



QUANTIFICATION OF FAMILY PLANNING COMMODITIES, JANUARY 2020–DECEMBER 2022, PHILIPPINES





Philippines Department of Health, National Family Planning Program

Quantification of Family Planning Commodities, January 2020–December 2022, Philippines

October 2019



This document is made possible by the generous support of the American people through the US Agency for International Development (USAID) contract number 7200AA18C00074. The contents are the responsibility of Management Sciences for Health and do not necessarily reflect the views of USAID or the United States Government.

About DOH's National Family Planning Program

The DOH's National Family Planning Program is one of the public health programs managed and coordinated by the Public Health Service Team (PHST). Its vision is to help Filipino women and men achieve their desired family size and fulfill their reproductive health and rights for all through universal access to quality family planning information and services. In line with the DOH's FOURmula One Plus strategy and the universal health care (UHC) framework, the National Family Planning Program is committed to providing responsive policy direction and ensuring access to medically safe, legal, non-abortifacient, effective, and culturally acceptable modern family planning methods.

About MTaPS

The goal of the USAID Medicines, Technologies, and Pharmaceutical Services (MTaPS) Program is to enable low- and middle-income countries to strengthen their pharmaceutical systems to ensure sustainable access to and appropriate use of safe, effective, quality-assured, and affordable essential medicines and medicine-related pharmaceutical services. Toward this end, the MTaPS result areas include strengthening pharmaceutical sector governance; increasing institutional and human resource capacity for pharmaceutical management and services, including regulation of medical products; increasing availability and use of pharmaceutical information for decision making and advancing the global learning agenda; optimizing pharmaceutical-sector financing, including resource allocation and use; and improving pharmaceutical services, including product availability and patient-centered care, to achieve desired health outcomes.

Recommended Citation

This document may be reproduced if credit is given to DOH and MTaPS. Please use the following citation.

Shiferaw G, Oumer A, Linatoc I, Teleron E, Borling K, Llevado J. 2019. Quantification of Family Planning Commodities for January 2020 to December 2022, Philippines. Medicines, Technologies, and Pharmaceutical Services (MTaPS) Program and the Philippine Department of Health.

CONTENTS

Acknowledgment	vi
Acronyms and Abbreviations	vii
Executive Summary	viii
Background	1
Population, FP, and Reproductive Health in the Philippines	1
DOH Supply Chain Management for FP	1
Scope and Objectives of The Quantification	3
Scope of the Quantification	3
Objectives of the Quantification	3
Quantification Processes, Methodologies, and Tools	4
Preparatory Activities	4
Quantification Orientation	4
Data Organization, Analysis, Presentation, and Validation	4
Quantification Output	6
Demographic/Population/Morbidity Method	6
Contraceptive Prevalence Rate	7
Method Mix	8
Brand Mix	9
Source Mix	9
FP Discontinuation and Failure Rate	10
Supply Planning Assumption	11
Additional Assumptions	12
Demography Results	13
Forecast Results	14
Supply Plan/Procurement Results	16
Quantification Analysis	20
CPR Trend	20
Method Mix of Modern FP Methods	21
Supply Plan/Procurement Analysis	23
Quantification Impact/Outcome	26
Challenges	31
Recommendations	32

List of tables

Table 1. Total cost of FP commodities for quantification period 2020-2022	x
Table 2. Procurement cost of each contraceptive with different scenario for quantification period 2020-2022	xi
Table 3. Data and associated sources	6
Table 4. Total population and WRA (15-49 years)	6
Table 5. mCPR (%) for all and married WRA, 1993–2017 NDHS	7
Table 6. Average annual mCPR percentage increase for all and married WRA, 1993–2017 NDHS	7
Table 7. CPR trend by method and method mix, and annual increase/decrease	7
Table 8. mCPR trend with different scenarios	8

Table 9. Projected mCPR in% by method with 0.5% annual increase (scenario 1)	8
Table 10. Projected mCPR in% by method with 1.0% annual increase (scenario 2)	8
Table 11. Brand mix of oral contraceptives (%)	9
Table 12. Source of contraceptives (%) from NDHS 2017	9
Table 13. Source mix by method for public sector	9
Table 14. Method-specific annual contraceptive failure rates	10
Table 15. Annual usage and wastage rate by method	11
Table 16. Process lead time scenarios 1 and 2	11
Table 17. Maximum, minimum, and DSL considered for quantification	12
Table 18. Price of FP commodities considered for the quantification	12
Table 19. Demographic parameters used for FP quantification impact	12
Table 20. Number of FP users during the quantification period, scenario 1 (0.5% mCPR growth)	13
Table 21. Number of FP users during the quantification period, scenario 2 (1.0% mCPR growth)	13
Table 22. New FP acceptors during the quantification period, scenario 1 (0.5% mCPR growth)	14
Table 23. New FP acceptors during the quantification period, scenario 2 (1.0% mCPR growth)	14
Table 24. Forecast by <i>quantity</i> of FP commodities for all users (scenario 1 = 0.5% mCPR growth)	15
Table 25. Forecast by <i>quantity</i> of FP commodities for all users (scenario 2 = 1.0% mCPR growth)	15
Table 26. Forecast by <i>quantity</i> of FP commodities, including wastage for all users (scenario 1 = 0.5% mCPR growth)	15
Table 27. Forecast by <i>quantity</i> of FP commodities, including wastage for all users (scenario 2 = 1.0% mCPR growth)	15
Table 28. Forecast by <i>quantity</i> of FP commodities, including wastage for public sector only (scenario 1 = 0.5% mCPR growth)	16
Table 29. Forecast by <i>quantity</i> of FP commodities, including wastage for public sector only (scenario 2 = 1.0% mCPR growth)	16
Table 30. Supply plan/procurement scenarios	16
Table 31. Procurement requirements by <i>quantity</i> (public), 0.5% CPR growth and 18-month DSL (scenario 1)	17
Table 32. Procurement requirements by <i>value</i> (public), 0.5% CPR growth and 18-month DSL (scenario 1) (1 USD = 53 PHP)	17
Table 33. Procurement requirements by <i>quantity</i> (public), 1.0% CPR growth and 18-month DSL (scenario 2)	17
Table 34. Procurement requirements by <i>value</i> (public), 1.0% CPR growth and 18-month DSL (scenario 2) (1 USD = 53 PHP)	17
Table 35. Procurement requirements by <i>quantity</i> (public), 0.5% CPR growth and 24-month DSL (scenario 3)	18
Table 36. Procurement requirements by <i>value</i> (public), 0.5% CPR growth and 24-month DSL (scenario 3) (1 USD = 53 PHP)	18
Table 37. Procurement requirements by <i>quantity</i> (public), 1.0% CPR growth and 24-month DSL (scenario 4)	18
Table 38. Procurement requirements by <i>value</i> (public), 1.0% CPR growth and 24-month DSL (scenario 4) (1 USD = 53 PHP)	18
Table 39. Procurement requirements by <i>quantity</i> (public), 0.5% CPR growth and 3-month buffer (scenario 5)	19
Table 40. Procurement requirements by <i>value</i> (public), 0.5% CPR growth and 3-month buffer (scenario 5) (1 USD = 53 PHP)	19
Table 41. Procurement requirements by <i>quantity</i> (public), 1.0% CPR growth and 3-month buffer (scenario 6)	19

Table 42. Procurement requirements by value (public), 1.0% CPR growth and 3-month buffer (scenario 6) (1 USD = 53 PHP)	19
Table 43. Summary of procurement <i>quantity</i> of FP commodities for public sector by different scenarios.....	23
Table 44. Summary of procurement <i>values</i> of FP commodities for public sector by different scenarios (1 USD = 53 PHP)	24
Table 45. CYP by method—scenario 1 (0.5% mCPR annual growth).....	27
Table 46. CYP by method—scenario 2 (1.0% mCPR annual growth).....	27
Table 47. Number of unintended pregnancies averted—scenario 1	28
Table 48. Number of unintended pregnancies averted—scenario 2	28
Table 49. Total number of maternal deaths averted—scenario 1	29
Table 50. Total number of maternal deaths averted—scenario 2	29
Table 51. Number of infant deaths averted—scenario 1.....	29
Table 52. Number of infant mortality averted—scenario 2	30
Table 53. Number of child mortality averted—scenario 1	30
Table 54. Number of child mortality averted—scenario 2	30

List of figures

Figure 1. Percentage trend of married and unmarried women (15-49) using modern contraceptive methods.....	viii
Figure 2. Percentage trend of mCPR for all WRA (15-49) using modern contraceptive methods.....	ix
Figure 3. Percentage value of contraceptives with different scenarios	x
Figure 4. Estimated outcomes/impacts of the quantification and implementation of FP program targets January 2019–December 2022.....	xi
Figure 5. Comparison of FP discontinuation rate from different sources.....	10
Figure 6. Projected mCPR for all WRA for scenarios 1 and 2	20
Figure 7. mCPR trend for long- and short-acting FP methods (scenario 1), 0.5% mCPR increase.....	21
Figure 8. mCPR trend for long- and short-acting FP methods (scenario 2), 1.0% mCPR increase.....	21
Figure 9. mCPR trend for different method mix (scenario 1), 0.5% mCPR increase.....	22
Figure 10. mCPR trend for different method mix (scenario 2), 1.0% mCPR increase.....	22
Figure 11. Proportion of method mix.....	23
Figure 12. Comparison of procurement values (in PHP) of different scenarios for different years	24
Figure 13. Comparison of cost (in PHP) per CYP for different methods	25
Figure 14. Proportion of FP commodities procurement value for different scenarios 2020-2022	25
Figure 15. Proportion of CYP contributed by different scenarios and methods	26

ACKNOWLEDGMENT

The authors would like to express their appreciation to management and staff of the Department of Health, particularly the National Family Planning Program, procurement and supply chain management team, and Pharmacy Division for their unreserved leadership, technical support, and contributions during the quantification process. Gratitude also goes to the USAID's Medicines, Technologies, and Pharmaceutical Services Program (MTaPS) staff for their relentless support and coordination to make the whole exercise a success. Special acknowledgment and gratitude go to all consultative, validation, and dissemination workshop participants for their full participation and expert input during the process. Last, but not least, we would like to recognize USAID, which provided technical and financial support through MTAps, implemented by Management Sciences for Health (under contract number 7200AA18C00074) in conducting consultative meetings that facilitated the multi-year quantification exercise.

ACRONYMS AND ABBREVIATIONS

COC	combined oral contraceptive
CPR	contraceptive prevalence rate
CYP	couple year protection
DOH	Department of Health
DSL	desired stock level
FDA	Food and Drugs Administration
FP	family planning
IUD	intrauterine device
LAM	lactational amenorrhea method
mCPR	modern contraceptive prevalence rate
MTaPS	Medicines, Technologies and Pharmaceutical Services
NDHS	National Demographic and Health Survey
NFP	National FP Program
NOH	National Objectives of Health
NTP	notice to proceed
PDP	Philippine Development Plan
PHP	Philippine peso (PHP 53 = 1 USD)
PMIS	Pharmaceutical Management Information System
POP	progestin only pills
PS	Procurement Service
PSCMT	procurement and supply chain management team
RPRH	responsible parenthood and reproductive health
SCMO	Supply Chain Management Office
SDM	standard day method
UHC	universal health care
UOM	unit of measure
USAID	US Agency for International Development
USD	US dollar (1 USD = 53 PHP)
WRA	women of reproductive age

EXECUTIVE SUMMARY

The Philippine Development Plan (PDP) 2017-2022 is the country's medium-term plan geared to achieving the Sustainable Development Goal and Ambisyon Natin.¹ Family planning (FP) was identified as a pivotal intervention in realizing the country's demographic dividend by assisting couples and individuals achieve their desired family size by addressing unmet demand for FP to reduce unwanted pregnancies, which in turn prevents high-risk pregnancies, maternal mortality, and child death.

Contraceptive use in the country has been increasing for more than the last two decades. For example, use of modern contraception among currently married women increased from 24.9% in 1993 to 40.4% in 2017. The trend is also true for all women of reproductive age (WRA) (figure 1).²

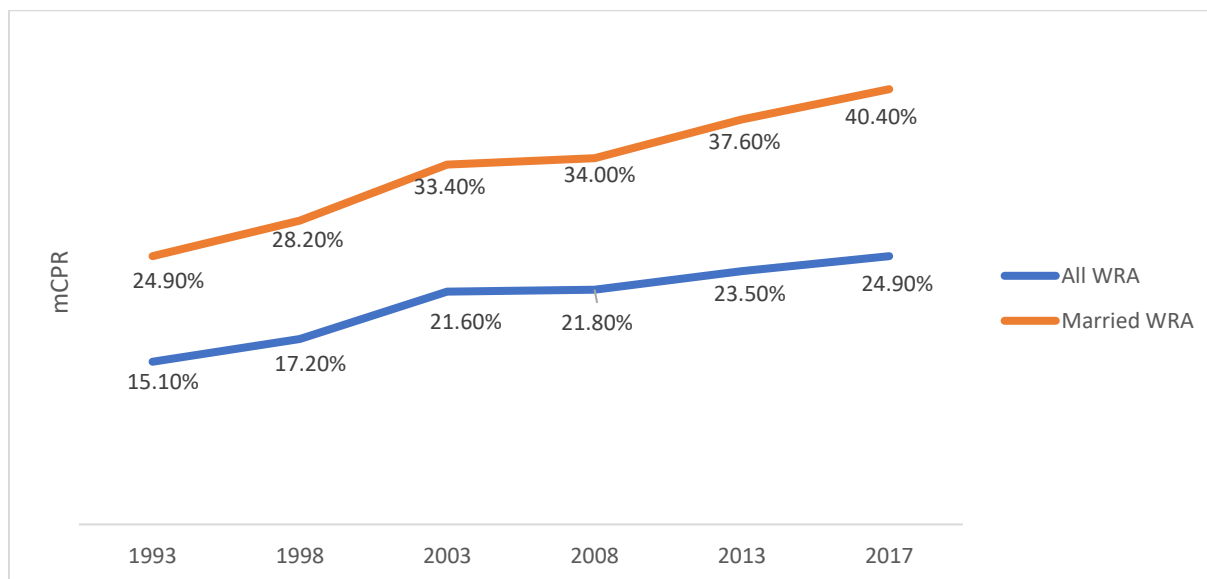


Figure 1. Percentage trend of married and unmarried women (15-49) using modern contraceptive methods

The total fertility rate has been decreasing consistently over time from 4.1 children per woman in 1993 to 2.7 in 2017. However, according to the National Objectives of Health (NOH) 2017-2022, in 2016, the Department of Health (DOH) reached 1.5 million modern FP acceptors, which is only 16% of the estimated 9.5 million women with unmet need for modern FP. Therefore, the DOH National FP Program (NFP), in line with the PDP, the DOH FOURmula One Plus strategy, and UHC framework, crafted a vision for Filipino women and men to achieve their desired family size and fulfill reproductive health and rights for all through universal access to quality FP information and services. To realize goal, the NFP set two objectives:

¹ National Economic and Development Authority. Philippine Development Plan 2017-2022. Pasig City, Philippines; 2017.

