REPORT

SEXUAL AND REPRODUCTIVE HEALTH COMMODITIES IN RWANDA: AVAILABILITY, STOCKOUTS AND AFFORDABILITY

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Solutions for Supporting Healthy Adolescents

REPORT

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HEALTH ACTION INTERNATIONAL

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1. EXECUTIVE SUMMARY

Access to medicines and medical commodities forms a crucial building block of health systems, and sexual and reproductive health (SRH) is a field of care which lies at the basis of healthy societies. Unfortunately, Rwanda experiences challenges with the adequate provision of SRH services and commodities evidenced by a maternal mortality rate of 248 per 100,000 live births. Therefore, this study was conducted to measure the availability, stockouts and affordability of 49 SRH commodities, which are included on the World Health Organization's (WHO) Model List of Essential Medicines, in 117 health facilities from the public, private and faith-based sectors across Gasabo, Gatsibo, Nyagatare and Nyarungenge districts. The findings of this study can be used to develop evidence-based policies to improve the SRH of women and adolescents.

Availability

Availability of SRH commodities was sub-optimal. In general, the public sector performed better than the private sector. Only few commodities across the sectors met the WHO target of 80% availability. For the public sector, 15 of the 49 surveyed commodities were available in at least 80% of health facilities. For the private sector, only two commodities were available in at least 80% of health facilities. For the faith-based sector, none of the facilities stocked family planning commodities, but 15 other SRH commodities reached the 80% availability target. For a detailed summary of availability per sector, please consult pages 7-9 of the report.

Stockouts

We were able to obtain stock information in 80% of all health facilities. Stockouts were relatively common across the sectors. Only very few commodities that were commonly found in the health facilities had not experienced a stockout in any of the health facilities. For a detailed summary of stockouts per sector, please consult pages 7-9 of the report.

Affordability

Due to Rwanda's community-based health insurance (CBI) scheme, affordability of SRH commodities is generally high. For the minority of people who are not on CBI, when taking the benchmark of one day of income of someone on the international poverty line, the affordability of commodities could be problematic especially in the private sector. In the public sector, only the antihypertensive, methyldopa was considered unaffordable for an uninsured person on the international poverty line.

Recommendations

This study has shown that access to SRH commodities should be improved in the surveyed districts in Rwanda. The following recommendations are made to the government to help improve access:

1. Strengthen supply chain management, including standard operation procedures and stock management, at both national and local levels.
2. Increase the availability of specific SRH commodities, including the emergency contraceptives and misoprostol.
3. Increase government investment in SRH.
4. Promote the engagement of faith-based health facilities in SRH commodities.
5. Monitor and evaluate progress in improving the availability, affordability, and use of SRH commodities.
6. Foster partnerships between public, private and faith-based sector actors.

2. BACKGROUND

Access to medicines and medical commodities forms a crucial building block of health systems. Without proper access to quality assured and safe medicines, people are not able to live in optimal health. Sexual and reproductive health (SRH) is a field of care that lies at the basis of healthy societies. The World Health Organisation (WHO) Model List of Essential Medicines (EML) includes medicines and commodities which are essential to the provision of quality SRH care (WHO, 2021).

When the health system is well equipped to provide SRH commodities and services, it means people are enabled to decide when and if they want to become pregnant, to have a healthy pregnancy and safe childbirth, and to protect themselves against sexually transmitted infections (STI), including HIV/AIDS. They will also receive timely and proper treatment if they do contract HIV/AIDS or an STI.

Unfortunately, Rwanda experiences challenges with the adequate provision of SRH services and commodities. The maternal mortality rate is estimated to be 248 per 100,000 live births, while the prevalence of modern contraceptive use is about 48% and 39% among married and unmarried women aged 15-49 years, respectively. Thirty-six percent of births in the last five years were either unwanted or occurred earlier than the woman would have liked. Among married women aged 15-49 years, there is an unmet need for family planning of 19%. Among unmarried women the unmet need is 13%.[1]

This research was conducted to study the availability, affordability and stockouts of 50 SRH commodities used for **family planning**, **maternal healthcare**, **treatment of STIs**, **treatment of HIV/AIDS**, in addition to several **test kits** and **menstrual products**, in Gasabo, Gatsibo, Nyagatare and Nyarungenge districts in Rwanda. This research is essential as it creates a clear overview of the availability and affordability of a comprehensive package of essential SRH commodities, which will contribute to the development of evidence-based policies to improve the SRH of women and adolescents.

3. RESEARCH METHODOLOGY

This study was conducted by Rwanda NGOs Forum on HIV/AIDS & Health Promotion (RNGOF) and Health Action International (HAI) as part of the Solutions for Supporting Healthy Adolescents and Rights Protection (SHARP) programme, funded by the European Union. The research was approved by The Rwanda National Ethics Committee (Ref: 465/RNEC/2022), and supported by the Rwanda Ministry of Health.

This study used an adapted version of the HAI/WHO Methodology for measuring price, availability, affordability and price components of essential medicines. Teams of data collectors visited 117 health facilities from the public, private and faith-based sectors to survey the availability, stockouts and patient prices of 49 medicines, test kits, and menstrual hygiene products. An overview of all surveyed commodities can be found in Annex 1.

1. Rwanda Demographic and Health Survey 2014-15. Kigali: National Institute of Statistics of Rwanda; 2016. National Institute of Statistics of Rwanda, Ministry of Finance and Economic Planning, Ministry of Health, The DHS Program.

Public Sector: Facilities that are run and funded by the national government. Medicines in this sector are often low cost or free of charge.

Private Sector: Licensed retail pharmacies, private healthcare centres and private hospitals. The private sector does not include unlicensed drug stores, drug sellers in the informal sector, or health facilities operated by private companies, such as mining companies.

Faith-based Sector: Facilities that are run by religious organisations, such as church missions.

The study sample included health facilities from urban as well as rural areas, ranging from pharmacies to teaching hospitals. Availability of most commodities was measured from health post/clinic level and up in the public sector, and from pharmacy level and up in the private and faith-based sector. Only the levels at which a commodity is supposed to be available according to the Rwanda Essential Medicines List[2] were taken up in the availability percentages. The WHO target of 80% availability of essential medicines was use as comparative value. In addition, stock cards or stock databases were reviewed to record information on stockouts of the surveyed products over a 12-month period prior to data collection. Finally, price information, in combination with the international poverty line of 2.15 USD per day, was used to calculate affordability of commodities. If a commodity cost more than a day of income to buy one treatment regimen of the commodity for someone on the international poverty line, it was considered unaffordable. Table 1 provides an overview of the study sample, Table 2 provides an overview of the health system level of the facilities sampled.

Table 1. Study sample.

	Public	Private	Faith-based	Total
Urban	18	25	2	**45**
Rural	40	29	3	**72**
Total	**58**	**54**	**5**	**117**

Table 2. Health facility level.

Level	Number of HF
Health post (HP)	15
Pharmacy (P)	34
Health Centre (HC)	45
Clinic (C)	15
District hospital (DH)	7
General hospital (GH)	1

2. National List of Essential Medicines for Adults. Rwanda 6th Edition, 2015.

4. SUMMARY OF FINDINGS

PUBLIC SECTOR

Overall, the public sector had the highest commodity availability of 53% when comparing the sectors. Stock information could be obtained in 95% of public facilities.

Family Planning

In the public sector, family planning commodities with a high availability were: the injectable contraceptive medroxyprogesterone acetate and the etonogestrel implant, both available at 88% of health facilities; the copper containing intrauterine device (IUD) and male condoms, both available at 85% of health facilities, and the birth control pills ethinylestradiol + levonorgestrel and levonorgestrel (30 mcg) which both had 79% availability. Family planning commodities with a low availability in the public sector were the birth control pill ethinylestradiol + norethisterone and the injectable contraceptive norethisterone enanthate at 0% of health facilities; female condoms at 17%; the levonorgestrel releasing IUD (23%); and the emergency contraceptive levonorgestrel (1.5 mg) at 46%.
Stockouts were particularly common for female condoms at 36% of health facilities, for on average 76 days; for the levonorgestrel-releasing IUD at 15% of facilities for on average 44 days, and for the levonorgestrel (1.5 mg) emergency contraceptive at 15% of facilities for an average of 15 days. Commodities that had stockouts which lasted remarkably longer were for the etonogestrel implant, which lasted on average 65 days, and the ethinylestradiol + levonorgestrel birth control pill, unavailable for an average 37 days.

