children	20.8	44.6	31.6	2.9	467
Region[2]					
Afar	2.9	4.2	87.3	5.6	42
Amhara	45.6	32.4	15.9	6.1	429
Oromia	40.6	33.3	20.9	5.2	922
SNNP	46.7	28.1	22.7	2.4	478
Addis Ababa	86.5	3.7	4.6	5.2	81
Residence					
Rural	36.1	36.2	23.9	3.8	1,594
Urban	71.4	11.2	9.9	7.6	454
Wealth					
Lowest quintile	25.2	34.4	35.1	5.3	417
Lower quintile	32.8	45.3	17.8	4.1	411
Middle quintile	42.4	33.5	21.8	2.3	413
Higher quintile	46.7	29.1	20.2	4.0	410
Highest quintile	74.0	10.0	8.7	7.4	397

**Notes*

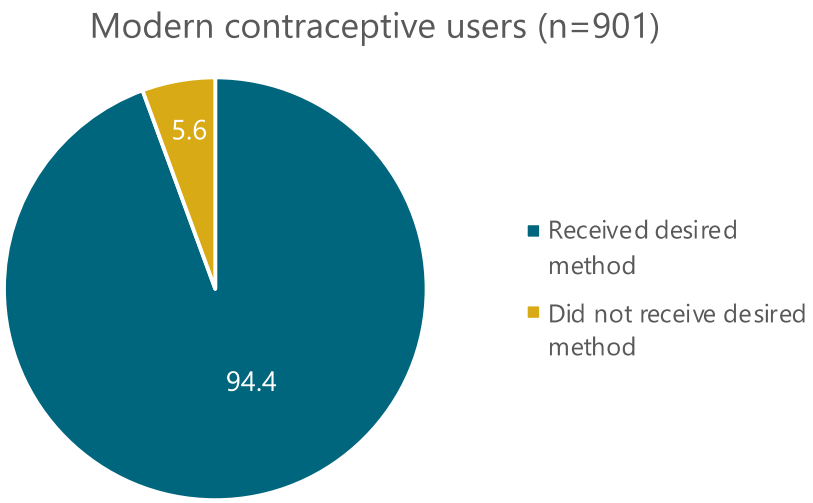
1. 45 women who were pregnant at the time of one-year interview excluded.
2. Interviews from Tigray are included in the overall estimate but excluded from regional comparisons.

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 vast majority of contraceptive users one year postpartum (94.4%) 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 (80.6%), followed by less need for follow-up (37.9%), and fewer side effects than other methods (26.8%)
- Users of a short-acting method most commonly reported fewer side effects compared to other methods as the reason for choosing their current method (55.7%), followed by less need for follow-up (27.8%), and long duration of protection (13.1%).

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 2019-2021 Cohort

	Long-acting methods users	Shorting-acting methods users
Long duration of protection	80.6	13.1
Less need for follow-up	37.9	27.8
Unavailability of other methods	4.9	2.4
Provider recommended	10.0	9.4
Fewer side effects than other methods	26.8	55.7
Can use without husband's knowledge	0.3	1.7
Other	2.9	12.0
Number of women	**280**	**655**

**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 (51.5%).
- One in five non-users reported they were worried about side effects (20.1%).
- Roughly one in five women (19.0%) indicated they were not using contraception due to religious prohibitions or partner disapproval.
- Less than 1% of non-users reported they were not using contraception due to lack of availability of their desired method (0.4%) and few non-users reported they did not use contraception because they wanted to become pregnant (6.4%).

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 2019-2021 Cohort

	Percent
Has not resumed menstruation	51.5
Worried about side effects	20.1
Religious prohibition or partner disapproves	19.0
Currently breastfeeding	14.6
No/infrequent sex or prefers abstinence	11.7
Other	6.9
Wants to become pregnant	6.4
FP might make getting pregnant again difficult	2.3
Do not know enough about family planning	1.6
Desired method not available	0.4
Number of non-current users	**1,045**

**Note*: Column percentages presented.

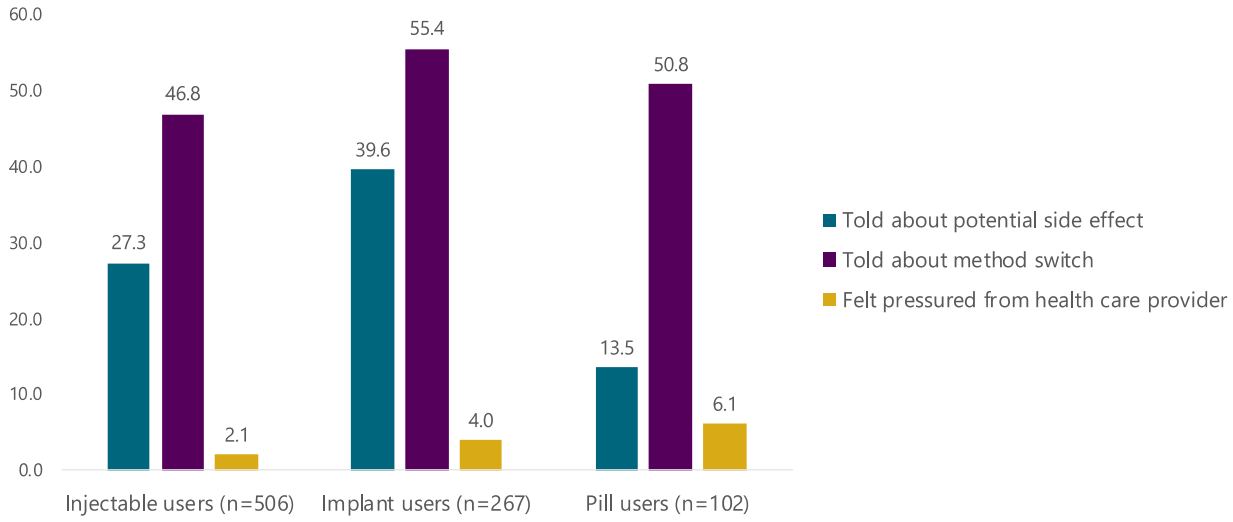
Contraceptive Counseling

Definition: All current users of contraception were asked whether they were informed about potential side effects, whether they were told that they could switch to a different method, and whether they felt pressured by any health service providers to accept the method. The proportions of women who responded "yes" to each of these three 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 half of all injectable users were told they could switch methods (46.8%) but only one-fourth were told about potential side effects (27.3%).
- More than half of all implant users (55.4%) were told they could switch to a different method; two in five were told about potential side effects (39.6%), and 4.0% felt pressured by a health care provider to accept the implant.
- While half of pill users were told they could switch methods (50.8%), fewer were told about potential side effects (13.5%).