² Philippine Statistics Authority and ICF. Philippines 2017 National Demographic and Health Survey: Key Findings. Quezon City, Philippines, and Rockville, Maryland, USA: PSA and ICF. 2017.

- Increase the modern contraceptive prevalence rate (mCPR) among all women from 24.9% in 2017 to 30% by 2022
- Reduce the unmet need for modern FP from 10.8% in 2017 to 8% by 2022 program components

To achieve the above objectives, forecasting commodity requirements, procuring FP commodities and ancillary supplies, strengthening supply chain management, and ensuring adequate FP supply at service delivery points are key intervention areas that NFP has laid out.

Appropriate, regular, and evidence-based quantification of commodities plays a critical role in contraceptive security because it ensures advanced planning and mobilization of required resources and provides inputs for effective and efficient procurement and distribution of FP commodities to the point of care. Effective quantification also reduces costs and wastage of limited resources.

An FP quantification exercise was conducted with technical assistance from MTaPS and participation of all major stakeholders. The objective was to produce a forecast and procurement requirements by quantity and cost for January 2020–December 2022. The results of this quantification exercise will be used to plan, mobilize, and secure financial resources for the quantification period.

The quantification exercise yielded the following major outputs (figure 2)—the total mCPR of all WRA (15–49 years) is expected to rise from 24.9% in 2017 to:

- 29.9% in 2022 with an annual mCPR increase of 1% or (orange)
- 27.4% in 2022 with an annual mCPR increase of 0.5% (blue)

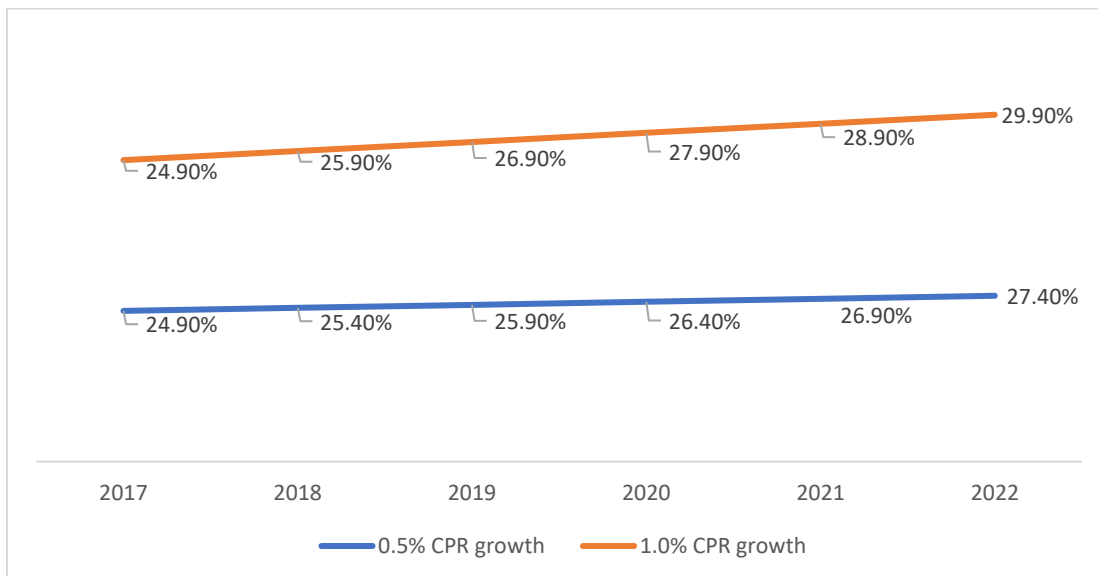


Figure 2. Percentage trend of mCPR for all WRA (15-49) using modern contraceptive methods

Use of long-term contraception methods is expected to increase while use of short-acting contraception methods is expected to decrease, which would benefit the DOH in achieving its target with optimal resources.

The total commodity procurement requirements for the public sector by quantity and cost for different scenarios are shown in table 1.

Table 1. Total cost of FP commodities for quantification period 2020-2022

Scenario	Total cost	
	PHP	USD
0.5% CPR, 18 months DSL	3,863,473,982	72,895,736
1% CPR, 18 months DSL	4,465,705,064	84,258,586
0.5% CPR, 24 months DSL	4,421,700,574	83,428,313
1% CPR, 24 months DSL	4,895,697,388	92,371,649
0.5% CPR, 3 months buffer	2,448,905,643	46,205,767
1% CPR, 3 months buffer	2,729,918,026	51,507,887

DSL = desired stock level
1 USD = 53 PHP

Oral contraceptives (progestin only pills [POPs] and combined oral contraceptives [COCs]) account for approximately 80% of the procurement requirements for all scenarios during the quantification period (figure 3). Intrauterine devices (IUDs) account for the least procurement requirement by value (less than 1%) for all scenarios during the quantification period.

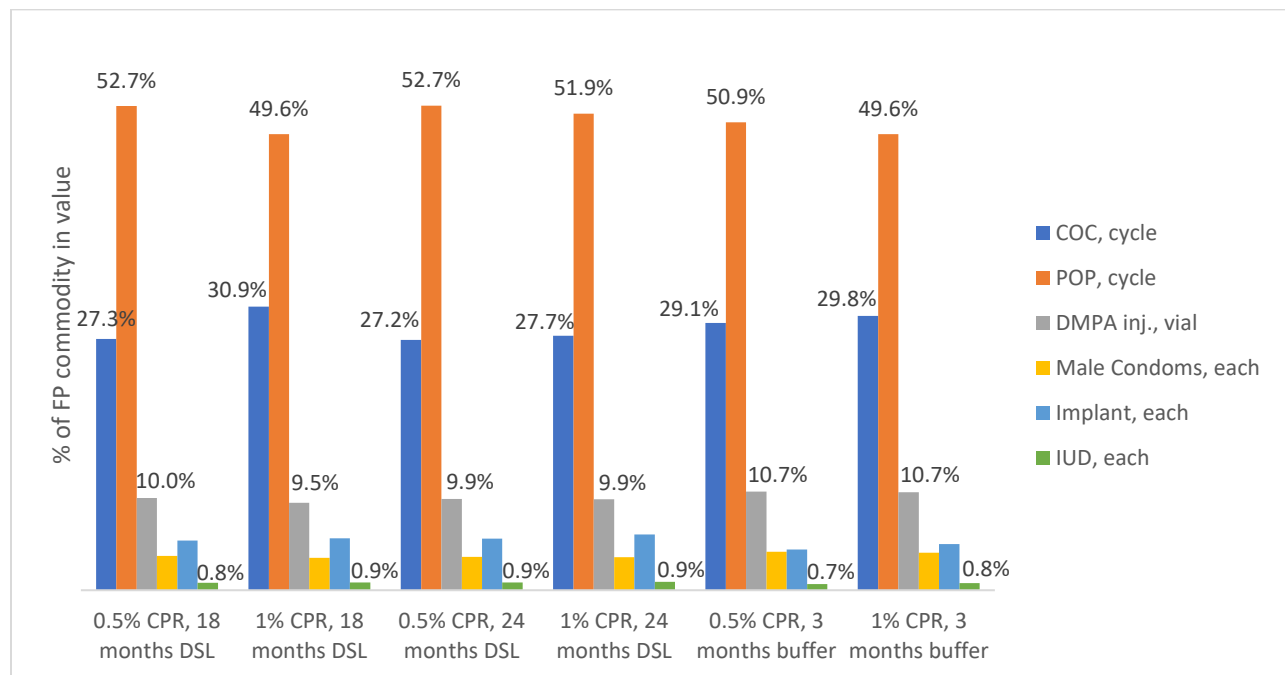


Figure 3. Percentage value of contraceptives with different scenarios

Table 2 provides detailed FP procurement costs for each contraceptive under different scenarios.

Table 2. Procurement cost of each contraceptive with different scenario for quantification period 2020-2022

Product	18 months DSL		24 months DSL		3 months buffer	
	0.5% CPR	1% CPR	0.5% CPR	1% CPR	0.5% CPR	1% CPR
COC, cycle	1,056,133,200	1,378,385,550	1,204,292,460	1,354,694,070	712,152,780	814,478,100
POP, cycle	2,034,698,080	2,215,409,600	2,331,016,520	2,538,763,800	1,246,669,160	1,354,532,200
DMPA inj., vial	388,258,648	425,132,872	439,406,752	484,910,584	262,561,328	291,428,756
Male condoms, each	143,621,938	156,929,457	160,467,542	175,312,075	102,110,498	111,469,905
Implant, each	208,982,150	251,741,100	248,805,050	297,180,000	108,794,400	137,153,250
IUD, each	31,779,966	38,106,485	37,712,250	44,836,859	16,617,477	20,856,123
Total (PHP)	3,863,473,982	4,465,705,064	4,421,700,574	4,895,697,388	2,448,905,643	2,729,918,334

Potential outcomes/impacts of achieving the target either with scenario 1 or scenario 2 mCPR growth for all WRA groups in the quantification period are depicted in figure 4.

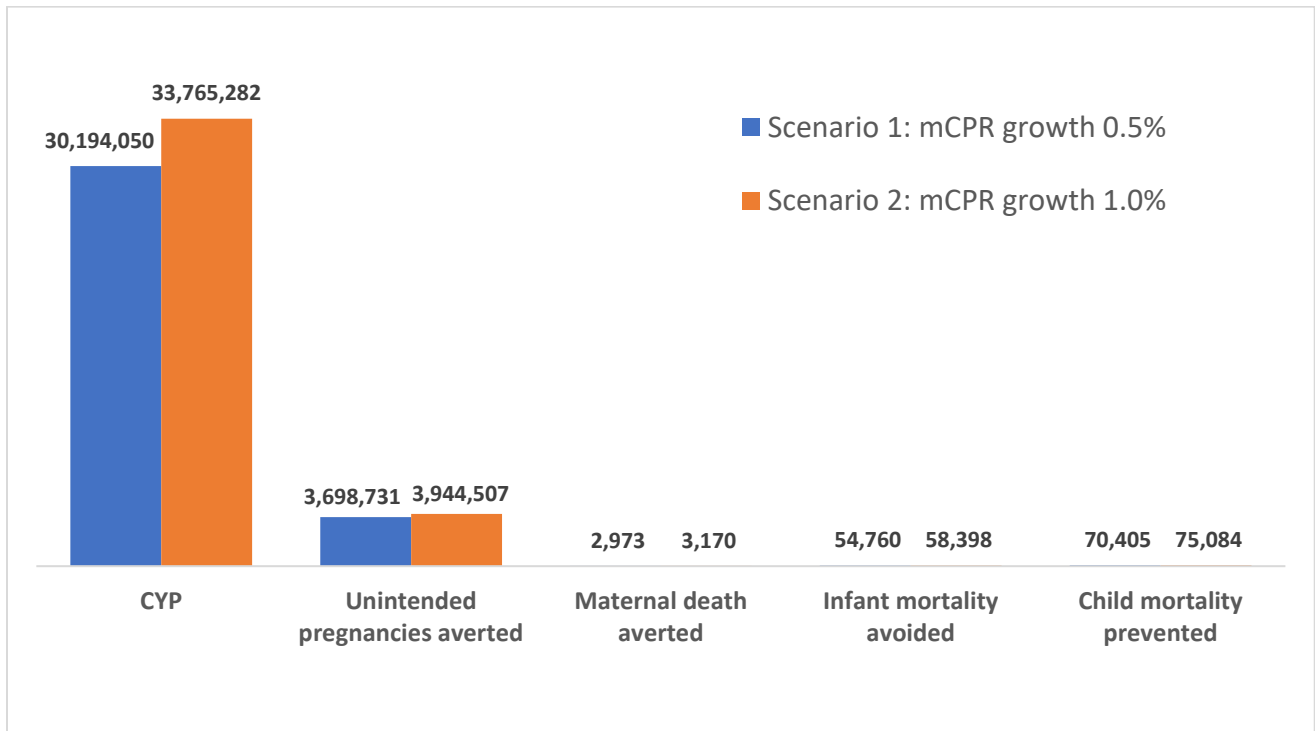


Figure 4. Estimated outcomes/impacts of the quantification and implementation of FP program targets January 2019–December 2022

BACKGROUND

Population, FP, and Reproductive Health in the Philippines

According to the projection from the 2015 Philippines Population and Census survey,³ the total population was 102,716,856 by 2016 with an annual growth rate of 1.72%. Of the total population, 25.85% were WRA (15-49 years of age). In 2017, the PDP 2017-2022 was formally introduced. The PDP is the country's medium-term plan geared to achieving the Sustainable Development Goal and Ambisyon Natin. FP was identified as a pivotal intervention in realizing the country's demographic dividend by assisting couples and individuals in achieving their desired family size by addressing unmet demand for FP and unwanted pregnancies.¹ In line with the PDP and the DOH FOURmula One Plus Health Agenda⁴ and the UHC framework, the DOH NFP crafted a vision for Filipino women and men to achieve their desired family size and fulfill the reproductive health and rights for all through universal access to quality FP information and services. To realize goal, the NFP set two objectives⁵:

- Increase mCPR among all women from 24.9% in 2017 to 30% by 2022
- Reduce the unmet need for modern FP from 10.8% in 2017 to 8% by 2022 program components

To achieve the above objectives, forecasting FP commodity requirements, procuring FP commodities and ancillary supplies, strengthening supply chain management, and ensuring adequate FP supplies at service delivery points are key intervention areas the NFP has laid out.