Maternal Health

In the public sector, maternal health commodities with a high availability were: magnesium sulphate (85%), calcium gluconate (83%) and oxytocin (79%). Commodities with a very low availability were (methyl)ergometrine at 0% of health facilities and tranexamic acid at 6%.
Stockouts of maternal health commodities were for a relatively long period. For example, magnesium sulphate, which had experienced a stockout at 13% of health facilities, was on average unavailable for 103 days. Oxytocin had a stockout at 18% of health facilities for an average of 26 days, while dexamethasone had a stockout at 14% of health facilities, also for an average of 26 days. Other commodities which were relatively commonly out of stock were ferrous salt and folic acid tablets (see Table 8).

STI Treatment

Amoxicillin (91%), metronidazole (88%) and benzathine benzylpenicillin (81%) had a high availability in the public sector, while azithromycin (17%), acyclovir (23%) and clotrimazole (42%) had a low availability.
Stockouts of clotrimazole (at 27% of facilities), ceftriaxone (26%) and doxycycline (21%) were relatively common. The average number of stockout days was longest for clotrimazole (60 days), benzathine benzylpenicillin (33 days) and doxycycline (32 days).

HIV/AIDS

Five HIV/AIDS commodities were available at 80% or more of health facilities: dolutegravir + lamivudine + tenofovir (94%), tenofovir + lamivudine (88%), atazanavir/ritonavir (88%), dolutegravir (50mg) (90%) and paediatric dolutegravir (10mg) (81%). Commodities with the lowest availabilities were: emtricitabine + tenofovir (6%), darunavir/ritonavir (10%) and raltegravir (13%).

Emtricitabine + tenofovir had experienced a stockout at 70% of public health facilities, with stockouts lasting on average 36 days. Lopinavir/ritonavir experienced stockout at 17% of facilities, which lasted on average 50 days. All other HIV/AIDs commodities, except for raltegravir, experienced some stockouts (see Table 14).

PRIVATE SECTOR

The private sector overall had a much lower availability compared to the public sector (26% versus 53%). Stock information could be obtained in 63% of private facilities.

Family Planning

In the private sector, only vasectomy services had an availability of over 80%. However, this service is only available at District Hospital level and higher. All other family planning commodities had an availability below 80%. Particularly low were: ethinylestradiol + norethisterone (0%), norethisterone enanthate (10%), female condoms (6%), levonorgestrel-releasing IUD (8%), copper-containing IUD (14%) and etonogestrel implants (16%).

In the private sector, a large number of health facilities did not have stock cards for several family planning commodities. Commodities which had commonly experienced stockouts were the ethinylestradiol + levonorgestrel birth control pill at 19% of health facilities, lasting on average for 28 days, the levonorgestrel (30mcg) birth control pill at 27% of health facilities, lasting on average 37 days, and the medroxyprogesterone acetate injectable contraceptive which had a stockout at 30% of health facilities, lasting on average nine days.

Maternal Health

All maternal health commodities had a low availability in the private sector. None of the commodities had an availability of over 41%. Particularly low were mifepristone- misoprostol (0%), (methyl)ergometrine (2%), magnesium sulphate (8%) and oxytocin (10%).

Again, very few facilities had stock cards for maternal health commodities in the private sector, but the commodities that most often seemed to experience stockouts were misoprostol at 29% of facilities for an average of 27 days and magnesium sulphate at 67% of facilities for on average 17 days.

STI Treatment

STI commodities in general had a better availability compared to maternal health commodities in the public sector, with most commodities being available at about 60 to 75% of health facilities (including metronidazole, clotrimazole, amoxicillin, ceftriaxone and doxycycline). Exceptions were benzathine benzylpenicillin (49%), acyclovir (35%), and azithromycin (19%).

Higher percentages of private health facilities had stock cards for STI commodities, compared to family planning and maternal health commodities. All STI commodities were only rarely stocked out in the private sector (see Table 11).

HIV/AIDS

In contrast to the public sector, HIV/AIDS commodities were rarely available in the private sector, with highest availability percentages standing at only 10%, for dolutegravir + lamivudine + tenofovir, tenofovir + lamivudine (PrEP) as well as atazanavir/ritonavir. All other HIV/AIDS commodities, including emtricitabine + tenofovir, darunavir/ritonavir, lopinavir/ritonavir, raltegravir, dolutegravir (50mg), paediatric dolutegravir (10mg), efavirenz and nevirapine were available at less than 10% of private health facilities.

Barely any private health facilities had stock cards for HIV/AIDS commodities, therefore we cannot provide reliable estimates for stockouts of these commodities in the private sector.

FAITH-BASED SECTOR

Only five health facilities were surveyed in the faith-based sector due to the low number of these type of facilities present in the surveyed districts. Results from the faith-based sector should therefore be interpreted with caution. Overall, the faith-based sector (40%) had better availability compared to the private sector facilities (26%), but fared worse compared to the public sector (53%). Stock information could be obtained in all five faith-based facilities. A noteworthy finding is that none of the faith-based facilities had any family planning commodities available, perhaps indicating that the religious conviction hampers the provision of commodities for family planning.

Maternal Health

The faith-based sector did have commodities for maternal health. In particular, oxytocin (80%), magnesium sulphate (80%) and calcium gluconate (100%) had a high availability. Tranexamic acid, (methyl)ergometrine and the mifepristone – misoprostol combination were available at none of the faith-based facilities. Commodities that had experienced long stockouts were the ferrous salt and folic acid combination (on average 74 days in two health facilities) and the supplement with just ferrous salt (186 days in one health facility).

STI Treatment

Specific STI treatment commodities had an excellent availability in the faith-based sector: metronidazole, benzathine benzylpenicillin, amoxicillin and ceftriaxone were available at all faith-based facilities (100%). Azithromycin was available at none of the faith-based facilities, while clotrimazole had an availability of only 40%. STI commodities were rarely out of stock in the faith-based sector (see Table 11).

Many HIV/AIDS commodities also had a high availability in the faith-based sector. Dolutegravir + lamivudine + tenofovir; tenofovir + lamivudine (PrEP); atazanavir/ritonavir, lopinavir/ritonavir; dolutegravir (50mg); paediatric dolutegravir (10mg) and nevirapine all had an availability of at least 80%. Commodities with a low availability were: emtricitabine + tenofovir (0%), darunavir/ritonavir (20%) and raltegravir (20%). Stockouts seemed to occur rarely, only nevirapine had been stocked out at one faith-based facility for 118 days.

5. FINDINGS

Page 10 of the report presents the findings on the availability of all 49 surveyed commodities combined and compares the different sectors. Pages 10-22 provide the availability and affordability for individual commodities, per commodity group. A detailed overview of average availability, stockouts, and affordability of all surveyed commodities, across sector and location, can be found in Annex 2.

Rwanda has an extensive national health insurance scheme. Especially in the public sector, a large part of the health facilities' catchment population was covered by community-based health insurance (CBI) (See table 3). This implies that people on the scheme generally only need to pay a 200 RWF service fee per visit, or even less depending on their income and therefore do not pay separate out of pocket costs for medicines. The affordability estimates given in this paper, are for the population which does not have health insurance.

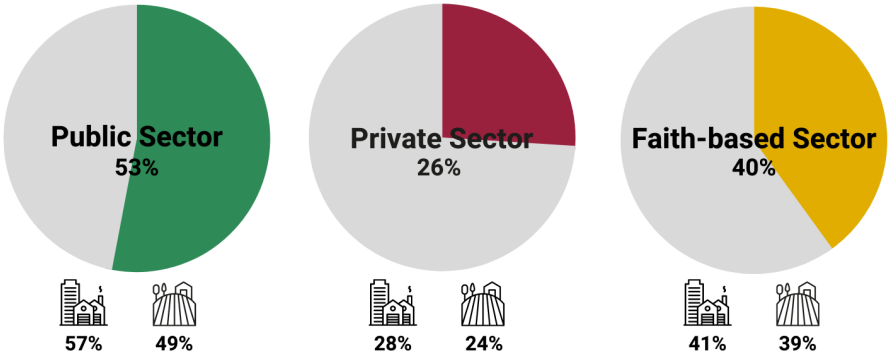
Table 3. Percentage of sampled health facilities catchment population covered by health insurance.