Figure 6. Family planning counseling



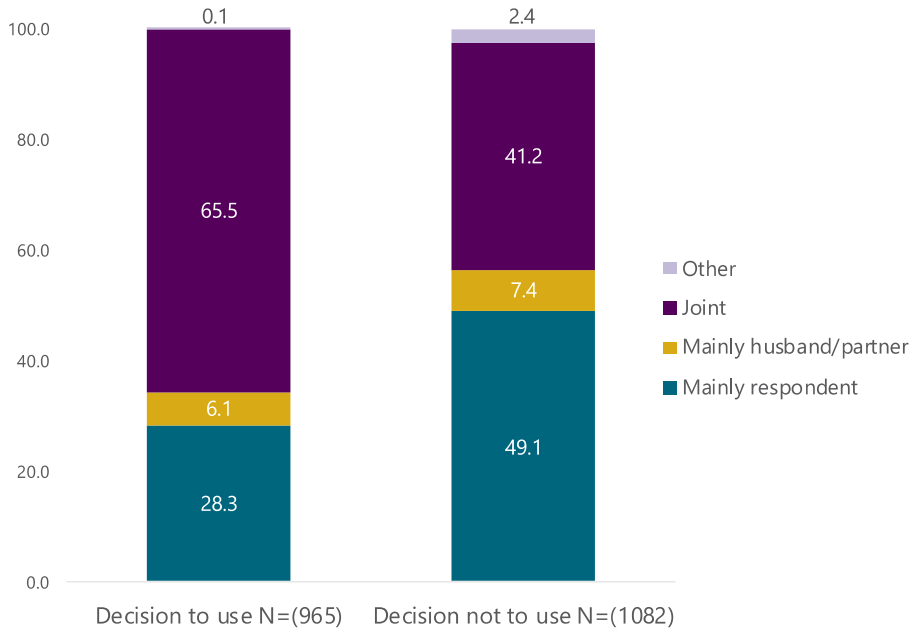
Decision-making for Contraception

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 (80.7%; Table 9).
- Among current users, the majority (65.5%) indicated that their decision to use contraception was a joint decision; 6.1% reported the decision was mainly their partner's, and 28.3% indicated the decision was mainly theirs.
- Among non-users, almost half (49.1%) decided not to use contraception by herself; two in five non-users decided jointly with her partner (41.2%); nearly one in ten (7.4%) 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 20-24 (83.3%) and lowest among women aged 15-19 years old (79.9%).
- **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 (72.7%); 87.1% 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 86.3% of women with no prior children at enrollment and 68.8% 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 (89.4%).
- **Residence:** Approximately 87.3% of urban women and 77.0% 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 61.1% among the poorest women to 88.5% 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 2019-2021 Cohort

Background characteristics	Percent	Number of women (weighted)
Overall	**80.7**	**965**
Age		
15-19	79.9	99
20-24	83.3	288
25-29	81.3	308
30-34	78.0	166
35-39	80.7	88
40-49	*	18
Education		
No education	72.7	277
Primary	82.1	411
Secondary	86.6	161
More than secondary	87.1	116
Parity		
0 children	86.3	238
1-2 children	81.1	435
3-4 children	79.5	188
5+ children	68.8	104
Region*		
Afar	*	1
Amhara	80.0	208
Oromia	77.5	398
SNNP	85.6	238
Addis Ababa	89.4	74
Residence		
Rural	77.0	618
Urban	87.3	347
Wealth		
Lowest quintile	61.1	113
Lower quintile	80.6	145
Middle quintile	79.8	188
Higher quintile	80.6	205
Highest quintile	88.5	315

**Note:* Interviews from Tigray are included in the overall estimate but excluded from regional comparisons.

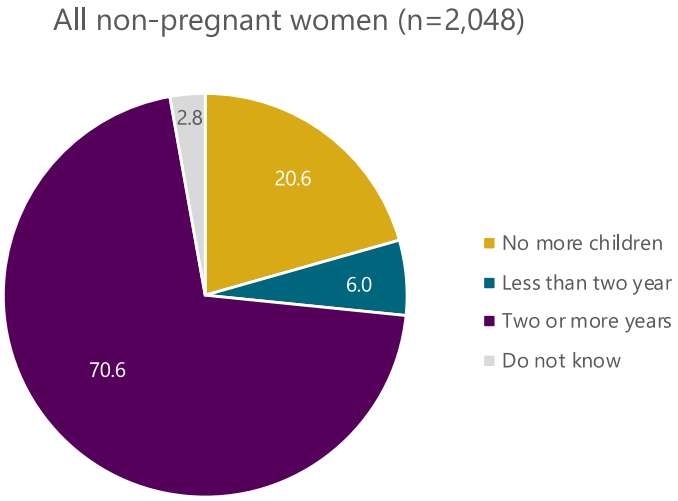
Future Pregnancy Intention

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 (20.6%) reported not wanting to have any more children.
- Overall, the majority (70.6%) 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 83.8% for women aged 15-19 to less than one-third of women aged 40-49. 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 (79.6%), compared to three-fifths of women with no education (60.1%). Approximately one in ten women with more than secondary education reported they did not want any more children (9.7%).
- **Parity:** The majority (83.6%) 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 (48.5%).

- **Region:** The proportion of women not wanting more children ranged from 2.3% in Afar to 26.0% in Amhara. Over half of women in Amhara (67.0%), Oromia (73.6%), SNNP (71.3%), and Addis Ababa (63.5%) indicated wanting children in two or more years.
- **Residence:** More rural women (22.3%) than urban women (14.8%) reported wanting no more children. Roughly seven in ten rural (69.4%) and urban (74.9%) women wanted to wait two or more years before having another child.
- **Wealth:** A slightly lower proportion of women in the highest wealth quintile indicated not wanting any more children (13.6%), compared to less wealthy women (19.5%-26.5%).

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 (32.0%) or sort of unhappy (34.4%) if they were pregnant at the time of the one-year postpartum interview.
- Approximately one in ten (12.6%) women would feel sort of happy if they were pregnant; 4.5% would feel very happy.