Republic Act 10354 or the Responsible Parenthood and Reproductive Health (RPRH) Act⁶ is a landmark bill that paves the way for responsible parenthood for all Filipinos. The DOH, through the NFP and with the Population Commission, leads the thrust of ensuring zero unmet need for modern FP. Uninterruptible access to safe, effective, quality FP commodities is critical to successful implementation of RPRH. Without the commodities needed, Filipino families will not be able to make informed FP choices. Universal access to sexual and reproductive health care services will only be possible with improved access to modern FP methods and needed commodities.

The latest National Demographic and Health Survey (NDHS)² done in 2017 shows that the mCPR among all women is at 24.9%. According to the NOH,⁷ DOH in 2016 reached 1.5 million modern FP acceptors, which is only 16% of the estimated 9.5 million married women with unmet need for modern FP methods. Unmet need for modern FP is decreasing while the use of modern contraceptive methods is increasing.

DOH Supply Chain Management for FP

³ Philippines Statistics Authority. Updated Population Projections based on 2015 POPCEN. <https://psa.gov.ph/content/updated-population-projections-based-results-2015-popcen>

⁴ Republic of the Philippines, Department of Health. 2018. Philippines Health Agenda 2016-2022

⁵ Republic of the Philippines, Department of Health. National Family Planning Program. 2017 <https://www.doh.gov.ph/family-planning>

⁶ The Republic Act No. 10354: The Responsible Parenthood and Reproductive Health Act of 2012. https://www.lawphil.net/statutes/repacts/ra2012/ra_10354_2012.html

⁷ Department of Health. National Objectives for Health Philippines 2017-2022. Manila, Philippines: Department of Health. 2018.

The DOH, through the Procurement and Supply Chain Management Team (PSCMT), manages the procurement and supply chain for medicines and health commodities of all health programs for the country. The PSCMT is divided into the Supply Chain Management Office (SCMO) and Procurement Service (PS). The PS manages the procurement and bidding processes for the different DOH offices, including health programs. The SCMO oversees warehousing and distribution at the central level down to the regional level. At the regional level, warehousing and further distribution of DOH commodities are managed through the regional supply officers. Last mile distributions of commodities are up to the rural health units as the service delivery points. FP commodities follow the standard DOH supply chain. In addition to PSCMT, the NFP also manages other functions for FP commodities, such as budget forecasting, quantification, allocation planning at the central level, and monitoring. Monthly consumption and stock on hand data of FP commodities at health facilities are reported every quarter through the Pharmaceutical Management Information System (PMIS) managed by the Pharmaceutical Division. The PMIS is a web-based portal that captures monthly summary stock data at the facility level.

Other offices involved in supply chain of DOH include:

- Food and Drugs Administration (FDA) as the national regulatory authority for medicines in the country
- Pharmaceutical Division implements policies for pharmaceutical access through appropriate selection of FP products
- Knowledge and Management Information and Technology Services as the office that manages DOH information systems

SCOPE AND OBJECTIVES OF THE QUANTIFICATION

Scope of the Quantification

The quantification was conducted for the public sector. FP commodities that were quantified included male condoms, injectable medroxyprogesterone acetate (Depo-Provera), two kinds of oral contraceptives (COCs and POPs), CycleBeads, implants, and IUDs.

The quantification covered 2020–2022. Male condoms used both for FP and HIV prevention in the public sector are being supplied through the NFP. Forecast requirements include quantity and cost with provisions for wastage, freight, and logistics. The procurement quantity and cost requirements were determined after considering stock on hand, expiries, outstanding shipments not delivered yet, buffer stock, minimum and maximum stock levels, and order processing lead times. The supplies needed to administer injections are expected to be provided as part of the routine supply and are not considered in this quantification. In addition, medical supplies, equipment, and devices for insertion and procedure requirements for long-acting and permanent methods of contraception are considered part of the complete kit and obtained through routine health service provision.

Objectives of the Quantification

1. Forecast quantities of FP commodities needed for three years (2020–2022)
2. Produce three-year procurement quantity and associated cost for FP commodities procured through the public sector
3. Utilize results of the quantification to mobilize and secure the required budget to procure these commodities in the period

QUANTIFICATION PROCESSES, METHODOLOGIES, AND TOOLS

Preparatory Activities

Preparatory activities, such as defining data requirements, developing data collection tools, collecting actual data, and desk reviewing existing documents, were carried out before quantification. A meeting with the DOH NFP was held on August 20, 2019, to be sure that everyone was caught up on the correct information and to:

- Discuss and agree on the objective of the quantification
- Understand data requirements and pending data to be collected
- Agree on timelines for the quantification exercise and expected results from the exercise
- Confirm participation of relevant staff for a two-day orientation workshop on quantification principles and processes

Quantification Orientation

A two-day orientation workshop on quantification was facilitated for DOH staff and implementing partners on August 22-23, 2019. The objectives of the workshop were to:

- Introduce the concept of quantification (forecasting and supply planning), including key principles, data requirements, forecasting methods, steps, and processes
- Describe applications of quantification and early warning systems
- Describe common quantification challenges, lessons learned, possible strategies, and synergies
- Draw recommendations for the mitigation of challenges
- Develop a plan of action to produce a three-year quantification result

Data Organization, Analysis, Presentation, and Validation

Immediately after the quantification orientation workshop, the collected data were organized, analyzed, and prepared on August 26-27, 2019. Two data presentations and validation meetings were held with DOH NFP on August 28 and 30, 2019, at DOH. During the meeting, various scenarios, program targets, service performances, identified gaps, and possible assumptions to be used as input during estimating quantities and budgets were discussed and decided. The discussion from the meetings also helped everyone agree on methodologies, build more assumptions and scenarios, and reach consensus to produce the three-year quantification results. Moreover, practical challenges were identified and possible solutions were recommended to strengthen management of the entire FP commodity supply chain. Attendants included the NFP coordinator and program officers, SCMO's head of the Demand Planning and Monitoring Division, and MTaPS senior technical advisors. Data and assumptions were further analyzed and organized for input into the forecasting tool.

Based on feedback provided during the meetings and further discussions with stakeholders, the demographic/morbidity method of forecasting was selected as the main quantification method for the following reasons:

- The data for the demographic method is relatively more reliable, as it is drawn mostly from NDHS 2017.
- The consumption data generated through the PMIS was incomplete, such as the number and relative consumption of non-reporting facilities.
- The NFP is scaling up FP services, with the general objectives of decreasing fertility and unmet needs and increasing CPR and use of FP methods by the population in need.

Reality $\sqrt{\text{®}}$ was used to forecast based on the demographic/morbidity method. Reality $\sqrt{\text{®}}$ is an open source, Microsoft Excel-based planning and advocacy tool for strengthening FP programs. Supply plans were developed using PipeLine ® , a Microsoft Access-based software tool that helps program managers gather critical quantification information, ensure that products arrive on time, maintain consistent stock levels at the program or national level, and prevent stock-outs.

Key assumptions and outputs from data analysis are presented below.

QUANTIFICATION OUTPUT

Demographic/Population/Morbidity Method

Table 3 illustrates the major demographic, program specific, and supply chain data considered for the quantification with corresponding sources.

Table 3. Data and associated sources

Major data considered	Source of data
Population projection	DOH
Proportion and number of all WRA (15-49)	DOH Epidemiology Office
WRA (25.85%)	Census 2015
mCPR for all women	NDHS, NFP
Unmet need	NDHS, NFP
CPR by method	NDHS, NFP
Brand mix for oral contraceptives—OCPs v POPs	PMIS consumption report and DOH FP program discussion
Source mix	NDHS, NFP
Method-specific failure rate	Trussell 2011 and Bradley 2019
Couple year protection (CYP) factors	FP2020 and NFP
Maternal mortality rate	UN estimates
Infant and child mortality rates	NDHS 2017
Consumption and stock on hand data at service delivery as of June 30, 2019	Pharmacy Division PMIS
Stock on hand at regional and central warehouses; outstanding shipment with expected date of delivery as of June 30, 2019	DOH/SCMT
Lead times	DOH FP program discussion
Unit costs	DOH current tender price

Total population projections from DOH and proportion of WRA (25.85%) from the 2015 national census were used as a basis for calculating the number of all WRA (15-49) for the quantification period (table 4). Average annual population growth of 1.72% was considered.² For this quantification, it was agreed during the validation meetings that all WRA should be considered, not married WRA only.

Table 4. Total population and WRA (15-49 years)

	2016	2017	2018	2019	2020	2021	2022
Total population	102,716,856	104,921,597	106,168,803	108,020,395	109,908,955	111,835,329	113,800,381
% of WRA	25.85						
# of WRA	26,556,416	27,126,430	27,448,882	27,927,593	28,415,861	28,913,906	29,421,951

Contraceptive Prevalence Rate

CPR for all WRA and married WRA was obtained from the Philippines NDHS 2017, which covered NDHSs conducted from 1993 to 2017. Tables 5 and 6 illustrate the total mCPR and associated trends for all WRA and married WRA 1993–2017.

Table 5. mCPR (%) for all and married WRA, 1993–2017 NDHS

	1993	1998	2003	2008	2013	2017
All WRA	15.10	17.20	21.60	21.80	23.50	24.90
Married WRA	24.90	28.20	33.40	34.00	37.60	40.40

The 24.90% mCPR from NDHS 2017 was applied as a basis to calculate the mCPR trend for the quantification period. The annual mCPR trend (increase or decrease) for all and married WRA is shown in table 6.

Table 6. Average annual mCPR percentage increase for all and married WRA, 1993–2017 NDHS

Period	All WRA	Married WRA
1993-1998	0.42	0.66
1998-2003	0.88	1.04
2003-2008	0.04	0.12
2008-2013	0.34	0.72
2013-2017	0.35	0.70

The latest NDHS (2017) showed that the average annual growth rates of total mCPR during the period of 2013 to 2017 were 0.35% for all WRA and 0.70% for married WRA. On the other hand, the DOH NFP set a target of annual mCPR growth rate of 1.00% for all WRA to reach 29.90% by 2022. Table 7 from NDHS provides the details of the total CPR for all methods and average annual CPR increase/decrease.

Table 7. CPR trend by method and method mix, and annual increase/decrease

FP Methods	2013 NDHS	2017 NDHS	Annual increase
Any method	34.6	33.6	-0.3
Modern method	23.5	24.9	0.35
Traditional method	11	8.7	-0.6

The DOH NFP had set 1% annual mCPR growth as program target. In order to compare and consider historical CPR trend, two scenarios for quantification were developed—scenario 1 with an annual mCPR growth rate of 0.50% and scenario 2 with an annual mCPR growth rate of 1.0% for the quantification period 2020–2022 (table 8). This decision was made on the basis of the data validation and assumption building workshop and results from NDHS (0.35%). The mCPR (24.9%) was taken from the Philippines NDHS 2017 as a baseline, and an average annual mCPR

increase of 0.50 percentage points (scenario 1) and 1.0 percentage points (scenario 2) were applied to project mCPR by year for the quantification period.

Table 8. mCPR trend with different scenarios

mCPR	Average annual growth rate	2017	2018	2019	2020	2021	2022
Scenario 1: Performance, experts' assumption, and NFP agreement	0.5%	24.9%	25.4%	25.9%	26.4%	26.9%	27.4%
Scenario 2: DOH target	1.0%	24.9%	25.9%	26.9%	27.9%	28.9%	29.9%

Method Mix

Based on the NFP's strategic plan, the CPR contribution of long-acting methods was assumed to increase from 31% in 2017 to 44.5% in 2022, resulting in a proportional decrease in the CPR of short-acting methods. Tables 9 and 10 illustrate the mCPR projection by various modern methods until 2022 for both scenarios.

Table 9. Projected mCPR in% by method with 0.5% annual increase (scenario 1)

Method	2017	2018	2019	2020	2021	2022
Male condom	1.10	1.12	1.14	1.01	0.88	0.73
Injectable	3.10	3.16	3.22	2.98	2.72	2.45
Pills	12.70	12.96	13.21	12.75	12.26	11.74
Standard day method (SDM)	0.00	0.00	0.00	0.01	0.02	0.03
Lactational amenorrhea method (LAM)	0.30	0.31	0.31	0.29	0.27	0.24
Implant	0.70	0.71	0.73	1.12	1.53	1.96
IUD	2.20	2.24	2.29	2.88	3.48	4.11
Sterilization (female)	4.80	4.90	4.99	5.36	5.73	6.12
Sterilization (male)	0.00	0.00	0.00	0.01	0.02	0.03
Total	24.90	25.40	25.89	26.41	26.91	27.41

Note: baseline = 24.9% mCPR

Table 10. Projected mCPR in% by method with 1.0% annual increase (scenario 2)

Method	2017	2018	2019	2020	2021	2022
Male condom	1.10	1.14	1.19	1.07	0.94	0.80
Injectable	3.10	3.22	3.35	3.15	2.92	2.67
Pills: COC	12.07	12.55	13.30	12.66	5.27	5.12
Pills: POP	0.63	0.66	0.41	0.81	7.90	7.69
SDM	0.00	0.00	0.00	0.01	0.02	0.03
LAM	0.30	0.31	0.32	0.31	0.29	0.27
Implant	0.70	0.73	0.76	1.19	1.65	2.14
IUD	2.20	2.29	2.38	3.04	3.74	4.49
Sterilization (female)	4.80	4.99	5.19	5.66	6.16	6.67
Sterilization (male)	0.00	0.00	0.00	0.01	0.02	0.03
Total	24.90	25.89	26.90	27.91	28.91	29.91

Note: baseline = 24.9% CPR

Brand Mix

Brand mix was disaggregated for oral contraceptives (COCs and POPs). The consumption trend for health facilities obtained through the PMIS showed that the proportion of COC consumption in 2018 was 92.83% and POP for the same period was 7.17%. For the period January to June 2019, COC consumption was 96.99% and for POP it was 3.01% of the total oral contraceptive consumption. Because of reported side effects from clients using COCs, the DOH NFP decided to scale-up the use of POPs and the following (table 11) proportions of brand mix are agreed to be used for the quantification period.

Table 11. Brand mix of oral contraceptives (%)

Oral contraceptive brand	2019	2020	2021-22
COC	97%	94.00%	40%
POP	3%	6.00%	60%
Total	100.00%	100.00%	100.00%

Source Mix

Sources of various contraceptive methods were taken from NDHS 2017 as the basis for estimating the source mix of FP commodities for the quantification period. Table 12 shows the source of contraceptives by the public and private sectors from NDHS and adjusted to 100%.