	Public		Private		Faith-based	
	CBI %	Other Insurance %	CBI %	Other insurance %	CBI %	Other inurance %
Average	90	12	21	42	89	7
Minimum value	0	0.05	0	1	87	2
Maximum value	99	99	100	80	90	10

SRH COMMODITY AVAILABILITY AT A GLANCE

In Rwanda, the overall availability of 49 commodities[3] across the sectors was 38.9%. The faith-based sector had an overall availability of 40% (see Figure 1). The public sector had a better availability than the private sector (53% vs 26%). In each of the sectors the availability was higher in urban compared to rural facilities, although the differences were minimal.

Figure 1. Overall availability comparing the public, private and faith-based sectors.



FAMILY PLANNING

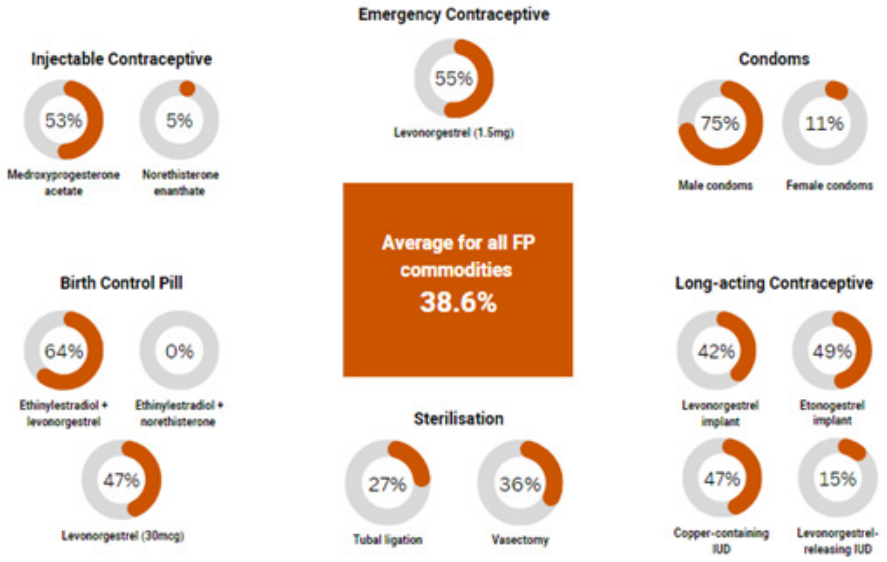
Family planning (FP) commodities are products which allow individuals to plan their pregnancy. To have the choice and freedom to decide on pregnancy promotes several human rights and advances health outcomes (Cook, 1983; WHO, 2014). FP commodities have varying regimens and lengths of effectiveness: e.g., the birth control pill needs to be taken daily, injectables need one injection every three months, while implants and IUDs are effective for a long time and can stay in place for about five years. Condoms are the only contraceptives which protect against both pregnancy and STIs at the same time (WHO, 2020). Vasectomy and tubal ligation are services[4] that allow people the decision to not have any (more) children.

Availability

Overall, none of the FP commodities had an availability of 80% or higher in Rwanda, which is the target as recommended by the WHO (see Figure 2). Male condoms and the ethinylestradiol + levonorgestrel birth control pill had the highest availability at 75% and 64% respectively. Ten of the 14 FP commodities had an availability of less than 50%, including the levonorgestrel releasing IUD (15%) and the norethisterone enanthate injectable contraceptive (5%) (see Figure 2).

3. Sanitary pads were not included in this overall percentage as they are often found in other locations such as markets and stores, therefore the availability percentage is not representative of availability in the districts.
4. Although vasectomy and tubal ligitation are in principle reversible, it is not the intention, and there's no guarantee that it will be successful.

Figure 2. Availability of FP commodities



In the public sector, four commodities had an 80% or higher availability, including the birth control injectable medroxyprogesterone acetate, the etonogestrel implant, the copper IUD and male condoms (see Table 4). None of the health facilities across the sectors had ethinylestradiol + norethisterone available, and none of the public sector facilities had the norethisterone enanthate injectable. Female condoms (17%) and the levonorgestrel releasing IUD (23%) also had a very low availability in the public sector.

None of the commodities had an 80% or more availability in the private sector. The highest availability was found for male condoms (72%), followed by the emergency contraceptive levonorgestrel 1.5mg (69%). Nine of 14 FP commodities had an availability of less than 25% (see Table 4). The faith-based sector did not have any of the family planning commodities available at any of the five surveyed facilities.

Table 4. Availability of family planning commodities, per sector.

	Min. level available	Public (%)	Private (%)	Faith-based* (%)
Ethinylestradiol + levonorgestrel	HP	79	54	0
Ethinylestradiol + norethisterone	HP	0	0	0
Levonorgestrel (30 mcg)	HP	79	17	0
Levonorgestrel (1.5 mg)	HC	46	69	0
Medroxyprogesterone acetate	HC	**88**	25	0
Norethisterone enanthate	HC	0	10	0
Implants: levonorgestrel	HC	69	20	0
Implants: etonogestrel	HC	**88**	16	0
Copper-containing IUD	HC	**85**	14	0
Levonorgestrel-releasing IUD	HC	23	8	0
Male condoms	HP	**85**	72	0
Female condoms	HP	17	6	0
Vasectomy services	DH	33	**100**	0
Tubal ligation service	DH	50	0	0

*Only 5 health facilities were surveyed in the faith-based sector due to the low number of these type of facilities in the surveyed districts. Results from the faith-based sector should be interpreted with caution.

Stockouts

A stockout is defined as the number of days during a 12-month period that a commodity that is normally available and stocked, was not available at the facility. 80% of all surveyed facilities recorded stock information. Broken down into the surveyed sectors, in 55 (95%) of public, 34 (63%) of private, and 5 (100%) of faith-based facilities we were able to obtain stock information. Stockouts of FP commodities were relatively common (see Table 5).
In the public sector, for all commodities except norethisterone enanthate, several health facilities had experienced a stockout. However, for norethisterone enanthate only two public health facilities had stock cards, indicating that most never stock this commodity. For most of the commodities, between 3% and 15% of public health facilities had experienced a stockout. The notable exception is female condoms, for which a considerably higher number of 36% of health facilities had had a stockout, and the stockouts in addition, had lasted long—on average 76 days over a 12 month period. Other commodities for which stockouts had lasted on average more than one month were ethinylestradiol + levonorgestrel, levonorgestrel (30 mcg), etonogestrel implant and the levonorgestrel-releasing IUD.

In the private sector, the ethinylestradiol + levonorgestrel birth control pill, levonorgestrel 30mcg birth control pill and medroxyprogesterone acetate injectable contraceptive had experienced a stockout at a considerable number of health facilities (19-30%), and stockouts of the birth control pills also had lasted long on average (about one month). Six of the 11 family planning commodities were never stocked out in any of the private facilities. In the faith-based sector, none of the family planning commodities had stock cards, as these products were never stocked in these facilities.

Table 5. Stockouts of FP commodities at health facilities, and average number of stockout days per stockout, per sector.

	Public			Private		
	Facilities with stock card (#)	Facilities with stockout (%)	Average # of stockout days	Facilities with stock card (#)	Facilities with stockout (%)	Average # of stockout days
Ethinylestradiol + levonorgestrel	43	9	37	21	19	28
Ethinylestradiol + norethisterone	0	NA	NA	0	NA	NA
Levonorgestrel (30 mcg)	45	7	32	11	27	37
Levonorgestrel (1.5 mg)	27	15	15	24	4	85
Medroxyprogesterone acetate	46	7	3	10	30	9
Norethisterone enanthate	2	0	NA	2	0	NA
Implants: levonorgestrel	33	12	21	6	0	NA
Implants: etonogestrel	41	5	65	6	0	NA
Copper-containing IUD	40	3	2	3	0	NA
Levonorgestrel-releasing IUD	13	15	44	1	0	NA
Male condoms	47	6	24	26	8	9
Female condoms	14	36	76	3	0	NA

Affordability

Even for people who are not subscribed to health insurance, in the public sector all family planning commodities can be considered affordable, as one treatment regimen of these commodities cost less of one day income for someone on the international poverty line. However, in the private sector, notably the levonorgestrel releasing IUD is unaffordable as it costs 39 days of income for someone on the international poverty line. Other unaffordable commodities in the private sector were the emergency contraceptive levonorgestrel 1.5 mg and the copper containing IUD (see Table 6).