Figure 9. Emotional response toward potential pregnancy

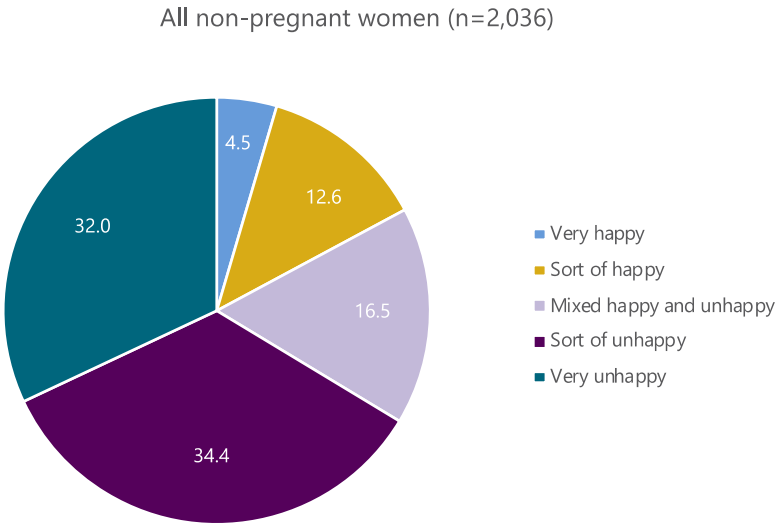


Table 10. Future pregnancy intention, by background characteristics

Among women approximately one year postpartum, the percentage of those who wanted no more children, would wait less than two years and two or more years before having another child, by background characteristics, PMA Ethiopia 2019-2021 Cohort

Background characteristics	No more children	Less than two years	Two or more years	Do not know	Number of women (weighted)[1]
Overall	**20.6**	**6.0**	**70.6**	**2.8**	**2,048**
Age					
15-19	7.3	7.7	83.8	1.2	172
20-24	8.2	6.5	83.5	1.8	500
25-29	10.9	7.6	78.8	2.8	671
30-34	30.3	4.9	60.1	4.6	394
35-39	48.0	3.4	45.4	3.2	252
40-49	67.1	0.0	29.0	4.0	59
Education					
No education	29.9	6.3	60.1	3.7	823
Primary	15.5	5.4	77.2	1.9	739
Secondary	12.1	5.1	79.5	3.3	281
More than secondary	9.7	9.0	79.6	1.7	205
Parity					
0 children	3.8	9.5	83.6	3.1	362
1-2 children	12.5	7.6	77.3	2.7	824
3-4 children	22.8	2.9	72.0	2.2	469
5+ children	44.3	3.8	48.5	3.4	393
Region[2]					
Afar	2.3	48.9	44.8	4.0	203
Amhara	26.0	4.2	67.0	2.9	418
Oromia	17.6	5.8	73.6	3.0	581
SNNP	23.0	4.6	71.3	1.1	521
Addis Ababa	21.5	11.1	63.5	3.9	229
Residence					
Rural	22.3	5.8	69.4	2.6	1,310
Urban	14.8	6.7	74.9	3.6	738
Wealth					
Lowest quintile	19.5	5.9	72.9	1.7	378
Lower quintile	26.5	3.9	64.8	4.8	321
Middle quintile	23.5	8.6	64.7	3.2	337
Higher quintile	19.8	4.5	74.5	1.2	373
Highest quintile	13.6	7.0	76.2	3.2	639

**Notes*

1. 45 women who were pregnant at the time of one-year interview were excluded.
2. Interviews from Tigray are included in the overall estimate but excluded from regional comparisons.

Maternal Health

Postnatal Care Coverage and Counseling

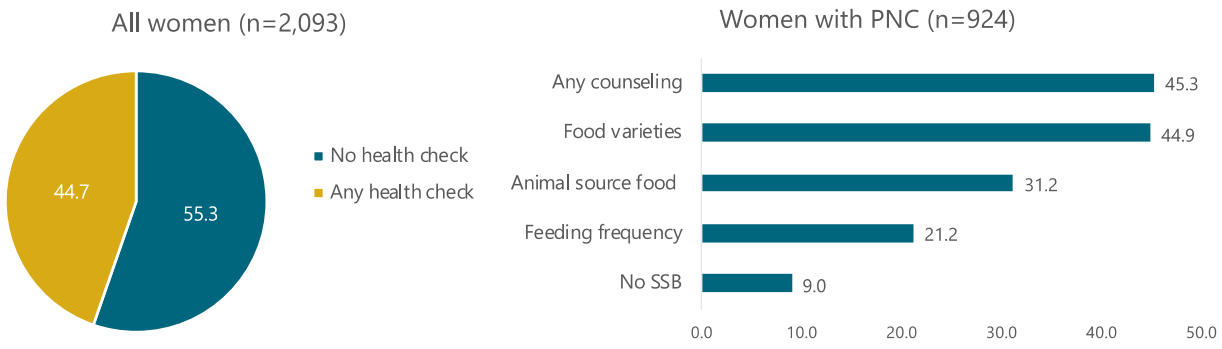
Definition: During the one-year postpartum interview, respondents were asked whether they had any health checks either for themselves or their children in the past six months from either a health extension worker or other professional healthcare providers. Those who answered "yes" to this question were 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 child nutrition counseling content 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 (44.7%) received any PNC in the past six months.
- Among women who received PNC, less than one in two (44.9%) received counseling on giving a variety of foods to the baby; three in ten (31.2%) were counseled on feeding animal source foods; two in ten (21.2%) received counseling on feeding frequencies.

Figure 10. Postnatal care and counseling



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 15-19 (49.4%) and lowest among those aged 40-49 (37.4%). However, among those with PNC, only one in three (33.8%) women aged 15-19 received any counseling on child nutrition, compared to more than half (53.8%) of women who were 35-39 years of age.
- **Education:** While more than half (54.3%) of women who attended more than secondary education received any PNC in the past six months, a smaller proportion (39.2%) 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 declined with parity, from almost half (48.7%) among women who were nulliparous at enrollment to less than two in five (36.9%) among women who had five or more children.
- **Region:** The proportion of women who reported receiving any PNC in the past six months ranged from 38.4% in Afar to 56.3% in Addis Ababa. Among women who had any PNC, one in three (33.3%) women in Oromia received any counseling, compared to three in five (61.5%) women in Addis Ababa.
- **Residence:** Over half (54.3%) of women in urban areas and two in five (41.9%) women in rural areas received any PNC between six months and one year postpartum. Compared to rural women, however, a lower proportion of urban women who received PNC were counseled on child nutrition topics.
- **Wealth:** Fewer than two in five (38.4%) women in the lowest wealth quintile received any PNC in the past six months, compared to three in five (59.3%) women in the highest wealth quintile.