Table 12. Source of contraceptives (%) from NDHS 2017

Source	IUDs		Injectables		Implants		Oral pills		Male condoms	
	NDHS	Adjusted to 100%	NDHS	Adjusted to 100%	NDHS	Adjusted to 100%	NDHS	Adjusted to 100%	NDHS	Adjusted to 100%
Public sector	88.6	89.3	89.7	93.3	73.90	76.1	31.40	32.3	30.6	31.0
Private sector	10.6	10.7	6.4	6.7	23.20	23.9	65.70	67.7	68.2	69.0
Total	99.2	100.0	96.1	100	97.10	100	97.10	100	98.8	100

In general, the data shows that the public sector is the main source of long-acting and injectable FP methods, whereas the private sector is the main source for male condoms and oral contraceptives. The average annual percentage increase for each method was used to project for the quantification period as shown in table 13.

Table 13. Source mix by method for public sector

Method	Annual % increase	Public sector share (%) by year					
		2017	2018	2019	2020	2021	2022
IUD	0.137	89.3	89.5	89.6	89.7	89.9	90.0
Injectable	0.332	93.3	93.7	94.0	94.3	94.7	95.0
Implant	0.779	76.1	76.9	77.7	78.4	79.2	80.0
Oral pills	3.532	32.3	35.9	39.4	42.9	46.5	50.0
Male condom	3.806	31.0	34.8	38.6	42.4	46.2	50.0

In general, the DOH NFP is directing that the public sector contribution to FP increases every year.

FP Discontinuation and Failure Rate

The method specific discontinuation rate or switch rate for 12 months was taken from the contraceptives use dynamics study conducted by Measure Evaluation in 1998⁸ and compared with global data from the RESPOND project⁹ in Realty√. Some of the reasons mentioned for discontinuation in the study were method failure, desire to get pregnant, infrequent sex, separated and widowed, and subfecundity. For this quantification, the global average from Realty√ was used. In addition, the method-specific contraceptive failure rate was taken from studies by Trussell¹⁰ and Bradley.¹¹ Figure 5 and table 14 depict a 12-month method-specific FP discontinuation rate comparison from different sources and method-specific annual contraceptive failure rate, respectively.

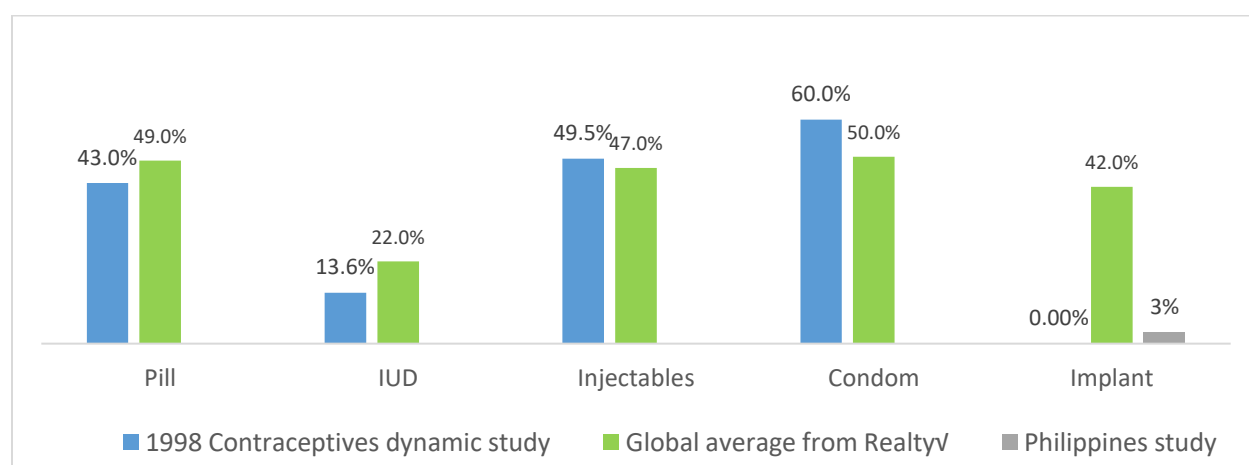


Figure 5. Comparison of FP discontinuation rate from different sources

Table 14. Method-specific annual contraceptive failure rates

Methods	Annual failure rate	Source
Female sterilization	0.50%	Trussell 2011
Male sterilization	0.15%	
Pill	6.30%	Bradley 2019
IUD	1.20%	
Injection	2.00%	
Implant	0.30%	
Male condom	8.60%	
LAM and other modern methods	24.00%	Trussell, 2011

⁸ Laguna EP, Po ALC, Perez AE. Contraceptive Use Dynamics in the Philippines: Determinants of Contraceptive Method Choice and Discontinuation. Calverton, Maryland: ORC Macro. 2000

⁹ The RESPOND Project. 2014. Reality Check: A planning and advocacy tool for strengthening family planning programs: Version 3. User's guide. New York: EngenderHealth.

¹⁰ Trussell J. Contraceptive failure in the United States. *Contraception*. 2011; 83:397–404

¹¹ Bradley SEK, Polis CB, Bankole A, Croft T. Global Contraceptive Failure Rates: Who Is Most at Risk? *Studies in Family Planning*. Wiley Online Library. 2019.

Supply Planning Assumption

Usage and wastage rate: Usage rate or CYP and annual wastage rate for contraceptives were considered for the quantification period (table 15). For short-acting contraceptives, a 10% annual wastage rate was considered and a 5% wastage rate was considered for long-acting contraceptives.

Table 15. Annual usage and wastage rate by method

Method	Usage rate	Wastage rate
Male condom	144 pieces per year	10%
Pills COC	13 cycles per year	10%
Pills POP	13 cycles per year	10%
Injection	4 vials per year	10%
Implant	One implant for 3 years	5%
IUD	One IUD for 4.6 years	5%

Supply plan considerations: The minimum, maximum, and DSL for the entire supply chain was calculated considering process calendars (lead time), shipment intervals at different levels, and safety stock for uncertainties (buffer stock). The process calendars are defined as follows:

- **Planning to order:** This is the amount of time, after finalizing the quantification, required to get budget approvals for procurement. It is only when the budget is approved that PS will award bidders and generate a purchase order or notice to proceed (NTP). This lead time keeps ticking until the NTP is generated.
- **Order to deliver:** This is the amount of time that it will take after the NTP is sent to the winners until products are delivered to the central warehouse according to the quantities and dates of deliveries stated in the NTP.
- **FDA quality control testing lead time:** This is the average time taken by FDA to test the quality of commodities once they are delivered to the central warehouse until the test result is completed and products are cleared for distribution.

The following two scenarios (table 16) were considered based on various process lead times and shipment intervals.

Table 16. Process lead time scenarios 1 and 2

Parameter	Central-level process lead time	
	Scenario 1 (months)	Scenario 2 (months)
Planning to order lead time	7	15
Order to delivery lead time	3	2
FDA QC testing lead time	1	1
Total	11	18
Shipment interval	Every six months	

Based on the above two scenarios, the maximum and minimum at different levels and desired stock for the entire pipeline are shown in table 17.

Table 17. Maximum, minimum, and DSL considered for quantification

Supply chain level	Scenario 1 (months)		Scenario 2 (months)	
	Minimum	Maximum	Minimum	Maximum
Central warehouse	3	9	6	12
Regional warehouse	6	9	6	9
Service delivery point	3	6	3	6
Total (national)	12	24	15	27
Central procurement shipment interval to central warehouse	6		6	
DSL	18		24	

The desired stock is an optimal national (entire pipeline) stock level in months which the stock level reaches when the required procurement quantity is delivered to the central warehouse on the specified delivery date.

Price of commodities: The current bid prices from the PS were taken for this quantification period and assumed to remain constant (table 18). The prices include freight and logistics costs up to delivery of commodities to the central warehouse.

Table 18. Price of FP commodities considered for the quantification

Product	Unit of measure (UOM)	Unit price (PHP)
COC	Cycle	30.00
POP		40.00
DMPA injection	Vial	34.00
Male condoms	Each	1.97
CycleBeads		120.00
Implant		650.00
IUD		37.00

Additional Assumptions

Other demographic parameters: More demographic parameters, such as annual pregnancy rate, abortion rate, maternal mortality rate, infant and child mortality rate, were taken from different sources to demonstrate the impact of FP using quantification results (table 19).

Table 19. Demographic parameters used for FP quantification impact

Additional demographic parameters	Value	Source
Annual pregnancy rate (per 1,000 women)	160	DOH NFP
Maternal mortality ratio (per 100,000 live births)	114	UN estimates
Infant mortality rate (per 1,000)	21	NDHS 2017
Child mortality rate (per 1,000)	27	NDHS 2017

Demography Results

Number of FP Users

The total number of FP users for each method was calculated from the CPR method mix for the two scenarios and WRA group. Table 20 provides the estimated number of total users by method for scenario 1 and table 21 for scenario 2 for each year and for the quantification period. More COC users will be enrolled, followed by female sterilization and POP users during the quantification period. The least number of FP users are for male sterilization, CycleBeads, and LAM. Male condom users provided in table 20 did not take into consideration those who use condoms for HIV prevention; only FP method users are considered.

After considering the method-specific FP discontinuation rate, the total number of new method-specific FP acceptors (adopters) were also identified/calculated and presented in tables 20-23 for each year in the quantification period. Oral contraceptives (COCs and POPs) attract new users followed by injectable and IUDs.

Table 20. Number of FP users during the quantification period, scenario 1 (0.5% mCPR growth)

Method	Number of users				Total 2019-2022
	2019	2020	2021	2022	
Pill/COC	3,578,569	3,404,551	1,417,434	1,381,438	9,781,992
Female sterilization	1,394,361	1,522,254	1,657,198	1,799,468	6,373,281
Pill/POP	110,677	217,312	2,126,151	2,072,157	4,526,297
IUD	639,082	816,962	1,006,850	1,209,242	3,672,136
DMPA injection	900,525	845,906	785,742	719,787	3,251,960
Implant	203,344	319,210	443,258	575,830	1,541,642
Male condom	319,541	287,916	253,423	215,936	1,076,816
LAM	87,148	82,582	77,533	71,979	319,242
CycleBeads	0	2,501	5,185	8,062	15,748
Male sterilization	0	2,501	5,185	8,062	15,748
Total	7,233,247	7,501,695	7,777,959	8,061,961	30,574,862

Table 21. Number of FP users during the quantification period, scenario 2 (1.0% mCPR growth)

Method	Number of users				Total 2019-2022
	2019	2020	2021	2022	
Pill/COC	3,716,738	3,597,992	1,522,819	1,507,482	10,345,031
Female sterilization	1,448,197	1,608,746	1,780,409	1,963,653	6,801,005
Pill/POP	114,951	229,659	2,284,229	2,261,223	4,890,062
IUD	663,757	863,380	1,081,709	1,319,574	3,928,420
DMPA injection	935,294	893,969	844,161	785,461	3,458,885
Implant	211,195	337,347	476,214	628,369	1,653,125
Male condom	331,879	304,275	272,265	235,638	1,144,057
LAM	90,512	87,274	83,298	78,546	339,630
Male sterilization	0	2,643	5,571	8,797	17,011
CycleBeads	0	2,643	5,571	8,797	17,011
Total	7,512,523	7,927,928	8,356,246	8,797,540	32,594,237

Table 22. New FP acceptors during the quantification period, scenario 1 (0.5% mCPR growth)

Method	Number of new FP acceptors				Total 2019-2022
	2019	2020	2021	2022	
Pill/COC	1,652,990	1,364,767	0	573,501	3,591,258
Pill/POP	9,331	154,226	2,002,283	860,252	3,026,092
DMPA injection	462,184	391,141	358,559	322,987	1,534,871
IUD	106,857	264,795	300,995	339,323	1,011,970
Male condom	196,341	160,100	138,257	114,567	609,265
Female sterilization	50,358	127,893	134,944	142,270	455,465
Implant	13,224	121,966	133,625	145,869	414,684
LAM	45,147	39,008	36,242	33,212	153,609
CycleBeads	0	2,501	3,685	4,950	11,136
Male sterilization	0	2,501	2,685	2,876	8,062
Total	2,536,432	2,628,898	3,111,275	2,539,807	10,816,412

Table 23. New FP acceptors during the quantification period, scenario 2 (1.0% mCPR growth)

Method	Number of New FP Acceptors				Total 2019-2022
	2019	2020	2021	2022	
Pill/COC	1,753,254	1,479,451	0	639,475	3,872,180
Pill/POP	11,609	164,137	2,153,323	959,213	3,288,282
DMPA injection	488,324	421,645	392,707	359,160	1,661,836
IUD	121,055	289,894	335,749	384,978	1,131,675
Male condom	206,253	171,524	150,555	126,732	655,064
Female sterilization	77,737	160,548	171,664	183,243	593,193
Implant	17,332	132,487	148,988	166,441	465,249
LAM	47,685	42,018	39,660	36,897	166,261
CycleBeads	0	2,643	3,985	5,455	12,083
Male sterilization	0	2,643	2,928	3,226	8,797
Total	2,723,251	2,866,990	3,399,559	2,864,820	11,854,620

Forecast Results

Based on the assumptions considered so far, the following forecasted quantities and costs for each commodity were calculated on two scenarios.

- Scenario 1: Considering a 0.5% average annual mCPR increase
- Scenario 2: Considering a 1.0% average annual mCPR increase

The forecast quantities are the clients' requirements for the quantification period.

The following tables depict the forecast quantities for both scenarios without wastage. Also, forecasted quantities for all FP users in the country and for public only users are displayed. Tables 24 and 25 show the total forecast requirements by quantity (*excluding* wastages) for scenarios 1 and 2, respectively, for all users.