Table 6. Affordability of FP commodities.

	Public	Private
Ethinylestradiol + levonorgestrel	0.01	0.44
Ethinylestradiol + norethisterone	N/A	N/A
Levonorgestrel (30 mcg)	0.01	0.36
Levonorgestrel (1.5 mg)	0.34	2.5
Medroxyprogesterone acetate	0.01	0.21
Norethisterone enanthate	N/A	0.74
Implants: levonorgestrel	0.03	0.38
Implants: etonogestrel	0.03	0.31
Copper-containing IUD	0	1.2
Levonorgestrel-releasing IUD	0	39.1
Male condoms	0	0.17
Female condoms	0	0.56

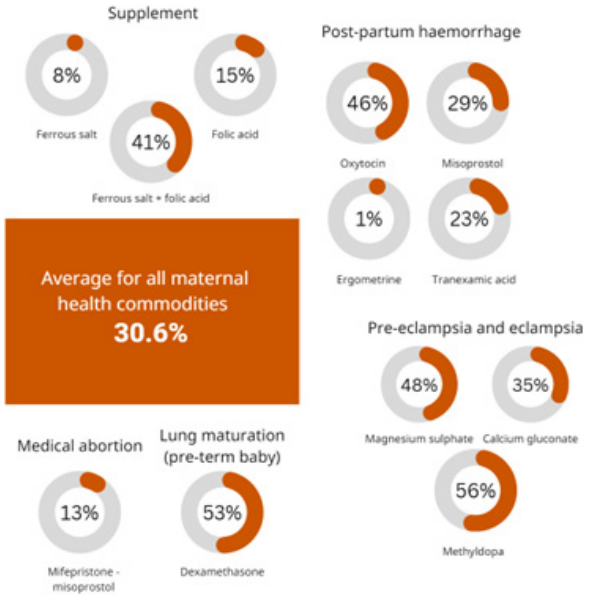
MATERNAL HEALTH

Maternal health commodities represent a diverse group of products which are used to treat health conditions that affect women during pregnancy, childbearing, and postnatally. In many contexts, during this period women are at an increased risk of negative health outcomes that can be avoided with the right treatment and care (WHO, n.d.). Under maternal health commodities fall diverse medicines with different uses; examples are supplements which are used to prevent iron and folic acid deficiencies, conditions which are associated with adverse pregnancy outcomes to the mother and foetus (WHO, 2012); medicines such as oxytocin and misoprostol, used to prevent post-partum haemorrhage, the leading cause of maternal deaths in the Sub-Saharan Africa region (Say, 2014); and medicines to treat pregnancy-related hypertension, also called (pre)-eclampsia, including methyldopa and magnesium sulphate.

Availability

The average availability of maternal health commodities was 30.6% (see Figure 3). None of the commodities had an 80% or higher availability, and only two commodities, dexamethasone and methyldopa had an availability of 50% or higher. Interestingly, ergometrine, which is listed on Rwanda's EML, only had a 1% availability, while tranexamic acid, the only surveyed maternal health commodity which is not on the EML, had a 23% availability.

Figure 3. Availability of maternal health commodities.



When looking at the availability per sector, some differences in availability are apparent (see Table 7). Availability of maternal health commodities was especially low in the private sector: only tranexamic acid, dexamethasone and methyldopa were relatively commonly available, all at 41% of private health facilities. Oxytocin, magnesium sulphate and calcium gluconate all had a high availability in faith-based and public facilities of around 80%, but a much lower availability in private facilities at 8-13% of health facilities (see Table 7).

Table 7. Availability of maternal health commodities, per sector.

	Min. level available	Public (%)	Private (%)	Faith-based* (%)
Oxytocin	HC	79	10	**80**
Misoprostol	HC	42	14	60
Tranexamic acid	NA	6	41	0
(methyl)ergometrine	HC	0	2	0
Mifepristone - misoprostol	DH	50	0	0
Magnesium sulphate	HC	**85**	8	**80**
Calcium gluconate	DH	**83**	13	**100**
Ferrous salt	HP	7	7	20
Folic acid tablet	HP	14	19	0
Ferrous salt and folic acid	HP	48	33	40
Dexamethasone	HC	65	41	60
Methyldopa	HC	73	41	40

Stockouts

Stockouts were relatively common in the public sector (See Table 8). Tranexamic acid[5], ferrous salt, and folic acid tablets had experienced a stockout at about half of surveyed facilities, and oxytocin, misoprostol and methyldopa had experienced a stockout at about a fifth of health facilities. Regarding the length of a stockout, magnesium sulphate and the ferrous salt + folic acid combination pill had experienced particularly lengthy stockouts, which lasted over three months.

In the private sector, stockouts were also common. Magnesium sulphate, notably, had experienced a stockout at 67% of health facilities which had lasted on average 17 days. The faith-based sector only experienced lengthy stockouts for ferrous salt and the ferrous salt + folic acid combination pill at one and two different faith-based facilities respectively.

Table 8. Stockouts of maternal health commodities at health facilities, and average number of stockout days per stockout, per sector.

	Public			Private			Faith-based*		
	HFs with stock card (#)	HFs with stock-out (%)	Average # of stockout days	HFs with stock card (#)	HFs with stock-out (%)	Average # of stockout days	Facilities with stock card (#)	Facilities with stockout (%)	Average # of stockout days
Oxytocin	38	18	26	2	0	NA	4	0	NA
Misoprostol	26	23	9	7	29	27	3	0	NA
Tranexamic acid	4	50	13	12	0	NA	0	NA	NA
(methyl) ergometrine	0	NA	NA	1	0	NA	0	NA	NA
Mifepristone - misoprostol	2	0	NA	0	NA	NA	1	0	NA
Magnesium sulphate	40	13	103	3	67	17	4	0	NA
Calcium gluconate	33	6	9	6	33	3	4	0	NA
Ferrous salt	9	56	29	3	33	25	2	50	186
Folic acid tablet	14	50	76	6	0	NA	0	NA	NA
Ferrous salt + folic acid	28	11	90	13	8	3	4	50	74
Dexamethasone	36	14	26	14	21	17	4	25	1
Methyldopa	38	16	10	12	8	10	3	33	1

Affordability

Table 9 shows that all commodities in the public sector are considered affordable for people who do not have health insurance, as the commodities cost less than a day of income for someone on the international poverty line. The notable exception is methyldopa, used to treat (pre)eclampsia, which cost 3.4 days of income. In the private sector, misoprostol, magnesium sulphate and methyldopa were unaffordable for the uninsured population. While in the faith-based sector, similarly, magnesium sulphate and methyldopa were unaffordable (see Table 9).

5. However, only four public health facilities had stock cards for tranexamic acid, which, combined with the low availability found, indicates that this commodity is generally not stocked at Rwandan public health facilities.

Table 9. Affordability of maternal health commodities.

	Public	Private	Faith-based*
Oxytocin (10 IU in 1ml)	0.07	0.24	0
Misoprostol (200mcg)	0.19	1.3	0.52
Carbetocin (100mcg/ml)	NA	NA	NA
Tranexamic acid (100mg/ml in 10ml)	NA	NA	NA
(methyl)ergometrine (200mcg in 1ml)	NA	NA	NA
Mifepristone - misoprostol (200mg + 200mcg)	0	NA	NA
Magnesium sulphate (0.5mg/ml)	0.48	4.3	1.9
Calcium gluconate (100mg/ml in 10ml)	0.11	0.40	0.47
Ferrous salt (200mg)	0.03	0.38	0
Folic acid (5mg)	0.04	0.59	NA
Ferrous salt and folic acid (60mg + 400mcg)	0.03	0.85	0
Dexamethasone (4mg/ml)	0.13	0.41	0.21
Methyldopa (250mg)	3.4	7.5	6.5

*Only 5 health facilities were surveyed in the faith-based sector due to the low number of these type of facilities in the surveyed districts. Results from the faith-based sector should be interpreted with caution.