Table 11. Postnatal care and counseling, by background characteristics

Percentage of women with living infants at one year who received any postnatal care (PNC) in the past six months, and among those who received any PNC, the percentage receiving each form of PNC counseling, by background characteristics, PMA Ethiopia 2019-2021 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	**44.7**	**2,093**	**44.9**	**31.2**	**21.2**	**9.0**	**45.3**	**924**
Age								
15-19	49.4	225	33.5	20.1	9.7	3.1	33.8	113
20-24	40.7	491	36.3	24.3	17.6	8.9	37.1	203
25-29	47.3	631	48.9	34.9	20.2	9.1	49.8	303
30-34	44.2	393	45.4	32.8	21.7	8.8	47.1	176
35-39	44.8	269	57.8	41.3	39.0	17.4	53.8	122
40-49	37.4	84	*	*	*	*	*	32
Education								
No education	39.2	854	43.3	29.5	24.0	10.3	43.7	340
Primary	46.1	851	48.1	34.9	19.8	7.5	47.3	398
Secondary	53.2	240	41.7	26.0	19.1	9.6	45.5	130
More than secondary	54.3	148	41.6	29.2	19.6	10.2	42.1	82
Parity								
0 children	48.7	358	35.6	21.0	14.2	5.6	36.0	177
1-2 children	48.5	787	43.1	29.6	19.1	9.5	43.8	388
3-4 children	43.1	472	48.7	38.4	24.3	11.2	50.6	207
5+ children	36.9	476	54.0	36.5	29.2	8.7	51.9	178
Region*								
Afar	38.4	43	42.0	30.0	29.1	25.5	44.2	17
Amhara	48.9	436	54.9	43.2	31.4	14.6	55.5	219
Oromia	42.8	941	32.9	20.9	9.4	4.9	33.3	414
SNNP	40.4	493	48.0	30.3	22.0	8.2	49.8	204
Addis Ababa	56.3	82	60.1	27.8	19.8	9.7	61.5	47
Residence								
Rural	41.9	1,629	47.3	33.3	23.0	8.4	47.3	694
Urban	54.3	464	38.6	25.8	16.4	10.8	39.8	256
Wealth								
Lowest quintile	38.4	422	46.0	34.0	30.3	5.1	47.8	165
Lower quintile	42.6	429	48.2	29.3	19.7	5.6	45.7	185
Middle quintile	43.2	420	45.8	33.4	20.4	11.7	47.5	184
Higher quintile	40.5	418	40.4	30.5	18.4	10.2	40.3	172
Highest quintile	59.3	405	44.4	29.5	18.5	11.3	45.2	244

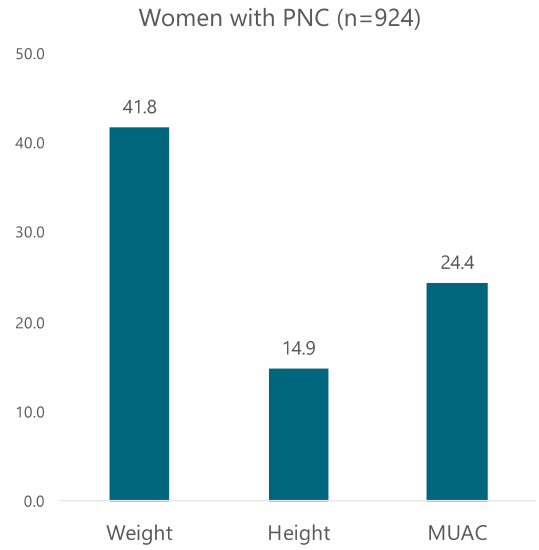
**Note:* Interviews from Tigray are included in the overall estimate but excluded from regional comparisons.

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, about two in five (41.8%) women reported that their children's weight was measured at PNC; fewer than one-quarter reported that their children's MUAC (24.4%) and height (14.9%) 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 (32.9%) and highest among women aged 20-24 (48.4%). Approximately one in seven (12.4%-19.9%) and one in four (22.0%-30.8%) women reported receipt of height and MUAC measurement at PNC, respectively, across age groups.
- **Education:** Fewer than two in five (36.4%) women with no education and three in five (61.0%) 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 (13.1%-15.6%). MUAC measurement, on the other hand,

was the highest among those with no education (27.6%) and lowest among those with more than secondary education (15.4%).

- **Parity:** Almost half (48.0%) of women who were nulliparous at enrollment reported receipt of weight measurement at PNC, compared to one in three (34.3%) 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 only three in ten (30.3%) women in SNNP reported weight measurement at PNC, the majority (83.2%) of women in Addis Ababa did.
- **Residence:** Receipt of weight measurement was higher among urban women (59.0% versus 35.2%), while receipt of height (15.2% versus 14.2%; rural versus urban) and MUAC measurements (27.7% versus 15.8%; 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 2019-2021 Cohort

Background characteristics	Weight	Height	MUAC	Number of women with PNC (weighted)
Overall	**41.8**	**14.9**	**24.4**	**924**
Age				
15-19	32.9	12.4	27.3	113
20-24	48.4	16.9	22.0	203
25-29	41.8	13.5	22.2	303
30-34	39.0	15.0	24.7	176
35-39	46.1	19.9	30.8	122
40-49	*	*	*	32
Education				
No education	36.4	14.7	27.6	340
Primary	40.2	15.6	23.4	398
Secondary	48.3	13.1	24.5	130
More than secondary	61.0	15.3	15.4	82
Parity				
0 children	48.0	16.8	23.6	177
1-2 children	44.9	14.6	23.4	388
3-4 children	37.0	13.8	27.0	207
5+ children	34.3	15.1	24.2	178
Region*				
Afar	63.0	38.2	43.7	17
Amhara	46.8	20.2	32.5	219
Oromia	38.8	10.4	18.6	414
SNNP	30.3	12.6	15.4	204
Addis Ababa	83.2	16.1	14.7	47
Residence				
Rural	35.2	15.2	27.7	694
Urban	59.0	14.2	15.8	256
Wealth				
Lowest quintile	39.3	18.6	32.2	165
Lower quintile	30.1	13.4	31.1	185
Middle quintile	31.1	12.2	21.5	184
Higher quintile	41.2	14.3	24.3	172
Highest quintile	59.8	15.9	16.6	244