Table 24. Forecast by *quantity* of FP commodities for all users (scenario 1 = 0.5% mCPR growth)

Product	UOM	Forecast quantity (clients' requirement)				Total quantity 2019-2020
		2019	2020	2021	2022	
Male condom	Each	46,013,906	41,459,964	36,492,932	31,094,799	155,061,601
DMPA injection	Vial	3,602,099	3,383,623	3,142,968	2,879,148	13,007,838
Pill/COC	Cycle	46,521,395	44,259,165	18,426,638	17,958,697	127,165,895
Pill/POP	Cycle	1,438,806	2,825,053	27,639,957	26,938,046	58,841,862
CycleBeads	Each	2,501	2,501	5,185	8,062	18,249
Implant	Each	13,224	121,966	133,625	145,869	414,684
IUD	Each	106,857	264,795	300,995	339,323	1,011,970

Table 25. Forecast by *quantity* of FP commodities for all users (scenario 2 = 1.0% mCPR growth)

Products	UOM	Forecast quantity (clients' requirement)				Total quantity 2019-2020
		2019	2020	2021	2022	
Male condom	Each	47,790,505	43,815,644	39,206,162	33,931,915	164,744,226
DMPA injection	Vial	3,741,176	3,575,874	3,376,645	3,141,844	13,835,539
Pill/COC	Cycle	48,317,588	46,773,890	19,796,648	19,597,265	134,485,391
Pill/POP	Cycle	1,494,358	2,985,567	29,694,972	29,395,897	63,570,794
CycleBeads	Each	2,643	2,643	5,571	8,797	19,654
Implant	Each	17,332	132,487	148,988	166,441	465,248
IUD	Each	121,055	289,894	335,749	384,978	1,131,676

Also, 10% wastage is considered for short-acting and 5% wastage for long-acting FP methods. Tables 26 and 27 display forecasted quantities including wastage for both scenarios.

Table 26. Forecast by *quantity* of FP commodities, including wastage for all users (scenario 1 = 0.5% mCPR growth)

Products	UOM	Wastage rate	Forecast quantity (clients' requirement)				Total quantity 2019-2020
			2019	2020	2021	2022	
Male condom	Each	10%	50,615,296	45,605,961	40,142,226	34,204,278	170,567,761
DMPA injection	Vial	10%	3,962,309	3,721,985	3,457,264	3,167,063	14,308,621
Pill/COC	Cycle	10%	51,173,535	48,685,082	20,269,302	19,754,567	139,882,486
Pill/POP	Cycle	10%	1,582,687	3,107,558	30,403,953	29,631,850	64,726,048
CycleBeads	Each	10%	2,751	2,751	5,704	8,868	20,074
Implant	Each	5%	13,885	128,064	140,306	153,163	435,418
IUD	Each	5%	112,200	278,035	316,045	356,290	1,062,570

Table 27. Forecast by *quantity* of FP commodities, including wastage for all users (scenario 2 = 1.0% mCPR growth)

Products	UOM	Wastage rate	Forecast quantity (clients' requirements)				Total quantity 2019-2020
			2019	2020	2021	2022	
Male condom	Each	10%	52,569,555	48,197,208	43,126,778	37,325,107	181,218,648
DMPA injection	Vial	10%	4,115,293	3,933,462	3,714,310	3,456,028	15,219,093
Pill/COC	Cycle	10%	53,149,347	51,451,279	21,776,313	21,556,991	147,933,930
Pill/POP	Cycle	10%	1,643,794	3,284,124	32,664,470	32,335,486	69,927,874
CycleBeads	Each	10%	2,907	2,907	6,128	9,677	21,619
Implant	Each	5%	18,199	139,111	156,437	174,763	488,510
IUD	Each	5%	127,108	304,389	352,536	404,227	1,188,260

Because the government is procuring only for the public sector, the forecast quantities with wastages for scenarios 1 and 2 are presented in tables 28 and 29.

Table 28. Forecast by *quantity* of FP commodities, including wastage for public sector only (scenario 1 = 0.5% mCPR growth)

Product	UOM	2019	2020	2021	2022	Total quantity 2019-2020
Male condom	Each	19,528,898	19,331,757	18,543,433	17,102,139	74,506,227
DMPA injection	Vial	3,724,735	3,511,176	3,272,925	3,008,710	13,517,546
Pill/COC	Cycle	20,163,743	20,902,997	9,418,650	9,877,283	60,362,673
Pill/POP	Cycle	623,621	1,334,234	14,127,975	14,815,925	30,901,755
CycleBeads	Each	2,464	2,468	5,126	7,981	18,039
Implant	Each	10,784	100,457	111,152	122,530	344,923
IUD	Each	100,518	249,469	284,007	320,661	954,655

Table 29. Forecast by *quantity* of FP commodities, including wastage for public sector only (scenario 2 = 1.0% mCPR growth)

Product	UOM	2019	2020	2021	2022	Total 2019-2020
Male condom	Each	20,282,909	20,430,153	19,922,127	18,662,553	79,297,742
DMPA injection	Vial	3,868,547	3,710,675	3,516,265	3,283,227	14,378,714
Pill/COC	Cycle	20,942,266	22,090,668	10,118,921	10,778,495	63,930,350
Pill/POP	Cycle	647,699	1,410,043	15,178,382	16,167,743	33,403,867
CycleBeads	Each	2,604	2,608	5,507	8,709	19,428
Implant	Each	14,134	109,123	123,932	139,811	387,000
IUD	Each	113,874	273,115	316,799	363,804	1,067,592

Supply Plan/Procurement Results

Based on the forecast and supply plan assumptions above, and using PipeLine and Excel as supply/procurement planning tools, the following procurement requirements were calculated in quantities and costs. The supply plan/procurement requirements for public sector were calculated based on the following six scenarios (table 30).

Table 30. Supply plan/procurement scenarios

Scenario	CPR growth (%)	DSL (months)	Tool used
1	0.5	18	PipeLine
2	1.0	18	PipeLine
3	0.5	24	PipeLine
4	1.0	24	PipeLine
5	0.5	3 month buffer stock	Excel
6	1.0	3 month buffer stock	Excel

In summary, the total public sector FP commodity procurement requirement by value for each scenario is presented below in tables 31–42.

Table 31. Procurement requirements by *quantity* (public), 0.5% CPR growth and 18-month DSL (scenario 1)

Product	UOM	2020		2021	2022	Total quantity
		Q 1 and 2	Q 3 and 4			
COC	Cycle	15,027,904	5,838,508	4,460,745	9,877,283	35,204,440
POP	Cycle	477,954	20,413,658	15,159,896	14,815,944	50,867,452
DMPA injection	Vial	2,965,471	1,403,428	4,041,781	3,008,692	11,419,372
Male condoms	Each	24,493,568	14,927,305	16,381,489	17,102,175	72,904,537
Implant	Each	0	70,783	128,216	122,512	321,511
IUD	Each	0	199,278	338,997	320,643	858,918

Table 32. Procurement requirements by *value* (public), 0.5% CPR growth and 18-month DSL (scenario 1) (1 USD = 53 PHP)

Product	UOM	Unit price (PHP)	2020		2021	2022	Total cost
			Q 1 and 2	Q 3 and 4			
COC	Cycle	30	450,837,120	175,155,240	133,822,350	296,318,490	1,056,133,200
POP	Cycle	40	19,118,160	816,546,320	606,395,840	592,637,760	2,034,698,080
DMPA injection	Vial	34	100,826,014	47,716,552	137,420,554	102,295,528	388,258,648
Male condoms	Each	1.97	48,252,329	29,406,791	32,271,533	33,691,285	143,621,938
Implant	Each	650	-	46,008,950	83,340,400	79,632,800	208,982,150
IUD	Each	37	-	7,373,286	12,542,889	11,863,791	31,779,966
Total in PHP			619,033,623	1,122,207,139	1,005,793,566	1,116,439,654	3,863,473,982
Total in USD			11,679,880	21,173,720	18,977,237	21,064,899	72,895,736

Table 33. Procurement requirements by *quantity* (public), 1.0% CPR growth and 18-month DSL (scenario 2)

Product	UOM	2020		2021	2022	Total quantity
		Q 1 and 2	Q 3 and 4			
COC	Cycle	17,396,625	6,211,513	11,559,552	10,778,495	45,946,185
POP	Cycle	962,544	21,592,525	16,662,445	16,167,726	55,385,240
Male condoms	Each	24,998,722	17,965,592	18,032,775	18,662,534	79,659,623
DMPA injection	Vial	3,060,656	3,109,834	3,166,705	3,166,713	12,503,908
Implant	Each	0	99,737	76,256	211,301	387,294
IUD	Each	0	278,796	387,305	363,804	1,029,905

Table 34. Procurement requirements by *value* (public), 1.0% CPR growth and 18-month DSL (scenario 2) (1 USD = 53 PHP)

Product	UOM	Unit price (PHP)	2020		2021	2022	Total cost
			Q 1 and 2	Q 3 and 4			
COC	Cycle	30	521,898,750.00	186,345,390.00	346,786,560.00	323,354,850.00	1,378,385,550.00
POP	Cycle	40	38,501,760.00	863,701,000.00	666,497,800.00	646,709,040.00	2,215,409,600.00
Male condoms	Each	1.97	49,247,482.34	35,392,216.24	35,524,566.75	36,765,191.98	156,929,457.31
DMPA injection	Vial	34	104,062,304.00	105,734,356.00	107,667,970.00	107,668,242.00	425,132,872.00
Implant	Each	650	0.00	64,829,050.00	49,566,400.00	137,345,650.00	251,741,100.00
IUD	Each	37	0.00	10,315,452.00	14,330,285.00	13,460,748.00	38,106,485.00
Total cost (PHP)			713,710,296.34	1,266,317,464.24	1,220,373,581.75	1,265,303,721.98	4,465,705,064.31
Total cost (USD)			13,466,232	23,892,782	23,025,917	23,873,655	84,258,586

Table 35. Procurement requirements by *quantity* (public), 0.5% CPR growth and 24-month DSL (scenario 3)

Product	UOM	2020		2021	2022	Total quantity 2020-2022
		Q 1 and 2	Q 3 and 4			
COC	Cycle	22,400,000	0	7,865,799	9,877,283	40,143,082
POP	Cycle	1,145,070	26,810,528	15,503,871	14,815,944	58,275,413
DMPA injection	Vial	4,721,059	1,383,574	3,810,403	3,008,692	12,923,728
Male condoms	Each	34,159,448	14,533,141	15,660,841	17,102,175	81,455,605
Implant	Each	0	126,361	133,904	122,512	382,777
IUD	Each	0	341,280	357,327	320,643	1,019,250

Table 36. Procurement requirements by *value* (public), 0.5% CPR growth and 24-month DSL (scenario 3) (1 USD = 53 PHP)

Product	UOM	Unit price (PHP)	2020		2021	2022	Total value 2020-2022
			Q 1 and 2	Q 3 and 4			
COC	Cycle	30	672,000,000	0	235,973,970	296,318,490	1,204,292,460
POP	Cycle	40	45,802,800	1,072,421,120	620,154,840	592,637,760	2,331,016,520
DMPA injection	Vial	34	160,516,006	47,041,516	129,553,702	102,295,528	439,406,752
Male condoms	Each	1.97	67,294,113	28,630,288	30,851,857	33,691,285	160,467,543
Implant	Each	650	0	82,134,650	87,037,600	79,632,800	248,805,050
IUD	Each	37	0	12,627,360	13,221,099	11,863,791	37,712,250
Total in PHP			945,612,919	1,242,854,934	1,116,793,068	1,116,439,654	4,421,700,575
Total in USD			17,841,753	23,450,093	21,071,567	21,064,899	83,428,312

Table 37. Procurement requirements by *quantity* (public), 1.0% CPR growth and 24-month DSL (scenario 4)

Product	UOM	2020		2021	2022	Total quantity 2020-2022
		Q 1 and 2	Q 3 and 4			
COC	Cycle	25,441,960	0	8,936,014	10,778,495	45,156,469
POP	Cycle	1,432,560	28,711,699	17,157,110	16,167,726	63,469,095
DMPA injection	Vial	4,915,994	3,012,628	3,050,185	3,283,269	14,262,076
Male condoms	Each	35,213,800	17,711,576	17,402,991	18,662,534	88,990,901
Implant	Each	-	161,705	77,576	217,919	457,200
IUD	Each	-	437,196	410,807	363,804	1,211,807

Table 38. Procurement requirements by *value* (public), 1.0% CPR growth and 24-month DSL (scenario 4) (1 USD = 53 PHP)

Product	UOM	Unit price (PHP)	2020		2021	2022	Total cost 2020-2022
			Q 1 and 2	Q 3 and 4			
COC	Cycle	30	763,258,800	0	268,080,420	323,354,850	1,354,694,070
POP	Cycle	40	57,302,400	1,148,467,960	686,284,400	646,709,040	2,538,763,800
DMPA injection	Vial	34	167,143,796	102,429,352	103,706,290	111,631,146	484,910,584
Male condoms	Each	1.97	69,371,186	34,891,805	34,283,892	36,765,192	175,312,075
Implant	Each	650	0	105,108,250	50,424,400	141,647,350	297,180,000
IUD	Each	37	0	16,176,252	15,199,859	13,460,748	44,836,859
Total (PHP)			1,057,076,182	1,407,073,619	1,157,979,261	1,273,568,326	4,895,697,388
Total (USD)			19,944,834	26,548,559	21,848,665	24,029,591	92,371,649

Table 39. Procurement requirements by *quantity* (public), 0.5% CPR growth and 3-month buffer (scenario 5)

Product	UOM	2020	2021	2022	Total quantity 2020-2022
COC	Cycle	4,442,493	9,418,650	9,877,283	23,738,426
POP	Cycle	2,222,829	14,127,975	14,815,925	31,166,729
DMPA injection	Vial	1,440,757	3,272,925	3,008,710	7,722,392
Male condom	Each	16,187,168	18,543,433	17,102,139	51,832,740
Implant	Each	-	44,846	122,530	167,376
IUD	Each	-	128,460	320,661	449,121

Table 40. Procurement requirements by *value* (public), 0.5% CPR growth and 3-month buffer (scenario 5) (1 USD = 53 PHP)

Product	UOM	Unit price (PHP)	2020	2021	2022	Total quantity 2020-2022
COC	Cycle	30	133,274,790	282,559,500	296,318,490	712,152,780
POP	Cycle	40	88,913,160	565,119,000	592,637,000	1,246,669,160
DMPA injection	Vial	34	48,985,738	111,279,450	102,296,140	262,561,328
Male condom	Each	1.97	31,888,721	36,530,563	33,691,214	102,110,498
Implant	Each	650	0	29,149,900	79,644,500	108,794,400
IUD	Each	37	0	4,753,020	11,864,457	16,617,477
Total cost (PHP)			303,062,409	1,029,391,433	1,116,451,801	2,448,905,643
Total cost (USD)			\$5,718,159	\$19,422,480	\$21,065,128	\$46,205,767

Table 41. Procurement requirements by *quantity* (public), 1.0% CPR growth and 3-month buffer (scenario 6)

Product	UOM	2020	2021	2022	Total quantity 2020-2022
COC	Cycle	6,251,854	10,118,921	10,778,495	27,149,270
POP	Cycle	2,517,180	15,178,382	16,167,743	33,863,305
DMPA injection	Vial	1,771,942	3,516,265	3,283,227	8,571,434
Male condom	Each	17,999,028	19,922,127	18,662,553	56,583,708
Implant	Each	-	71,194	139,811	211,005
IUD	Each	-	199,875	363,804	563,679

Table 42. Procurement requirements by value (public), 1.0% CPR growth and 3-month buffer (scenario 6) (1 USD = 53 PHP)

Product	UOM	Unit price (PHP)	2020	2021	2022	Total quantity 2020-2022
COC	Cycle	30	187,555,621	303,567,635	323,354,865	814,478,121
POP	Cycle	40	100,687,189	607,135,270	646,709,729	1,354,532,188
DMPA injection	Vial	34	60,246,018	119,553,010	111,629,717	291,428,745
Male condom	Each	1.97	35,458,085	39,246,590	36,765,230	111,469,905
Implant	Each	650	0	46,276,076	90,876,865	137,152,941
IUD	Each	37	0	7,395,376	13,460,750	20,856,126
Total cost (PHP)			383,946,913	1,123,173,957	1,222,797,156	2,729,918,026
Total cost (USD)			\$7,244,281	\$21,191,961	\$23,071,644	\$51,507,887

QUANTIFICATION ANALYSIS

CPR Trend

In general, the total mCPR has been increasing for both scenarios 1 and 2 and the overall current trend (figure 6). It is only with scenario 2 that the national FP target (29.9%) will be achieved by 2022.