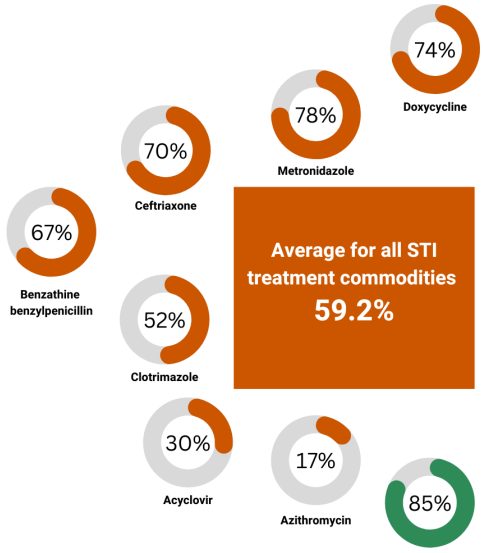
STI TREATMENT

Commodities for the treatment of common STIs represent a basket of medicines, such as Chlamydia, Gonorrhoea and Syphilis. Since many STI's are caused by bacteria, the majority of surveyed medicines are antibiotics (WHO, 2022). Often, multiple types of antibiotics can be used to treat a single STI. In addition, one antiviral and one antifungal medicine were surveyed, which can be used to treat genital herpes and Candida albicans (yeast infection), respectively.

Availability

Overall, only one of the nine surveyed STI treatment commodities, amoxicillin, had an 80% or higher availability (see Figure 4). However, besides amoxicillin, four other STI treatments: doxycycline, metronidazole, ceftriaxone and benzathine benzylpenicillin, were also relatively commonly available (see Figure 4). Azithromycin was only available at 17% of facilities.

Figure 4. Availability of STI treatment commodities.



Health facilities across the three sectors were performing relatively well on STI treatment availability, even though many commodities did not make the 80% availability target of the WHO. In the public and private sector, only three out of eight commodities, including acyclovir, azithromycin had a less than 50% availability, and in the faith-based sector only two (azithromycin and clotrimazole) (see Table 10). Metronidazole, benzathine benzylpenicillin and amoxicillin had a high availability in the public and faith-based sector at over 80%, and a relatively high availability in the private sector (49-76%). Azithromycin had a low availability across sectors (0-19%) (see Table 10).

Table 10. Availability of STI treatment commodities, per sector.

	Min. level available	Public (%)	Private (%)	Faith-based* (%)
Metronidazole	HC	**88**	67	**100**
Clotrimazole	HC	42	63	40
Benzathine benzylpenicillin	HC	**81**	49	**100**
Amoxicillin	HP	**91**	76	**100**
Acyclovir	HC	23	35	60
Azithromycin	HC	17	19	0
Ceftriaxone	HC	67	69	**100**
Doxycycline	HP	76	74	60

*Only 5 health facilities were surveyed in the faith-based sector due to the low number of these type of facilities in the surveyed districts. Results from the faith-based sector should be interpreted with caution.

Stockouts

Stockouts of the commodities for STI treatment occurred occasionally in the public sector and were rare across the private and faith-based sectors (see Table 11). In the public sector, clotrimazole in particular was commonly stocked out (27% of facilities had experienced a stockout), with stockouts lasting on average two months. In addition, doxycycline had had a stockout at a fifth of health facilities, which had lasted on average a full month. On the rare occasion that an STI commodity was stocked out in the private sector, stockouts generally lasted only a few days (See Table 11).

Table 11. Stockouts of STI treatment commodities at health facilities, and average number of stockout days per stockout, per sector.

	Public			Private			Faith-based*		
	HFs with stock card (#)	HFs with stock-out (%)	Average # of stockout days	HFs with stock card (#)	HFs with stock-out (%)	Average # of stockout days	Facilities with stock card (#)	Facilities with stockout (%)	Average # of stockout days
Metronidazole	49	12	22	27	7	2	5	0	NA
Clotrimazole	22	27	60	22	9	5	2	0	NA
Benzathine benzylpenicillin	37	3	33	15	6	9	5	0	NA
Amoxicillin	49	6	23	26	0	NA	5	0	NA
Acyclovir	12	8	31	12	8	3	3	0	NA
Azithromycin	3	0	NA	20	5	1	0	NA	NA
Ceftriaxone	19	26	19	19	0	NA	3	0	NA
Doxycycline	43	21	32	27	0	NA	4	25	92

*Only 5 health facilities were surveyed in the faith-based sector due to the low number of these type of facilities in the surveyed districts. Results from the faith-based sector should be interpreted with caution.

Affordability

Regarding the affordability of STI treatment commodities, Table 12 shows that all commodities in the public sector and faith-based sector are considered affordable for people who do not have health insurance, as the commodities cost less than a day of income for someone on the international poverty line. In the private sector, only acyclovir is unaffordable as it costs 2.4 days of income for someone on the international poverty line.

Table 12. Affordability of STI treatment commodities.

	Public	Private	Faith-based*
Metronidazole (250mg)	0.09	0.32	0.10
Clotrimazole (500mg)	0.27	0.51	NA
Benzathine benzylpenicillin (2.4 mil IU)	0.10	0.28	0.12
Amoxicillin (250mg)	0.33	0.57	0.33
Acyclovir (200mg)	0	2.4	NA
Azithromycin (500mg)	0.42	0.62	NA
Ceftriaxone (1g in vial)	0.15	0.30	0.11
Doxycycline (100mg)	0.10	0.31	0.11

*Only 5 health facilities were surveyed in the faith-based sector due to the low number of these type of facilities in the surveyed districts. Results from the faith-based sector should be interpreted with caution.

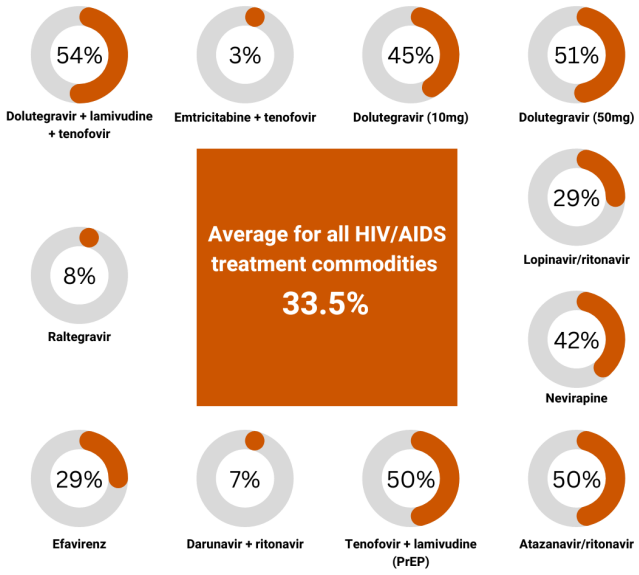
HIV/AIDS

Sub-Saharan Africa still faces the highest burden of HIV/AIDS globally. The condition, which is caused by a virus, is, to date incurable. Luckily, highly effective antiretroviral therapies are on the market, which can minimise symptoms for a long time, and prevent pregnant women living with HIV from transmitting the disease to their children. With proper disease management and treatment, people living with HIV/AIDS are able to live a normal life.

Availability

None of the commodities for the treatment of HIV/AIDS had an availability of 80% or higher in Rwanda (see Figure 5). Some of the surveyed commodities, for example emtricitabine + tenofovir, and the darunavir/ritonavir (DRV/r) combination were not listed on Rwanda's EML, and both had low availabilities at 3% and 7% respectively. The dolutegravir + lamivudine + tenofovir (DTG + 3TC + TDF) combination antiretroviral therapy, on the other hand, is also not on the EML, but had a 54% availability. The same goes for dolutegravir in adult (50mg) and pediatric (10mg) formulations: both are not on the EML but were available at about half of all health facilities. For these medicines, the fact that they are not listed on the EML did not seem to preclude their availability.

Figure 5. Availability of HIV/AIDS treatment commodities.



HIV/AIDS medicines showed a major difference in availability between the sectors (see Table 13). In the public and faith-based sector, many had a high availability and met the WHO target of 80% availability. In the private sector, by contrast, medicines for HIV/AIDS were barely available, with none of the medicines having an availability of more than 10%. Interestingly, the availability of PrEP, the medicine to prevent HIV acquisition, was low in the private sector at only 10% of facilities.