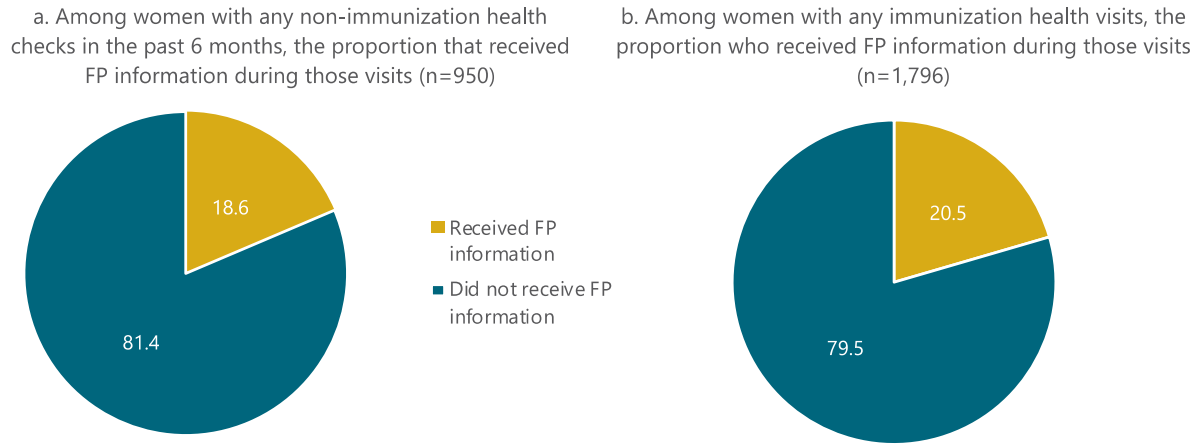
**Note:* Interviews from Tigray are included in the overall estimate but excluded from regional comparisons.

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 (18.6%) and immunization health checks (20.5%), respectively.

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



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:

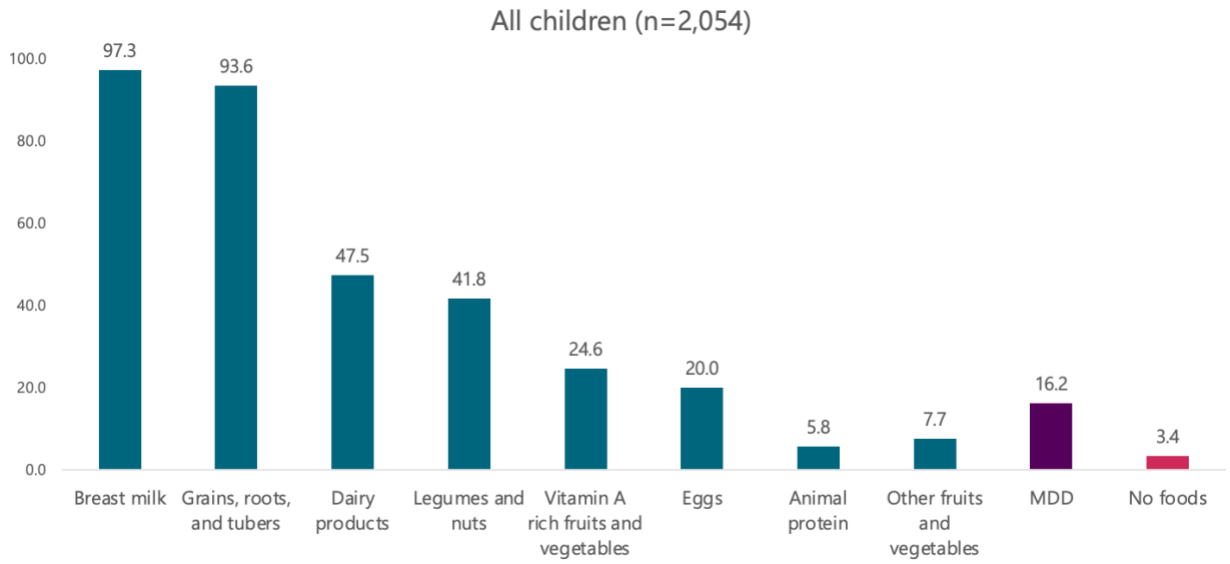
- **Breast milk**
- **Grain, roots, and tuber foods**, including root vegetables, gruel (sweetened or unsweetened), fenugreek (sweetened or unsweetened), grains (such as rice, noodles, and porridge), and any commercially fortified baby foods
- **Legumes and nuts**, including any foods made from beans, 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 13 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 13.

Key findings:

- The majority of children approximate 12 months old were given breast milk (97.3%) and grains, roots, and tuber foods (93.6%) in the last 24 hours.
- Other commonly consumed food groups were dairy products (47.5%), legumes and nuts (41.8%), and Vitamin A-rich fruits and vegetables (24.6%).
- One in six (16.2%) children met MDD, that is, were given five or more food groups.
- A very small proportion (3.4%) of children were not given any food.

Figure 13. 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 children whose mothers were 25-29 years old and lowest among children whose mothers were 40-49 years of age.
- **Mother's Education:** Child nutrition patterns showed large variability by mother's education level. While over two in five (42.3%) children whose mothers attended more than secondary education met MDD, only one in ten (9.2%) children whose mothers had no education did.
- **Mother's Parity:** First-born children had the highest percentage of meeting MDD (18.7%), while children whose mothers had five or more children at enrollment had the lowest percentage (13.8%).
- **Region:** The percentage of children meeting MDD was 42.7% in Addis Ababa (highest) and 2.1% in Afar (lowest). In Afar, while the majority of children consumed breast milk (96.2%), grains (69.9%), and dairy products (74.7%), less than one in ten consumed other foods (0.5%-6.1%).
- **Residence:** Approximately one in ten (12.6%) and three in ten (28.5%) children in rural and urban areas met MDD, respectively.
- **Wealth:** About one in three (32.0%) children from the wealthiest families met MDD, compared to one in ten (9.4%) children from the poorest families. Foods almost universally consumed by all children across wealth status were breast milk (91.1%-98.9%) and grains (90.3%-96.5%).