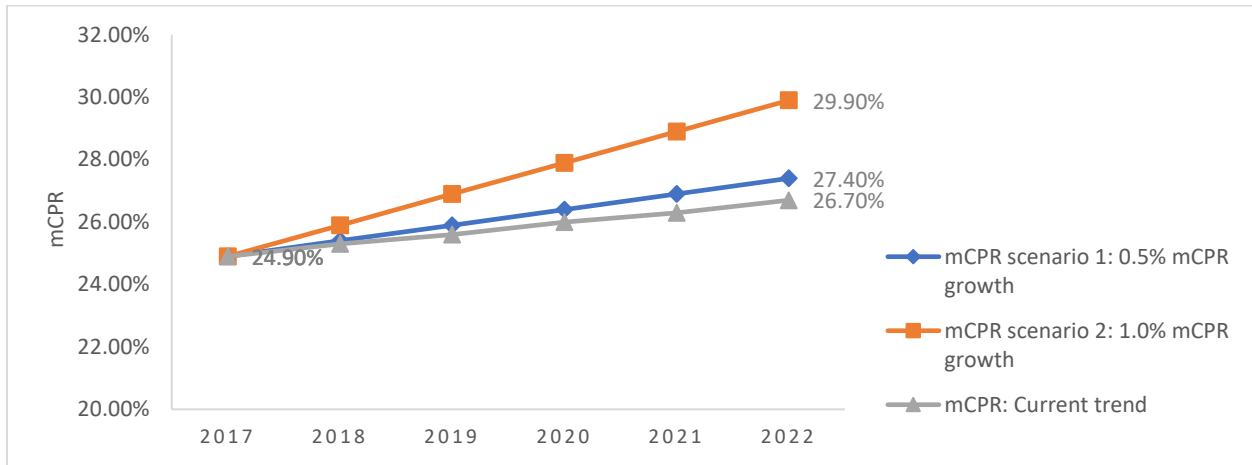


Figure 6. Projected mCPR for all WRA for scenarios 1 and 2

When the use of long- and short-acting FP methods are compared, it is estimated that long-acting methods are expected to increase at an average annual rate of approximately 0.9 percentage points (scenario 1) and short-acting methods will be decreasing by 0.4 percentage points. For scenario 2, an increasing trend is also shown for long-acting FP method with an average percentage point of 1.1 while a decreasing trend was shown for short-acting FP method with an average of percentage point 0.1.

Figures 7 and 8 provide details mCPR trends for long- and short-acting FP methods for scenarios 1 and 2, respectively.

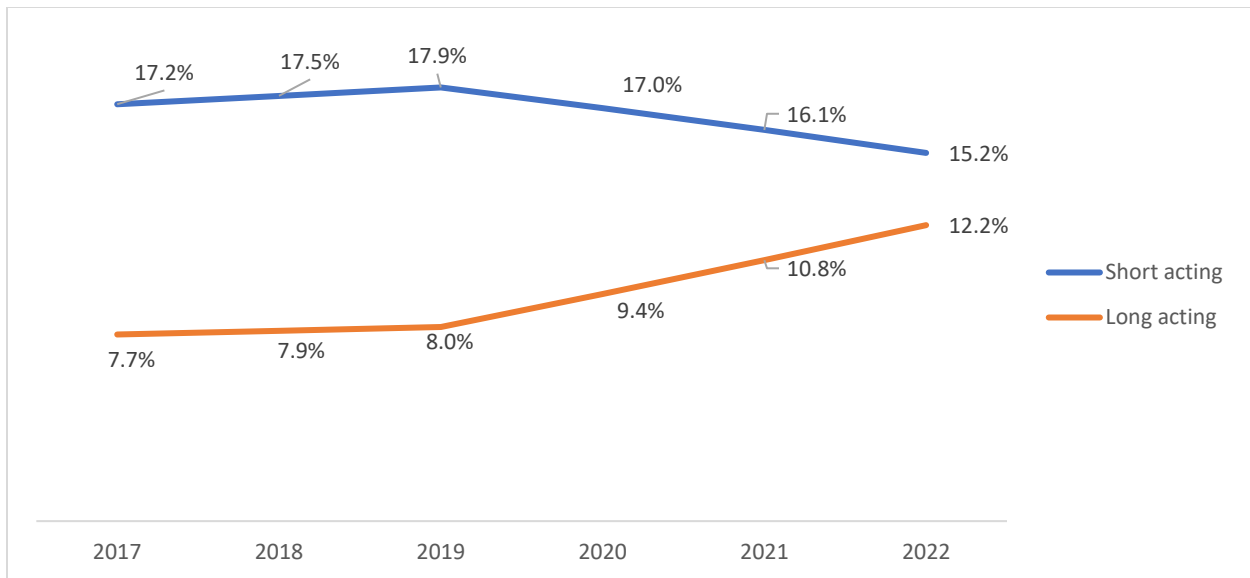


Figure 7. mCPR trend for long- and short-acting FP methods (scenario 1), 0.5% mCPR increase

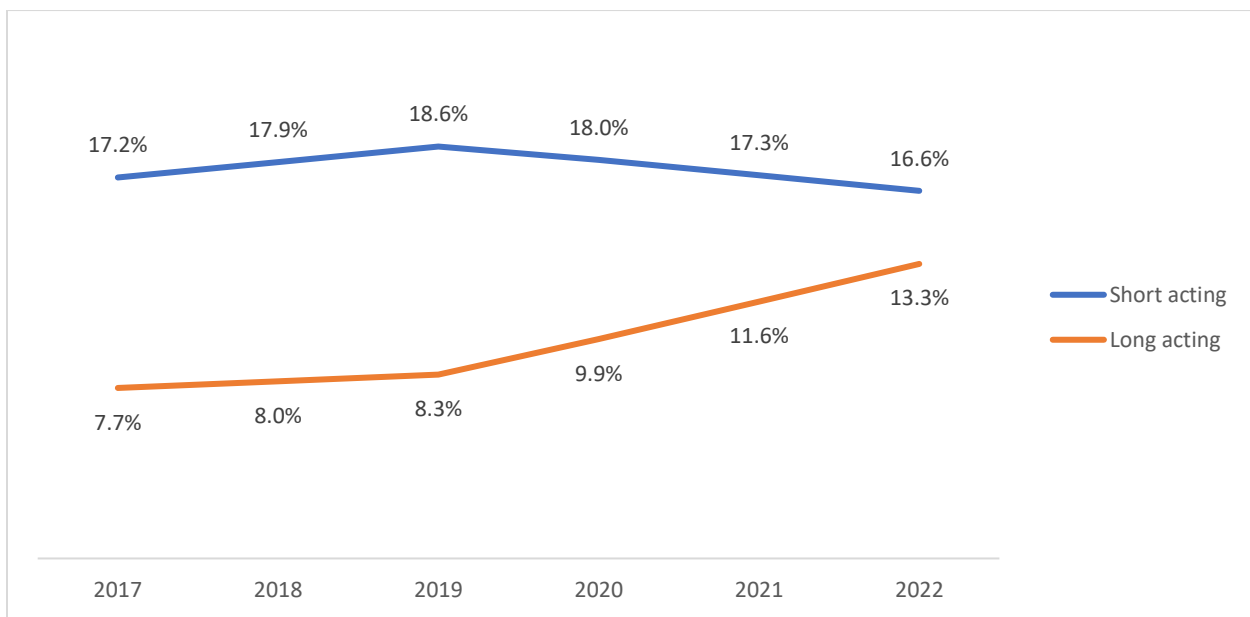


Figure 8. mCPR trend for long- and short-acting FP methods (scenario 2), 1.0% mCPR increase

Method Mix of Modern FP Methods

The method mix projection shows that use of oral contraceptives, injectables, and condoms are decreasing; however, the projections for the use of female sterilization, IUDs, and implants are increasing. Although the mCPR trend for oral contraceptives is decreasing compared to other methods, it is the most used FP method, followed by female sterilization and injectables. Male sterilization, SDM, LAM, and implant are the least used of all modern FP methods.

Use of IUDs is increasing and will overtake injectables by 2020. Also, the use of implant is increasing and will overtake condoms by 2020. In general, the projection shows that the strategy for national FP is shifting toward long-acting rather than short-acting FP methods, which will help DOH achieve its target with less resources compared to short-acting FP methods. Figures 9-11 show the details of method mix projections for both scenarios and the method mix proportion for modern FP methods.