Table 13. Availability of HIV/AIDS treatment commodities, per sector.

	Min. level available	Public (%)	Private (%)	Faith-based* (%)
Emtricitabine + tenofovir	NA	6	0	0
Dolutegravir + lamivudine + tenofovir	NA	**94**	10	**100**
Tenofovir + lamivudine (PrEP)	HC	**88**	10	**80**
Atazanavir/ritonavir	HC	**88**	10	**80**
Darunavir/ritonavir	NA	10	2	20
Lopinavir/ritonavir	HC	50	4	**80**
Raltegravir	HC	13	2	20
Dolutegravir (50mg)	NA	**90**	8	**100**
Paediatric dolutegravir (10mg)	NA	**81**	4	**100**
Efavirenz	HC	54	4	40
Nevirapine	HC	73	8	**80**

*Only 5 health facilities were surveyed in the faith-based sector due to the low number of these type of facilities in the surveyed districts. Results from the faith-based sector should be interpreted with caution.

Stockouts

In the public sector, notably emtricitabine + tenofovir had experienced a high level of stockout (See Table 14). A substantial 70% of public health facilities had experienced a stockout of this commodity, with stockouts lasting on average 36 days. However, only 10 public health facilities had stock cards for it, which, together with the low availability found, indicates that this commodity is generally not stocked at Rwandan public health facilities. All other commodities had experienced a stockout at less than a fifth of health facilities, although stockouts could last a considerably long time. For example, at one public facility darunavir/ritonavir experienced a stockout of 86 days (see Table 14).

In the private facilities, only two HIV/AIDS medicines had had stockouts at some facilities. However, very few stock cards were found, which, in combination with the low availability found, indicates that these medicines are rarely part of the product assortment of private facilities. In the faith-based sector most HIV/AIDS commodities had rarely been out of stock (See Table 14).

Table 14. Stockouts of HIV/AIDS treatment commodities at health facilities, and average number of stockout days per stockout, per sector.

	Public			Private			Faith-based*		
	HFs with stock card (#)	HFs with stock-out (%)	Average # of stockout days	HFs with stock card (#)	HFs with stock-out (%)	Average # of stockout days	Facilities with stock card (#)	Facilities with stockout (%)	Average # of stockout days
Emtricitabine + tenofovir	10	70	36	1	0	NA	1	100	2
Dolutegravir + lamivudine + tenofovir	43	7	20	4	25	31	5	0	NA
Tenofovir + lamivudine (PrEP)	42	7	19	3	0	NA	4	0	NA
Atazanavir/ ritonavir	42	7	33	3	0	NA	4	0	NA

Darunavir/ ritonavir	5	20	86	1	0	NA	1	0	NA
Lopinavir/ ritonavir	24	17	50	1	0	NA	4	0	NA
Raltegravir	7	0	NA	1	0	NA	2	50	7
Dolutegravir (50mg)	42	7	48	2	50	180	5	0	NA
Pediatric dolutegravir (10mg)	37	11	50	1	0	NA	5	0	NA
Efavirenz	32	16	24	2	0	NA	2	0	NA
Nevirapine	36	8	38	2	0	NA	4	25	118

*Only 5 health facilities were surveyed in the faith-based sector due to the low number of these type of facilities in the surveyed districts. Results from the faith-based sector should be interpreted with caution.

Affordability

Affordability of HIV/AIDS treatment commodities in the public and faith-based sector was notably good, as all commodities in the faith-based sector and most in the public sector were available for free (See Table 15). In the private sector, a few HIV/AIDS treatment commodities were available for free, some were available at low cost, and only efavirenz was unaffordable at 2.11 days of income.

Table 15. Affordability of HIV/AIDS treatment commodities.

	Public	Private	Faith-based*
Emtricitabine + tenofovir (200mg + 300mg)	0	NA	NA
Dolutegravir + lamivudine + tenofovir (50mg + 300mg + 300mg)	0	0.84	0
Tenofovir + lamivudine (PrEP) (300mg + 300mg)	0.05	0.84	0
Atazanavir/ritonavir (300mg + 100mg)	0.05	0.84	0
Darunavir/ritonavir (800mg + 100mg)	NA	NA	NA
Lopinavir/ritonavir (200mg + 50mg)	0	0	0
Raltegravir (400mg)	0	0	0
Dolutegravir (50mg)	0	0	0
Pediatric dolutegravir (10mg)	0	0	0
Efavirenz (600mg)	0	2.1	0
Nevirapine (50mg/5ml)	NA	NA	NA

*Only 5 health facilities were surveyed in the faith-based sector due to the low number of these type of facilities in the surveyed districts. Results from the faith-based sector should be interpreted with caution.

PERSONAL HYGIENE PRODUCTS AND KITS

Access to appropriate menstrual hygiene commodities enables women and girls to continue their daily life activities undisturbed during their menstruation, for example, to go to work and school, and therefore might contribute to higher school attendance or participation in class (McMahon et al. 2011; Miiro et al. 2018;). In addition, pregnancy tests and HIV self-tests enable people to know about their health status and in line with that, receive the appropriate care or treatment for their condition.

Availability and Stockouts

Overall, availability of pregnancy test kits was 85% in surveyed facilities, and availability of HIV self-test kits was 38%. HPV DNA test kits were not available in any of the surveyed facilities. When comparing sectors, pregnancy tests had a good availability across sectors, while HIV self-tests had the best availability in public health facilities (53%) (see Table 16). Stockouts of the pregnancy, HIV and HPV tests had occurred at less than 20% of public and private facilities. Sanitary pads had a better availability in the private sector (41%) compared to public health facilities (9%) (see Table 16).

Table 16. Availability, stockouts, and average number of stockout days per stockout of menstrual hygiene products and kits, per sector.

	Public				Private				Faith-based*			
	Availability (%)	HFs with stock card (#)	HFs with stock-out (%)	Average # of stockout days	Availability (%)	HFs with stock card (#)	HFs with stock-out (%)	Average # of stockout days	Availability (%)	HFs with stock card (#)	HFs with stockout (%)	Average # of stockout days
Sanitary pads	9	4	0	NA	41	12	17	8	20	1	0	NA
Pregnancy test kit	88	51	10	31	82	29	3	3	80	4	0	NA
HIV self-test kit	53	38	18	21	22	12	16	53	20	2	50	2
HPV DNA test kit	0	0	NA	NA	0	1	0	NA	0	0	NA	NA

*Only 5 health facilities were surveyed in the faith-based sector due to the low number of these type of facilities in the surveyed districts. Results from the faith-based sector should be interpreted with caution.

Affordability

As can be seen in Table 17, sanitary pads were available for free in the public and faith-based sector, while they were unaffordable in the private sector at 1.6 days of income per menstruation for someone on the international poverty line. Pregnancy and HIV self-test kits were affordable across the sectors (see Table 17).

Table 17. Affordability of menstrual hygiene products and kits.

	Public	Private	Faith-based*
Sanitary pads	0	1.6	0
Pregnancy test kit	0.26	0.24	0.33
HIV self-test kit	0	0.69	0
HPV DNA test kit	NA	NA	NA

*Only 5 health facilities were surveyed in the faith-based sector due to the low number of these type of facilities in the surveyed districts. Results from the faith-based sector should be interpreted with caution.

6. RECOMMENDATIONS

The results of the research on the availability, affordability and stockouts of SRH commodities have demonstrated the efforts made by the Rwandan government in improving the supply of SRH commodities. The research found that, overall, the public sector had a higher availability of commodities compared to the private sector. Several policy recommendations were constructed to improve access to lifesaving SRH commodities in Gasabo, Nyarugenge, Gatsibo and Nyagatare Districts in Rwanda.

1. Strengthen supply chain management

The Government should improve the management of supply chains for sexual and reproductive health commodities, by ensuring their availability and strengthening supply chain management systems at both national and local levels. This includes forecasting, procurement, and distribution processes to avoid stockouts and wastage.

- To strengthen appropriate standard operation procedures on ordering and delivering SRH health commodities from the warehouse to the health facility, by streamlining stock control and pre-order efficiency, identifying alternative suppliers (including local production), centralising/decentralising commodity distribution as appropriate and promoting multi-month dispensing of SRHC to clients.
- To strengthen local stock management, healthcare workers' knowledge should be increased through trainings on supply chain management with the aim to properly manage distribution and avoid stockouts. Where there is a problem of stockouts, healthcare workers should immediately inform the National Level.