Table 13. Child nutrition, by background characteristics

Among children approximately one-year 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 2019-2021 Cohort

Background characteristics	Breast milk	Grains, roots, and tubers	Dairy products	Legumes and nuts	Vitamin A rich fruits and vegetables	Eggs	Animal protein	Other fruits and vegetables	MDD	No foods	Number of children (weighted)
Overall	**97.3**	**93.6**	**47.5**	**41.8**	**24.6**	**20.0**	**5.8**	**7.7**	**16.2**	**3.4**	**2,054**
Age											
15-19	97.5	91.7	44.9	34.4	24.6	21.7	8.9	7.9	13.0	5.0	220
20-24	97.5	92.3	47.6	38.4	25.3	19.8	3.7	7.5	14.4	3.5	479
25-29	96.1	95.2	51.3	46.7	25.5	20.9	4.9	8.8	19.3	2.6	632
30-34	98.2	93.4	45.2	42.4	21.3	22.0	6.8	9.1	17.4	4.6	390
35-39	99.1	93.1	48.3	39.9	28.4	16.6	6.4	5.6	14.8	2.3	252
40-49	96.4	96.9	33.1	46.9	18.9	10.8	10.4	0.8	9.4	1.4	82
Education											
No education	98.7	92.4	40.0	38.2	17.6	13.6	6.3	3.3	9.2	4.5	833
Primary	97.9	92.5	46.9	39.9	25.7	20.2	4.4	8.5	14.8	3.5	831
Secondary	95.1	98.5	56.2	51.6	34.4	28.3	6.4	13.6	28.7	0.6	241
More than secondary	90.8	98.8	78.8	57.1	42.5	41.6	9.8	18.6	42.3	0.4	149
Parity											
0 children	93.2	93.7	51.6	45.5	29.9	25.4	8.1	9.2	18.7	3.4	349
1-2 children	97.9	93.8	49.0	41.7	26.2	20.8	4.8	9.1	17.7	3.6	782
3-4 children	98.1	93.5	44.1	37.9	21.8	18.9	5.4	8.7	14.1	2.6	466
5+ children	98.8	93.3	45.2	43.1	20.8	15.6	6.3	3.3	13.8	3.9	458
Region*											
Afar	96.2	69.9	74.7	1.1	4.0	2.2	6.1	0.5	2.1	7.7	41
Amhara	98.1	95.8	30.4	66.5	11.4	15.7	9.1	4.6	13.3	3.7	434
Oromia	96.9	93.9	50.9	40.5	26.4	22.0	3.9	6.5	15.6	2.9	913
SNNP	98.4	90.7	51.3	23.3	34.7	20.2	4.8	12.6	18.0	5.1	487
Addis Ababa	88.7	98.2	73.5	57.9	44.6	33.8	15.6	16.4	42.7	0.9	83
Residence											
Rural	98.7	92.9	44.8	39.8	21.2	17.1	4.4	5.8	12.6	3.9	1,590
Urban	92.6	96.0	56.7	48.7	36.3	29.9	10.6	14.6	28.5	1.6	464
Wealth											
Lowest quintile	98.9	90.3	43.8	35.0	15.2	15.9	5.4	4.2	9.4	4.8	417
Lower quintile	98.5	91.8	40.7	35.7	23.9	14.9	4.3	5.4	9.4	3.5	408
Middle quintile	98.7	94.0	48.2	43.0	22.6	15.3	3.3	4.5	12.3	3.4	406
Higher quintile	99.4	95.5	43.8	44.4	22.9	21.2	5.4	7.7	18.1	3.7	417
Highest quintile	91.1	96.5	61.3	51.1	38.8	33.0	10.7	17.0	32.0	1.3	406

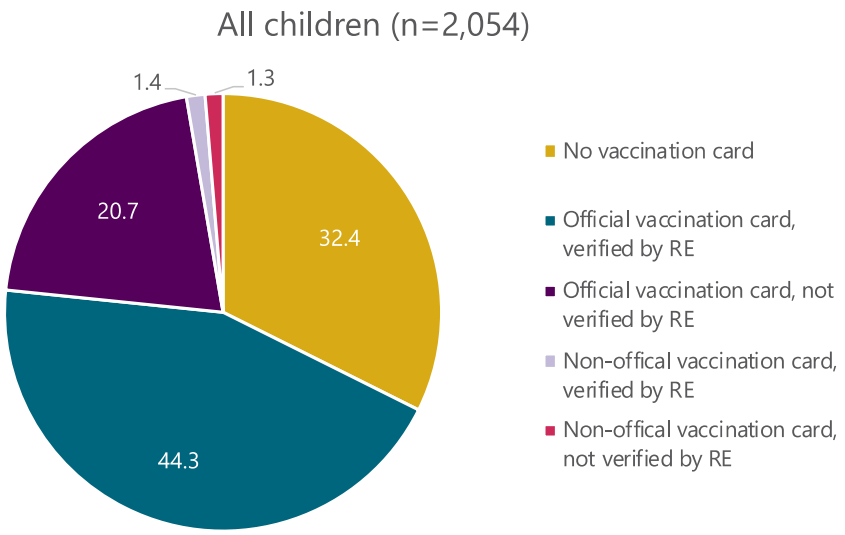
**Note:* Interviews from Tigray are included in the overall estimates but excluded from regional comparisons.

Vaccination Documentation

Definition: During the one-year interview, all respondents with children 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 14).

Key findings: Overall, roughly one-third (32.4%) of children had no vaccination card. Over two in five (44.3%) children had a verified official vaccination card; one in five (20.7%) had an unverified official vaccination card; a small proportion had a non-official vaccination card (2.7% total).

Figure 14. Types of vaccination documentation



Child Immunization

Definition: Women with living children 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. Children 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.[2,3]