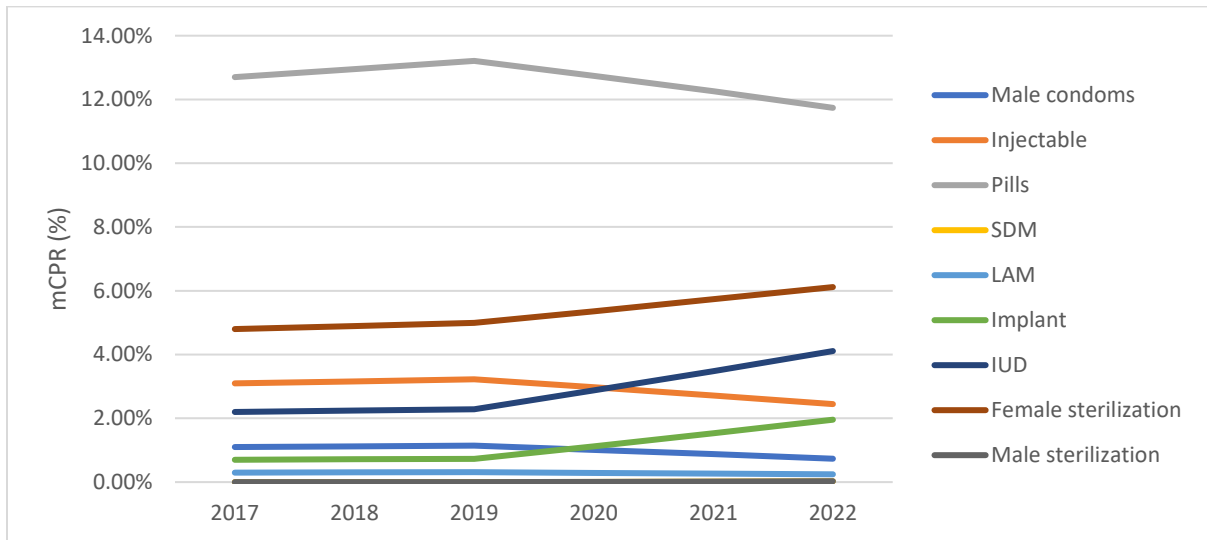


Figure 9. mCPR trend for different method mix (scenario 1), 0.5% mCPR increase

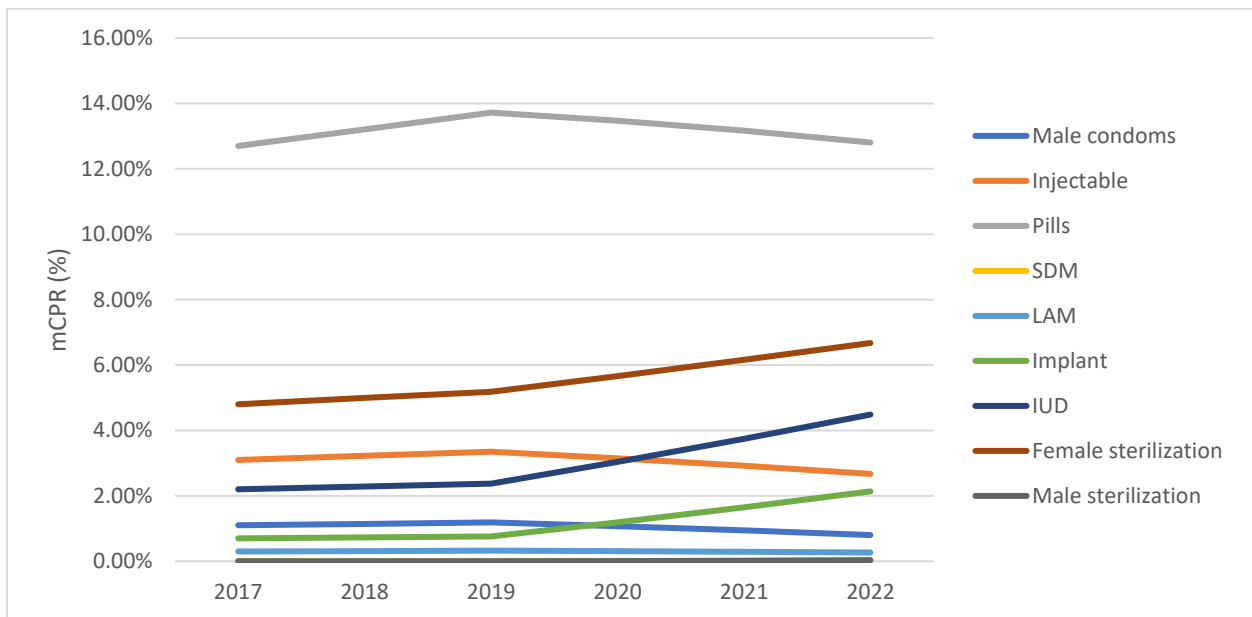


Figure 10. mCPR trend for different method mix (scenario 2), 1.0% mCPR increase

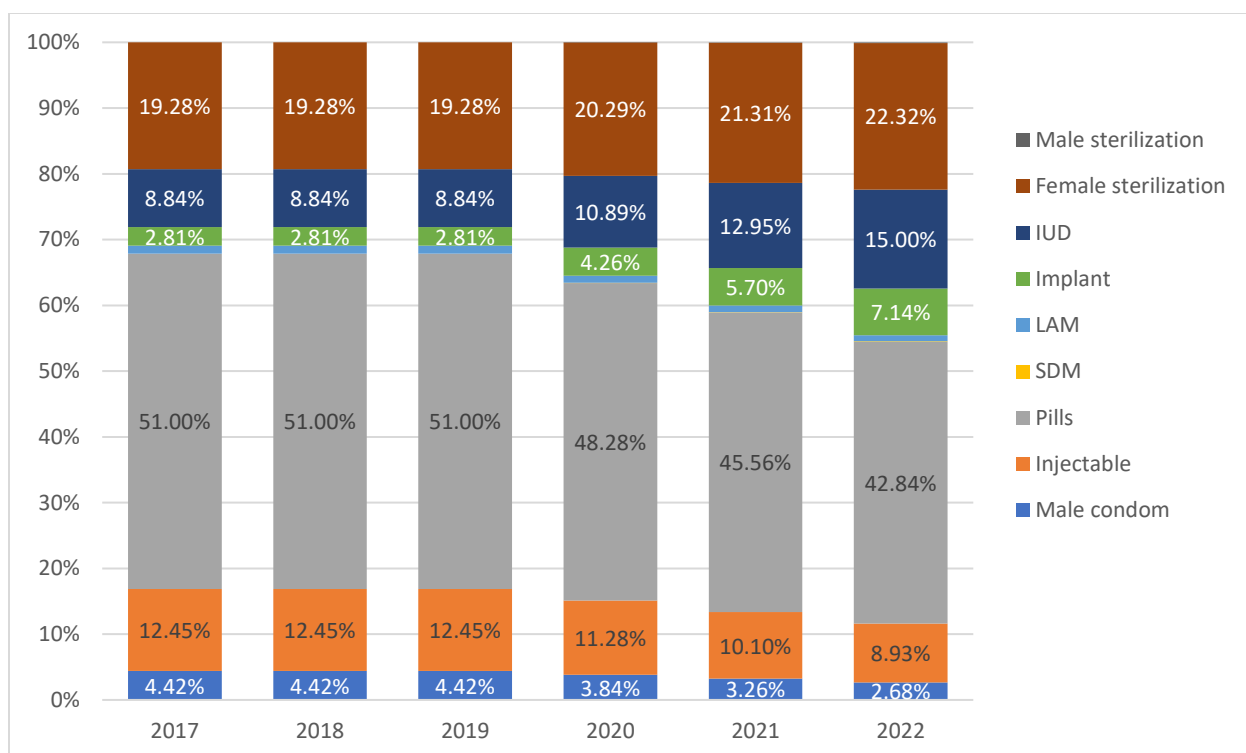


Figure 11. Proportion of method mix

Supply Plan/Procurement Analysis

To fulfill the demand for FP commodities for different scenarios in each year and also for 2020-2022, a summary of FP commodity requirement by quantity and values is presented in tables 43 and 44, respectively.

Table 43. Summary of procurement *quantity* of FP commodities for public sector by different scenarios

Product	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6
	0.5% CPR, 18 months	1% CPR, 18 months	0.5% CPR, 24 months	1% CPR, 24 months	0.5% CPR, 3 months	1% CPR, 3 months
COC, cycle	35,204,440	45,946,185	40,143,082	45,156,469	23,738,426	27,149,270
POP, cycle	50,867,452	55,385,240	58,275,413	63,469,095	31,166,729	33,863,305
DMPA injection, vial	11,419,372	12,503,908	12,923,728	14,262,076	7,722,392	8,571,434
Male condoms, each	72,904,537	79,659,623	81,455,605	88,990,901	51,832,740	56,583,708
Implant, each	321,511	387,294	382,777	457,200	167,376	211,005
IUD, each	858,918	1,029,905	1,019,250	1,211,807	449,121	563,679

Table 44. Summary of procurement values of FP commodities for public sector by different scenarios (1 USD = 53 PHP)

Scenario	Currency	2020	2021	2022	Total
1	PHP	1,741,240,761	1,005,793,566	1,116,439,654	3,863,473,981
	USD	32,853,599	18,977,237	21,064,899	72,895,735
2	PHP	1,980,027,760	1,220,373,581	1,265,303,721	4,465,705,062
	USD	37,359,014	23,025,917	23,873,655	84,258,586
3	PHP	2,188,467,853	1,116,793,068	1,116,439,654	4,421,700,575
	USD	41,291,846	21,071,567	21,064,899	83,428,312
4	PHP	2,464,149,801	1,157,979,261	1,273,568,326	4,895,697,388
	USD	46,493,393	21,848,665	24,029,591	92,371,649
5	PHP	303,062,409	1,029,391,433	1,116,451,801	2,448,905,643
	USD	5,718,159	19,422,480	21,065,128	46,205,767
6	PHP	383,946,913	1,123,173,957	1,222,797,156	2,729,918,026
	USD	7,244,281	21,191,961	23,071,644	51,507,886

- Comparison of total procurement requirements (after consideration of stock on hand and outstanding shipments) by year shows that the procurement requirement for 2020 is significantly higher than that of subsequent years for all scenarios except scenarios 5 and 6, mainly because of larger orders of some commodities needed to reach the DSL in 2020 (figure 12).
- In subsequent years, the entire pipeline will be more or less stable.
- For scenarios 5 and 6, the procurement value drastically increased in 2021 compared to 2020 because of available stock in the country and outstanding shipments that are expected to be delivered in 2020 for most products. Also, the huge shift of POP usage from COC (from 6% in 2020 to 60% in 2021) users contributed to the cost change because the price of POPs (PHP 40) is higher than that of COCs (PHP 30).

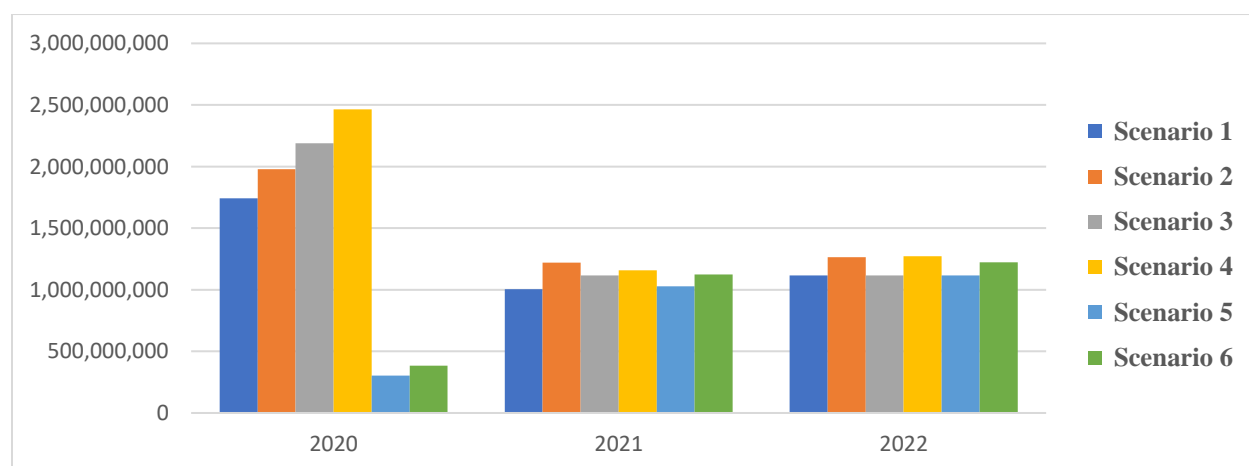


Figure 12. Comparison of procurement values (in PHP) of different scenarios for different years

Analysis of procurement requirements by group of commodities shows that POPs account for most of the total procurement requirement by value (>50%) followed by COCs (>27%) and injection (>10%) for all scenarios for 2020–2022. IUDs have the least procurement requirement by value, which is 1% of the total value for all scenarios, except scenario 6, which is 5%. This clearly indicates that advocating for long-acting FP methods not only supports achievement of the national target but also is resource efficient. This is also demonstrated in comparing the price paid for each method against CYP in figure 13.

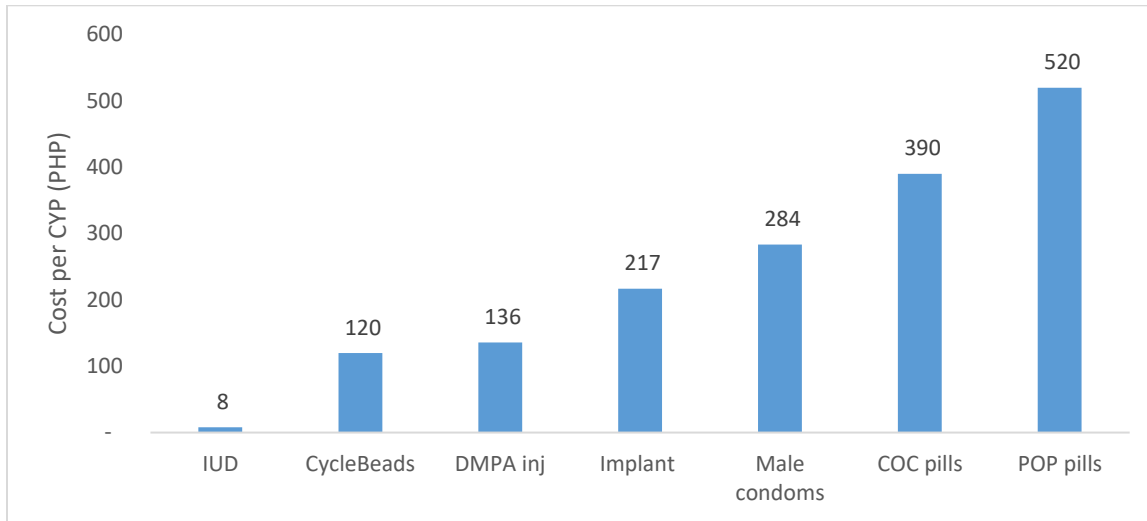


Figure 13. Comparison of cost (in PHP) per CYP for different methods

Figure 14 depicts the proportion of procurement value for different FP commodities with different scenarios.

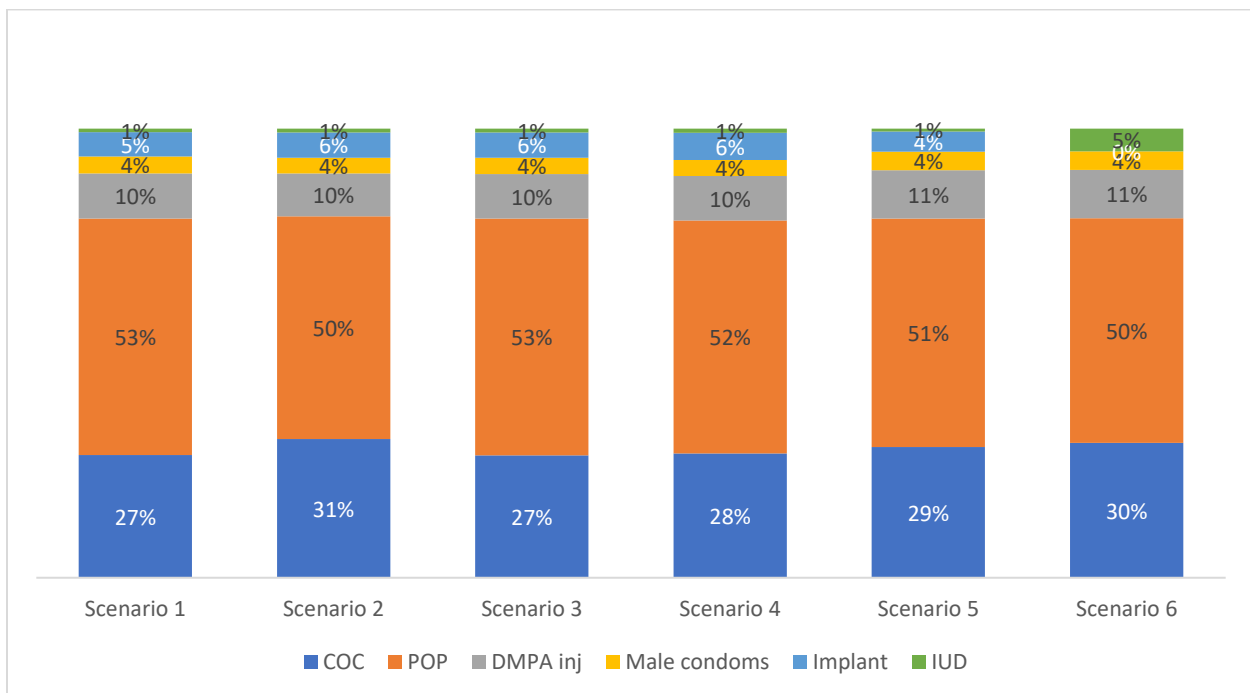


Figure 14. Proportion of FP commodities procurement value for different scenarios 2020-2022

Quantification Impact/Outcome

If FP commodities are procured and properly used by clients as assumed in this quantification, and if other FP program activities are implemented as planned, the following positive outcomes will be gained during the quantification period:

Couple Year Protection

CYP is estimated protection provided by FP services during a one-year period. It is calculated by dividing the quantity of commodities by the CYP factor (for short-acting products, which are used in multiple numbers per year) or multiplying the total number of commodities by CYP factors (for long-acting products, which are used for multiple years).

- For scenario 1, in total, 30,194,050 couples are estimated to be protected from unwanted pregnancy during the quantification period, whereas for scenario 2, the total CYP is estimated to 33,765,282.
- Short-acting methods comprise a higher proportion of CYP than long-acting methods for both scenarios—62% in scenario 1 and 59% in scenario 2.
- COCs provide the highest CYP, followed by female sterilization, IUD, POPs, and injectables for both scenarios (figure 15).