2. Increase the availability of specific SRH commodities

The Government should safeguard the steady supply of SRH commodities at public health facilities to avoid stockouts.

- Despite the efforts from the government, some contraceptives in the public sector still had a low availability, including the emergency contraceptive (46%). This commodity is essential to prevent pregnancy after unprotected sex. We therefore recommend an increase in the availability and affordability of emergency contraceptive.
- Other commodities which are essential to reduce maternal mortality, but had a concerningly low availability are misoprostol and ergometrine. We recommend the government to improve access to these lifesaving commodities.
- To expand Community-Based Distribution Channels by strengthening the existing channels, and supporting and scaling-up youth friendly centres, which are essential community-based distribution channels, in line with the FP/ASRH Strategic Plan 2018-2024.[6] The community-based distribution should take the needs of rural areas into special consideration.
- To support the availability of adolescent SRH commodities and service delivery at the second-generation health posts in the catchment areas (specifically near faith-based health facilities) where FP commodities are not provided. This will contribute to better access to SRH commodities for adolescents.

3. Increase Government investment in SRH

The Government should increase resources allocated for sexual and reproductive health programs and services, particularly for procurement and distribution of SRH commodities to ensure their availability and affordability.

4. Faith-based health facilities engagement

The Government should continue engaging with faith-based health facilities to ensure provision of SRH services and commodities, as outlined in the FP/ASRH Strategic Plan 2018-2024.

6. Republic of Rwanda. Ministry of Health. National Family Planning and Adolescent Sexual and Reproductive Health (FP/ASRH) Strategic Plan (2018–2024).

5. Monitor and evaluate progress

The government should strengthen regular monitoring and evaluation mechanisms on every level to track progress in improving the availability, affordability, and use of SRH commodities, in line with mandates according to the Top Down Supervisory System.[7,8] Efforts should further be directed at collecting and analysing data to inform decision-making and identify areas for improvement and targeted intervention.

- To establish a supply chain tracking system of FP commodities for private health facilities.

6. Foster partnerships

The Government should foster partnerships between public, private sectors and faith-based health facilities to improve the availability, accessibility, and affordability of sexual and reproductive health commodities. This should also include collaborations with pharmaceutical companies.

7. Republic of Rwanda. Ministry of Health. Procedures Manual for Community Health Workers Performance Based Financing. June 2021.

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ANNEX 1

#	Commodity	Use
	FAMILY PLANNING	
1	Ethinylestradiol + levonorgestrel	Birth control pill; contraceptive
2	Ethinylestradiol + norethisterone	Birth control pill; contraceptive
3	Levonorgestrel (30 mcg)	Birth control pill; contraceptive
4	Levonorgestrel (1.5 mg)	Emergency contraceptive
5	Medroxyprogesterone acetate	Injectable contraceptive
6	Norethisterone enanthate	Injectable contraceptive
7	Implants: levonorgestrel	Long-acting contraceptive
8	Implants: etonogestrel	Long-acting contraceptive
9	Copper-containing IUD	Long-acting contraceptive
10	Levonorgestrel-releasing IUD	Long-acting contraceptive
11	Male condoms	Contraceptive; STI protection
12	Female condoms	Contraceptive; STI protection
	MATERNAL HEALTH	
13	Oxytocin	Prevention of post-partum haemorrhage
14	Misoprostol	Prevention of post-partum haemorrhage; induce labour; induce medical abortion
15	Tranexamic acid	Prevention of post-partum haemorrhage
16	(methyl)ergometrine	Prevention of post-partum haemorrhage
17	Mifepristone - misoprostol	Medical abortion
18	Magnesium sulphate	Treatment of pre-eclampsia and eclampsia
19	Calcium gluconate	Antidote for magnesium toxicity (used in combination with magnesium sulphate)
20	Ferrous salt	Supplement, prevent iron deficiency
21	Folic acid tablet	Supplement, prevent folic acid deficiency
22	Ferrous salt and folic acid	Supplement, prevent iron and folic acid deficiency
23	Dexamethasone	Accelerating lung maturation in preterm babies
24	Methyldopa	Management of pregnancy-induced hypertension
	SEXUALLY TRANSMITTED INFECTIONS	
25	Metronidazole	Antibiotic, STI treatment
26	Clotrimazole	Antifungal, STI treatment
27	Benzathine benzylpenicillin	Antibiotic, STI treatment
28	Amoxicillin	Antibiotic, STI treatment
29	Acyclovir	Antiviral, STI treatment
30	Azithromycin	Antibiotic, STI treatment
31	Ceftriaxone	Antibiotic, STI treatment
32	Doxycycline	Antibiotic, STI treatment
	HIV/AIDS	
33	Pre-Exposure Prophylaxis (PrEP): (emtricitabine (FTC) + tenofovir (TDF))	Prevention of HIV acquisition
34	Dolutegravir + lamivudine + tenofovir (DTG + 3TC + TDF)	Antiretroviral, management of HIV/AIDS

35	Tenofovir + lamivudine (TDF + 3TC)	Antiretroviral, management of HIV/AIDS
36	Atazanavir/ritonavir (ATV/r)	Antiretroviral, management of HIV/AIDS
37	Darunavir/ritonavir (DRV/r)	Antiretroviral, management of HIV/AIDS
38	Lopinavir/ritonavir (LPV/r)	Antiretroviral, management of HIV/AIDS
39	Raltegravir (RAL)	Antiretroviral, management of HIV/AIDS
40	Dolutegravir (DTG)	Antiretroviral, management of HIV/AIDS
41	Paediatric dolutegravir (DTG)	Antiretroviral, management of HIV/AIDS
42	Efavirenz (EFV)	Antiretroviral, management of HIV/AIDS
43	Nevirapine	Antiretroviral, management of HIV/AIDS
PERSONAL HYGIENE & KITS		
44	Sanitary pads	Management of menstruation
45	Vasectomy kit	Male sterilisation
46	Tubal ligation kit	Female sterilisation
47	Pregnancy test kit	Pregnancy testing
48	HIV self-test kit	HIV testing
49	HPV DNA test kit	HPV testing

ANNEX 2

Table 1. Availability per sector and location.

	PUBLIC SECTOR			PRIVATE SECTOR			FAITH-BASED SECTOR		
	Overall (%)	Urban (%)	Rural (%)	Overall (%)	Urban (%)	Rural (%)	Overall (%)	Urban (%)	Rural (%)
Ethinylestradiol + levonorgestrel	79.3	77.8	80.0	53.7	52.0	55.2	0.0	0.0	0.0
Ethinylestradiol + norethisterone	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Levonorgestrel (30 mcg)	79.3	77.8	80.0	16.7	20.0	13.8	0.0	0.0	0.0
Levonorgestrel (1.5mg)	45.8	43.8	46.9	69.4	66.7	72.0	0.0	0.0	0.0
Medroxyprogesterone acetate	87.5	87.5	87.5	24.5	25.0	24.0	0.0	0.0	0.0
Norethisterone enanthate	0.0	0.0	0.0	10.2	8.3	12.0	0.0	0.0	0.0
Implants: levonorgestrel	68.8	75.0	65.6	20.4	20.8	20.0	0.0	0.0	0.0
Implants: etonogestrel	87.5	93.8	84.4	16.3	12.5	20.0	0.0	0.0	0.0
Copper-containing IUD	85.4	87.5	84.4	14.3	20.8	8.0	0.0	0.0	0.0
Levonorgestrel-releasing IUD	22.9	18.8	25.0	8.2	12.5	4.0	0.0	0.0	0.0
Male condoms	84.5	83.3	85.0	72.2	76.0	69.0	0.0	0.0	0.0
Female condoms	17.2	11.1	20.0	5.6	4.0	6.9	0.0	0.0	0.0
Oxytocin	79.2	87.5	75.0	10.2	12.5	8.0	80.0	50.0	100.0
Misoprostol	41.7	31.3	46.9	14.3	16.7	12.0	60.0	0.0	100.0
Tranexamic acid	6.3	12.5	3.1	40.8	37.5	44.0	0.0	0.0	0.0
(methyl)ergometrine	0.0	0.0	0.0	2.0	0.0	4.0	0.0	0.0	0.0
Mifepristone - misoprostol	50.0	66.7	33.3	0.0	0.0	0.0	0.0	NA	0.0
Magnesium sulphate	85.4	93.8	81.3	8.2	16.7	0.0	80.0	50.0	100.0
Calcium gluconate	83.3	66.7	100.0	12.5	28.6	0.0	100.0	NA	100.0
Ferrous salt	6.9	11.1	5.0	7.4	8.0	6.9	20.0	50.0	0.0