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

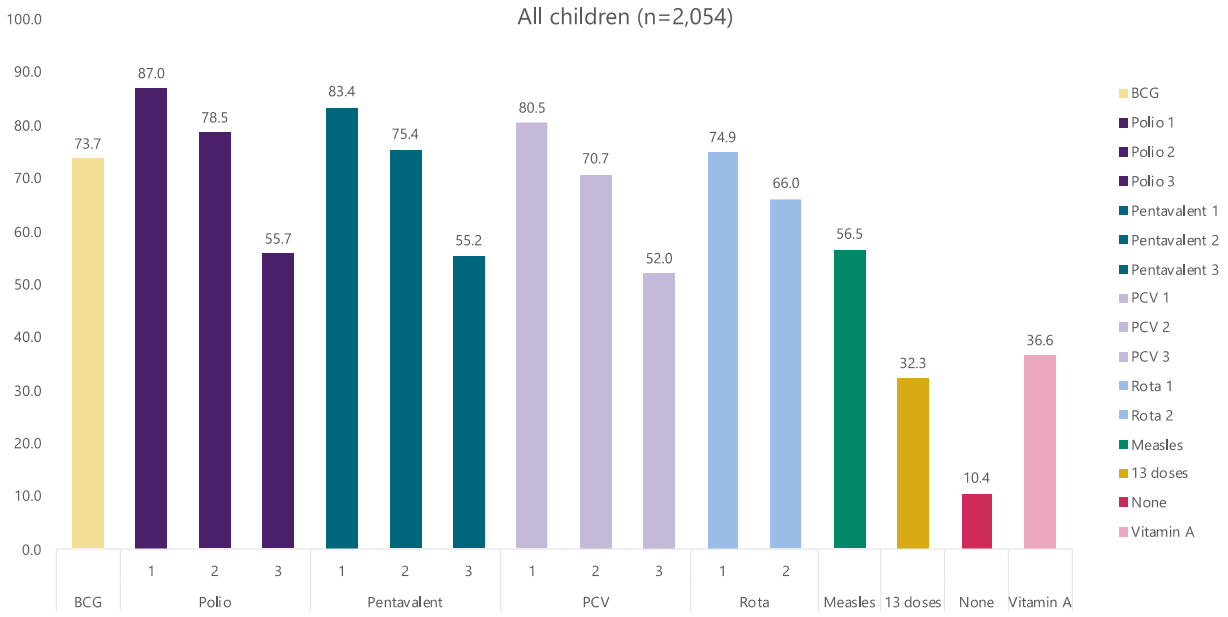
Key findings:

- As shown in Figure 15, about one in three (32.3%) children received all 13 vaccines, while one in ten (10.4%) children received no vaccination.
    - Specifically, more than seven in ten (73.7%) children received the BCG vaccine.
    - More than half received all three doses polio (55.7%), pentavalent (55.2%), and PCV vaccines (52.0%).
    - Two-thirds (66.0%) of children received two doses of Rota vaccines.
    - Almost three in five (56.5%) children received the measles vaccine.
- More than one in three children received Vitamin A supplementation (36.6%).

[2] 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

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

Figure 15. Child vaccination



Vaccination patterns by background characteristics:

- **Mother's Age:** The percentage of children receiving all 13 vaccines ranged from one in five (19.7%) among children of mothers aged 15-19 to almost two in five (37.4%) among children whose mothers were 25-29 years of age.
- **Mother's Education:** While 15.4% of children whose mothers had no education did not receive any vaccination, all children whose mothers had more than secondary education received at least one vaccination (100.0%).
- **Mother's Parity:** More than two in five first-born children received all 13 doses of vaccines (42.4%), while only one in five children whose mother had five or more children did (20.3%). Receipt of vitamin A supplementation was also higher for firstborns.
- **Region:** Vaccination coverage had wide regional differences and was particularly low in Afar. For example, the coverage of BCG vaccine ranged from 67.3%-97.4% in other regions but was only 30.1% in Afar.
- **Residence:** About one in five (23.1%) children in rural areas and more than three in five (64.0%) children in urban areas received all 13 doses of vaccines.
- **Wealth:** Disparities in vaccine coverage by wealth were also observed. Seven in ten (69.7%) children from the wealthiest families received all 13 vaccines, compared to about one in six (17.7%) children from the poorest families.

Table 14. 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 2019-2021 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	73.7	87.0	78.5	55.7	83.4	75.4	55.2	80.5	70.7	52.0	74.9	66.0	56.5	32.3	10.4	36.6	2,054
Age																	
15-19	72.5	85.2	75.9	47.8	79.7	74.4	49.9	75.4	67.5	46.9	64.9	56.0	47.9	19.7	12.0	27.4	220
20-24	75.1	87.6	79.7	54.4	84.9	75.7	56.3	81.4	71.3	53.3	77.0	68.3	62.1	34.6	9.5	38.5	479
25-29	73.2	87.7	77.9	59.6	84.3	75.7	58.4	83.0	72.2	55.5	77.3	68.7	58.7	37.4	9.8	39.6	632
30-34	72.8	87.3	78.7	58.2	82.3	75.2	54.7	80.4	70.8	51.1	73.6	64.1	56.0	31.7	10.5	35.5	390
35-39	75.5	86.3	79.8	54.3	83.3	76.6	53.7	77.8	69.3	50.6	75.5	66.5	52.0	30.2	11.4	36.4	252
40-49	70.1	85.0	77.3	47.4	83.3	72.7	45.1	78.1	68.0	40.8	74.7	65.2	44.9	23.3	13.3	33.4	82
Education																	
No education	64.8	81.7	70.6	45.7	77.0	65.3	44.2	73.4	59.8	41.2	68.0	57.1	44.4	21.8	15.4	30.5	833
Primary	76.1	88.1	79.3	54.6	85.3	77.7	54.6	82.4	72.6	51.5	73.8	64.5	56.7	30.1	9.4	35.3	831
Secondary	84.4	96.0	90.4	75.6	91.3	89.2	76.9	89.2	86.3	73.7	90.3	84.5	76.2	54.9	3.4	47.6	241
More than secondary	92.5	96.6	98.8	86.3	95.4	97.2	85.4	95.4	95.8	80.4	94.5	93.8	90.4	67.4	0.0	60.7	149
Parity																	
0 children	80.5	89.3	85.9	62.7	87.2	82.3	62.1	84.7	79.0	61.1	80.4	74.9	67.6	42.4	8.2	40.4	349
1-2 children	76.5	88.7	80.1	60.1	85.3	79.2	61.7	82.6	74.0	58.0	77.1	68.7	63.0	37.5	8.7	37.9	782
3-4 children	70.6	86.6	75.9	52.5	83.0	72.7	49.3	80.3	68.9	45.9	74.2	63.5	51.5	27.8	11.4	35.3	466
5+ children	66.7	82.9	72.6	46.2	77.6	66.5	44.9	73.8	60.6	41.2	67.5	57.1	41.8	20.3	14.1	33.1	458
Region*																	
Afar	30.1	43.9	39.0	20.6	40.2	29.9	15.8	41.3	29.7	17.0	42.5	29.8	48.1	12.2	48.6	43.6	41
Amhara	85.2	91.7	87.8	69.0	92.3	88.0	71.3	90.0	83.8	68.3	87.4	82.2	71.1	45.7	5.8	36.3	434
Oromia	69.4	88.2	77.2	52.2	81.5	71.7	49.7	76.7	64.8	45.3	71.5	61.5	46.8	24.9	10.3	29.8	913
SNNP	67.3	79.8	69.0	40.6	76.6	65.7	40.0	75.2	63.7	37.7	66.8	55.6	47.0	20.6	15.6	41.9	487
Addis Ababa	97.4	99.1	98.7	97.7	99.6	99.1	97.2	99.0	98.3	96.9	99.6	97.3	94.3	87.3	0.0	75.9	83
Residence																	
Rural	67.6	84.0	73.4	46.9	79.6	69.6	46.4	76.1	64.2	43.2	69.0	58.5	48.1	23.1	13.1	32.7	1,590
Urban	94.6	97.5	95.8	86.1	96.4	95.5	85.6	95.4	92.8	82.2	95.1	91.6	85.3	64.0	1.2	50.3	464
Wealth																	
Lowest quintile	58.8	80.8	69.0	41.7	73.0	65.3	39.0	71.3	60.5	36.3	61.4	51.4	43.5	17.7	16.2	35.0	417
Lower quintile	67.3	80.8	68.1	40.6	77.9	64.2	40.8	73.0	58.4	40.0	65.4	54.0	42.3	18.6	16.5	31.1	408
Middle quintile	70.2	87.0	79.4	53.8	82.8	75.5	55.0	80.5	72.7	49.9	72.4	63.4	53.8	27.9	10.4	35.4	406
Higher quintile	75.9	88.8	79.1	54.1	86.0	75.4	53.4	80.5	67.0	48.6	78.9	67.7	55.5	28.3	8.1	30.2	417
Highest quintile	96.5	98.0	97.0	88.9	97.4	97.2	88.4	97.3	95.1	85.8	96.6	93.8	87.6	69.7	0.9	51.8	406