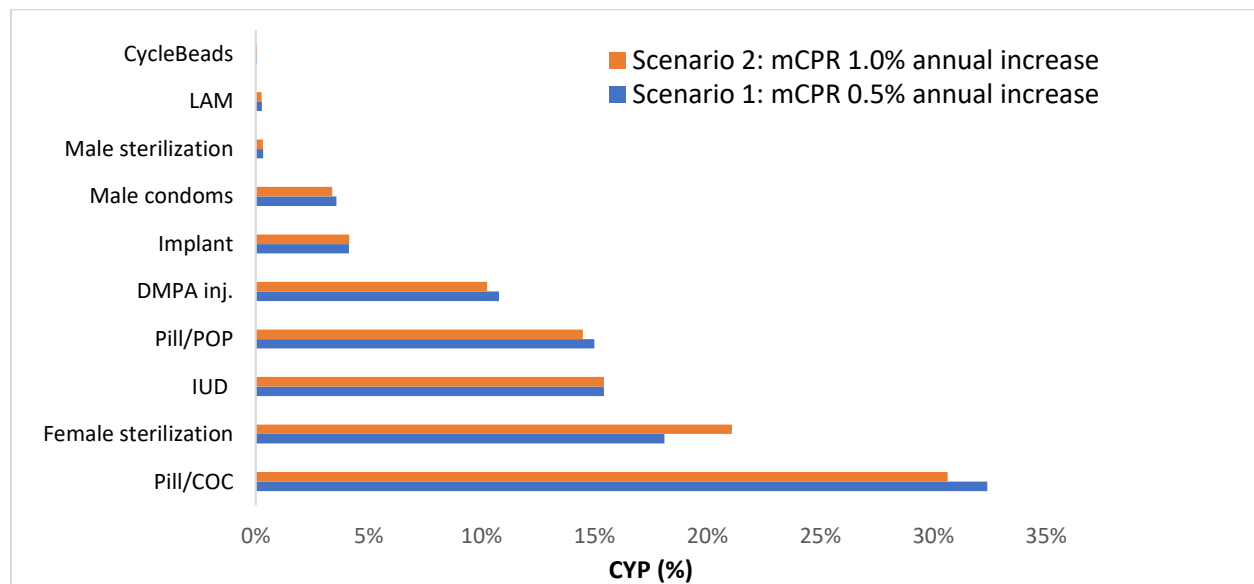


Figure 15. Proportion of CYP contributed by different scenarios and methods

- The lowest CYP proportion is provided by CycleBeads, followed by LAM, male sterilization, male condoms, and implant.

Tables 45 and 46 show the CYP numbers for each method for scenarios 1 and 2, respectively.

Table 45. CYP by method—scenario 1 (0.5% mCPR annual growth)

Method	CYP or usage rate	2019	2020	2021	2022	Total
Male condom	144/year	319,541	287,916	253,423	215,936	1,076,816
DMPA injection	4/year	900,525	845,906	785,742	719,787	3,251,960
Pill/COC	13/year	3,578,569	3,404,551	1,417,434	1,381,438	9,781,992
Pill/POP	13/year	110,677	217,312	2,126,151	2,072,157	4,526,297
CycleBeads	1/year	0	2,501	5,185	8,062	15,748
LAM	4/year	21,787	20,646	19,383	17,995	79,811
Implant	1 for 3 years	39,672	365,897	400,874	437,608	1,244,051
IUD	1 for 4.6 years	491,541	1,218,056	1,384,579	1,560,888	4,655,064
Female sterilization	1 for 12 years	604,292	1,534,716	1,619,326	1,707,238	5,465,572
Male sterilization	1 for 12 years	0	30,007	32,216	34,517	96,740
Total CYP		6,066,604	7,927,508	8,044,313	8,155,626	30,194,051
Long acting		18.72%	39.72%	42.73%	45.86%	38%
Short acting		81.28%	60.28%	57.27%	54.14%	62%

Table 46. CYP by method—scenario 2 (1.0% mCPR annual growth)

Method	CYP or usage rate	2019	2020	2021	2022	Total
Male condom	144/year	331,879	304,275	272,265	235,638	1,144,057
DMPA injection	4/year	935,294	893,969	844,161	785,461	3,458,885
Pill/COC	13/year	3,716,738	3,597,992	1,522,819	1,507,482	10,345,031
Pill/POP	13/year	114,951	229,659	2,284,229	2,261,223	4,890,062
CycleBeads	1/year	-	2,643	5,571	8,797	17,011
LAM	4/year	22,628	21,819	20,824	19,637	84,908
Implant	1 for 3 years	51,997	397,461	446,963	499,323	1,395,744
IUD	1 for 4.6 years	556,853	1,333,512	1,544,444	1,770,898	5,205,707
Female sterilization	1 for 12 years	932,847	1,926,581	2,059,967	2,198,917	7,118,312
Male sterilization	1 for 12 years	-	31,712	35,137	38,717	105,566
Total		6,663,187	8,739,623	9,036,380	9,326,093	33,765,283
Long acting		23.14%	42.21%	45.22%	48.34%	41%
Short acting		76.86%	57.79%	54.78%	51.66%	59%

Unintended Pregnancies Averted

A total of 3,698,731 unwanted pregnancies are projected to be averted with scenario 1 and 3,944,507 with scenario 2 using the modern methods of FP listed in tables 47 and 48 during 2019–2022. This is calculated based on an annual pregnancy rate of 160 in a WRA group of 1000, based on data from the program and the method-specific annual failure rate^{10,11} of each method according to the following equation.

$$\text{Number of unintended pregnancies averted} = (\text{Number of users} \times \text{pregnancy rate}) - (\text{number of users} \times \text{method-specific failure rate})$$

Tables 47 and 48 show the details per year and by type of method/product for scenarios 1 and 2.

Table 47. Number of unintended pregnancies averted—scenario 1

Methods	Failure rate	2019	2020	2021	2022	Total
Male condom	8.6%	23,646	21,306	18,753	15,979	79,684
DPMA injection	2.0%	126,073	118,427	110,004	100,770	455,274
Pill/COC	6.3%	347,121	330,241	137,491	134,000	948,853
Pill/POP	6.3%	10,736	21,079	206,237	200,999	439,051
Implant	0.3%	31,925	50,116	69,592	90,405	242,038
IUD	1.2%	94,584	120,910	149,014	178,968	543,476
Female sterilization	0.5%	216,126	235,949	256,866	278,917	987,858
Male sterilization	0.2%	-	396	822	1,278	2,496
Total		850,211	898,424	948,779	1,001,316	3,698,730

Table 48. Number of unintended pregnancies averted—scenario 2

Methods	Failure rate	2019	2020	2021	2022	Total
Male condom	8.6%	24,559	22,516	20,148	17,437	84,660
DPMA injection	2.0%	130,941	125,156	118,183	109,965	484,245
Pill/COC	6.3%	360,524	349,005	147,713	146,226	1,003,468
Pill/POP	6.3%	11,150	22,277	221,570	219,339	474,336
Implant	0.3%	33,158	52,963	74,766	98,654	259,541
IUD	1.2%	98,236	127,780	160,093	195,297	581,406
Female sterilization	0.5%	224,471	249,356	275,963	304,366	1,054,156
Male sterilization	0.2%	-	419	883	1,394	2,696
Total		883,039	949,472	1,019,319	1,092,678	3,944,508

Maternal Mortality Avoided

A projected 2,974 maternal deaths can be averted with scenario 1 and 3,171 with scenario 2 during the quantification period 2019-2022 using the modern FP methods listed in tables 49 and 50. The number of material deaths averted is calculated based on a maternal mortality ratio of 114 per 100,000 births¹² according to the following equation.

$$\text{Maternal mortality averted} = \text{Number of unintended births averted} \times \text{maternal mortality ratio}/100,000$$

Tables 49 and 50 show the details per year and by type of method/product for scenarios 1 and 2.

¹² WHO, UNICEF, UNFPA, World Bank Group, United Nations Population Division. Trends in Maternal Mortality: 1990-2015. Geneva: WHO. 2015

Table 49. Total number of maternal deaths averted—scenario 1

Method	2019	2020	2021	2022	Total
Male condom	19	17	15	13	64
DPMA injection	101	95	88	81	366
Pill/COC	279	265	111	108	763
Pill/POP	9	17	166	162	353
Implant	26	40	56	73	195
IUD	76	97	120	144	437
Female sterilization	174	190	206	224	794
Male sterilization	0	0	1	1	2
Total	684	721	763	806	2,974

Table 50. Total number of maternal deaths averted—scenario 2

Method	2019	2020	2021	2022	Total
Male condom	20	18	16	14	68
DPMA injection	105	101	95	88	389
Pill/COC	290	280	119	118	807
Pill/POP	9	18	178	176	381
Implant	27	43	60	79	209
IUD	79	103	129	157	468
Female sterilization	180	200	222	245	847
Male sterilization	-	0	1	1	2
Total	710	763	820	878	3,171

Infant Mortality Avoided

A total of 54,760 (scenario 1) and 58,398 (scenario 2) infant deaths are estimated to have been averted during 2019-2022 with the use of the modern FP methods listed in tables 51 and 52. The number of infant deaths averted is calculated based on an infant mortality rate of 21 per 1,000 births² according to the following equation. Tables 51 and 52 show the details per year and by type of method/product for scenarios 1 and 2.

$$\text{Number of infant deaths averted} = \text{Number of unintended births averted} \times \text{infant mortality rate}/1,000$$

Table 51. Number of infant deaths averted—scenario 1

Method	2019	2020	2021	2022	Total
Male condom	350	315	278	237	1,180
DPMA injection	1,867	1,753	1,629	1,492	6,741
Pill/COC	5,139	4,889	2,036	1,984	14,048
Pill/POP	159	312	3,053	2,976	6,500
Implant	473	742	1,030	1,338	3,583
IUD	1,400	1,790	2,206	2,650	8,046
Female sterilization	3,200	3,493	3,803	4,129	14,625
Male sterilization	-	6	12	19	37
Total	12,588	13,300	14,047	14,825	54,760

Table 52. Number of infant mortality averted—scenario 2

Method	2019	2020	2021	2022	Total
Male condom	364	333	298	258	1,253
DPMA injection	1,939	1,853	1,750	1,628	7,170
Pill/COC	5,338	5,167	2,187	2,165	14,857
Pill/POP	165	330	3,280	3,247	7,022
Implant	491	784	1,107	1,461	3,843
IUD	1,454	1,892	2,370	2,891	8,607
Female sterilization	3,323	3,692	4,086	4,506	15,607
Male sterilization	-	6	13	21	40
Total	13,074	14,057	15,091	16,177	58,399

Child Mortality Avoided

A total of 70,405 (scenario 1) and 75,084 (scenario 2) child deaths are estimated to have been averted during 2019-2022 with the use of the modern FP methods listed in tables 53 and 54. The number of child deaths averted is calculated based on a child mortality rate of 27 per 1,000 births (from NDHS) according to the following equation:

$$\text{Child mortality avoided} = \text{Number of unintended births averted} \times \text{child mortality rate}/1,000$$

Tables 53 and 54 show the details per year and by type of method/product.

Table 53. Number of child mortality averted—scenario 1

Method	2019	2020	2021	2022	Total
Male condom	450	406	357	304	1,517
DPMA injection	2,400	2,254	2,094	1,918	8,666
Pill/COC	6,607	6,286	2,617	2,551	18,061
Pill/POP	204	401	3,926	3,826	8,357
Implant	608	954	1,325	1,721	4,608
IUD	1,800	2,302	2,836	3,407	10,345
Female sterilization	4,114	4,491	4,889	5,309	18,803
Male sterilization	-	8	16	24	48
Total	16,183	17,102	18,060	19,060	70,405

Table 54. Number of child mortality averted—scenario 2

Method	2019	2020	2021	2022	Total
Male condom	467	429	384	332	1,612
DPMA injection	2,492	2,382	2,250	2,093	9,217
Pill/COC	6,863	6,643	2,812	2,783	19,101
Pill/POP	212	424	4,218	4,175	9,029
Implant	631	1,008	1,423	1,878	4,940
IUD	1,870	2,432	3,047	3,717	11,066
Female sterilization	4,273	4,746	5,253	5,794	20,066
Male sterilization	-	8	17	27	52
Total	16,808	18,072	19,404	20,799	75,083

CHALLENGES

Major challenges that have been highlighted during the quantification exercises include:

- Contract terms, such as delivery dates, that are not strictly implemented and that have an effect on the accuracy of the quantification output
- Delivery dates of some products are not clearly identified
- Long lead times for planning, procurement, delivery, and testing processes, which will contribute to a higher DSL and higher supply investment for DOH
- Condom stock information for HIV is not being reported from health facilities to the central level
- Inadequate and nonstandard reporting systems, including inconsistent data point description, e.g., lack of dates of reports, missing expiry dates, pack sizes or unit of measure, and incomplete product description
- Data quality issues such as inaccuracy, poor reporting rate, and incompleteness
- Lack of consumption data for CycleBeads at health facilities
- Lack of provincial/city level procurement and stock data
- Current implementation of program targets are far from annual targets, which affects forecast and procurement (e.g., CPR annual increase 1% vs performance of 0.35%) and may contribute to overstocking and expiry of commodities
- Limited quantification capacity and coordination

RECOMMENDATIONS

To address the above challenges identified during the quantification exercise, the following recommendations are drawn:

- Ensure contracts are strictly implemented
 - Institutionalize contract management and suppliers' performance evaluation system
 - Conduct suppliers' prequalification and long-term framework agreement
- Optimize in-house procurement and supply chain process calendars to reduce lead time
- Standardize and implement procurement (shipment) data reporting system from one source, preferably from PS with full description:
 - Full product name, unit of measure, price, quantity, expected delivery date with optional expiry date, and supplier's name
- Standardize and implement Logistics Management Information Systems and track logistics data at all levels, including procurement data at the LGU level
- Continuously review program target coverages and adjust procurement quantities accordingly (conduct regular supply planning)
- Build institutional and human resource capacity and institutionalize quantification systems for all health commodities
- Conduct routine data analysis, quality audit, and data dissemination
- Include discontinuation and failure rate into NDHS and other surveys