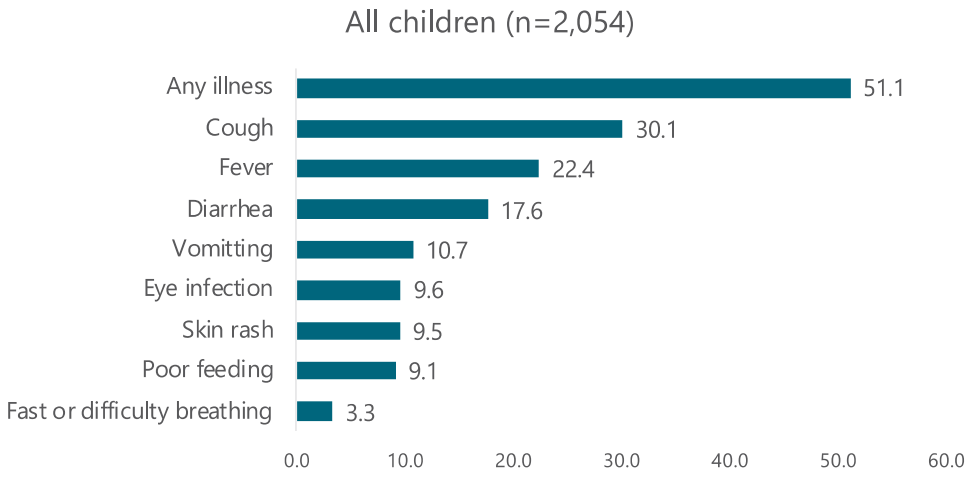
**Note:* Interviews from Tigray are included in the overall estimates but excluded from regional comparisons.

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 (Table 15 and 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 (51.1%). The most common illnesses were cough (30.1%), fever (22.4%) and diarrhea (17.6%).

Figure 16. 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:** More than half (54.8%) of children whose mother had no education suffered any illness, compared to two in five (40.3%) children whose mother attended more than secondary education.
- **Mother's Parity:** In all illnesses except cough and skin rash, the percentage of children suffering the illness was the highest among women with five or more children at enrollment. For example, while 14.5% of children of nulliparous mothers suffered diarrhea, 22.4% 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 SNNP (58.1%) and lowest in Addis Ababa (42.8%).
- **Residence:** Over half (53.0%) of children living in rural areas were reported to suffer any illness, compared to 44.8% of children living in urban areas.
- **Wealth:** The percentage of children suffering any illness was generally lower among children from the wealthiest families. For example, over one in ten (12.8%) and less than one in twenty (4.2%) children in the lowest and highest wealth quintile suffered an eye infection in the past two weeks, respectively.

Treatment for Child Illness

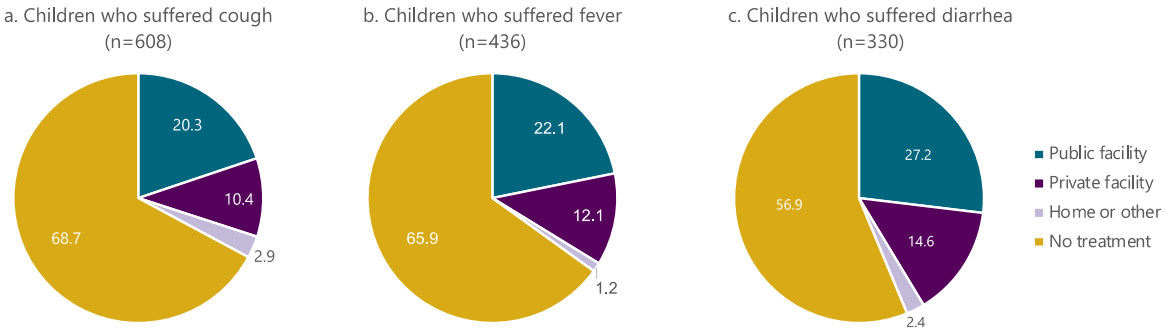
Definition: Women who reported that their children had suffered any illness in the past two weeks were asked whether and where they sought treatment for the illness, by illness type. Place of treatment was grouped into three categories: 1) treatment at public facilities (government hospital, government 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 and Table 16 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 (20.3%-27.2%).
- Roughly one in ten (10.4%-14.6%) children who suffered cough, fever, or diarrhea received treatment at a private facility.

Figure 17. 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, 10.7% were reported to have blood present in diarrhea. Approximately one in ten (9.4%) and one in four (24.9%) children received zinc tablets and ORS as treatment for diarrhea, respectively.

Figure 18. Presence of blood and treatment for diarrhea