Folic acid tablet	13.8	5.6	17.5	18.5	24.0	13.8	0.0	0.0	0.0
Ferrous salt and folic acid	48.3	83.3	32.5	33.3	28.0	37.9	40.0	50.0	33.3
Dexamethasone	64.6	81.3	56.3	40.8	41.7	40.0	60.0	50.0	66.7
Methyldopa	72.9	75.0	71.9	40.8	50.0	32.0	40.0	0.0	66.7
Metronidazole	87.5	93.8	84.4	67.3	66.7	68.0	100.0	100.0	100.0
Clotrimazole	41.7	75.0	25.0	63.3	62.5	64.0	40.0	100.0	0.0
Benzathine benzylpenicillin	81.3	81.3	81.3	49.0	41.7	56.0	100.0	100.0	100.0
Amoxicillin	91.4	100.0	87.5	75.9	76.0	75.9	100.0	100.0	100.0
Acyclovir	22.9	25.0	21.9	34.7	41.7	28.0	60.0	100.0	33.3
Azithromycin	16.7	33.3	0.0	18.8	14.3	22.2	0.0	NA	0.0
Ceftriaxone	66.7	66.7	66.7	68.8	71.4	66.7	100.0	NA	100.0
Doxycycline	75.9	83.3	72.5	74.1	76.0	72.4	60.0	50.0	66.7
(emtricitabine (FTC) + tenofovir (TDF))	6.3	6.3	6.3	0.0	0.0	0.0	0.0	0.0	0.0
Dolutegravir + lamivudine + tenofovir (DTG + 3TC + TDF)	93.8	93.8	93.8	10.2	16.7	4.0	100.0	100.0	100.0
Pre-Exposure Prophylaxis: Tenofovir + lamivudine (TDF + 3TC)	87.5	93.8	84.4	10.2	16.7	4.0	80.0	100.0	66.7
Atazanavir/ritonavir (ATV/r)	87.5	93.8	84.4	10.2	16.7	4.0	80.0	100.0	66.7
Darunavir/ritonavir (DRV/r)	10.4	12.5	9.4	2.0	4.2	0.0	20.0	50.0	0.0
Lopinavir/ritonavir (LPV/r)	50.0	62.5	43.8	4.1	4.2	4.0	80.0	100.0	66.7
Raltegravir (RAL)	12.5	25.0	6.3	2.0	4.2	0.0	20.0	50.0	0.0
Dolutegravir (DTG)	89.6	87.5	90.6	8.2	12.5	4.0	100.0	100.0	100.0

pediatric dolutegravir (DTG)	81.3	81.3	81.3	4.1	4.2	4.0	100.0	100.0	100.0
Efavirenz (EFV)	54.2	56.3	53.1	4.1	8.3	0.0	40.0	50.0	33.3
Nevirapine	72.9	87.5	65.6	8.2	12.5	4.0	80.0	100.0	66.7
Sanitary pads	8.6	0.0	12.5	40.7	60.0	24.1	20.0	0.0	33.3
Vasectomy kit	33.3	66.7	0.0	100.0	100.0	NA	100.0	NA	100.0
Tubal ligation kit	50.0	66.7	33.3	0.0	0.0	NA	0.0	NA	0.0
Pregnancy test kit	87.9	83.3	90.0	81.5	84.0	79.3	80.0	100.0	66.7
HIV self-test kit	53.4	66.7	47.5	22.2	16.0	27.6	20.0	0.0	33.3
HPV DNA test kit	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 2. Stockouts per sector and location.

	Facilities reporting a stockout in a 12-month period (%)					
Number of facilities with stock cards (%)	18 (100)	37 (93)	11 (44)	23 (80)	2 (100)	3 (100)
	Public urban	Public rural	Private urban	Private rural	Faith-based urban	Faith-based rural
Ethinylestradiol + levonorgestrel	7.7%	10.0%	33.3%	13.3%	NA	NA
Ethinylestradiol + norethisterone	NA	NA	NA	NA	NA	NA
Levonorgestrel	0.0%	8.8%	33.3%	25.0%	NA	NA
Levonorgestrel	12.5%	15.8%	0.0%	5.6%	NA	NA
Medroxyprogesterone acetate	7.7%	6.1%	33.3%	28.6%	NA	NA
Norethisterone enanthate	0.0%	0.0%	NA	0.0%	NA	NA
Implants: levonorgestrel	10.0%	13.0%	0.0%	0.0%	NA	NA
Implants: etonogestrel	7.7%	3.6%	0.0%	0.0%	NA	NA
Copper-containing IUD	7.7%	0.0%	0.0%	0.0%	NA	NA
Levonorgestrel-releasing IUD	0.0%	18.2%	0.0%	NA	NA	NA
Male condoms	0.0%	9.1%	11.1%	5.9%	NA	NA
Female condoms	33.3%	36.4%	0.0%	0.0%	NA	NA
Oxytocin	20.0%	17.4%	0.0%	0.0%	0.0%	0.0%
Misoprostol	16.7%	25.0%	0.0%	50.0%	NA	0.0%
Tranexamic acid	50.0%	50.0%	0.0%	0.0%	NA	NA
(methyl)ergometrine	NA	NA	NA	0.0%	NA	NA
Mifepristone - misoprostol	0.0%	0.0%	NA	NA	NA	0.0%
Magnesium sulphate	0.0%	19.2%	0.0%	100.0%	0.0%	0.0%

Calcium gluconate	10.0%	4.3%	0.0%	40.0%	0.0%	0.0%
Ferrous salt	0.0%	71.4%	0.0%	50.0%	0.0%	100.0%
Folic acid tablet	100.0%	46.2%	0.0%	0.0%	NA	NA
Ferrous salt and folic acid	7.7%	13.3%	0.0%	10.0%	0.0%	66.7%
Dexamethasone	7.1%	18.2%	0.0%	30.0%	0.0%	33.3%
Methyldopa	23.1%	12.0%	0.0%	14.3%	100.0%	0.0%
Metronidazole	12.5%	12.1%	25.0%	0.0%	0.0%	0.0%
Clotrimazole	16.7%	40.0%	14.3%	6.7%	0.0%	NA
Benzathine benzylpenicillin	0.0%	4.0%	0.0%	7.7%	0.0%	0.0%
Amoxicillin	6.7%	5.9%	0.0%	0.0%	0.0%	0.0%
Acyclovir	0.0%	12.5%	0.0%	14.3%	0.0%	0.0%
Azithromycin	NA	0.0%	0.0%	6.7%	NA	NA
Ceftriaxone	20.0%	33.3%	0.0%	0.0%	0.0%	0.0%
Doxycycline	16.7%	22.6%	0.0%	0.0%	50.0%	0.0%
Pre-Exposure Prophylaxis: (emtricitabine (FTC) + tenofovir (TDF))	50.0%	75.0%	0.0%	NA	NA	100.0%
Dolutegravir + lamivudine + tenofovir (DTG + 3TC + TDF)	7.1%	6.9%	0.0%	100.0%	0.0%	0.0%
Tenofovir + lamivudine (TDF + 3TC)	7.1%	7.1%	0.0%	NA	0.0%	0.0%
Atazanavir/ritonavir (ATV/r)	0.0%	10.7%	0.0%	NA	0.0%	0.0%
Darunavir/ritonavir (DRV/r)	0.0%	25.0%	0.0%	NA	0.0%	NA
Lopinavir/ritonavir (LPV/r)	11.1%	20.0%	0.0%	NA	0.0%	0.0%
Raltegravir (RAL)	0.0%	0.0%	0.0%	NA	0.0%	100.0%

Dolutegravir (DTG)	7.1%	7.1%	50.0%	NA	0.0%	0.0%
pediatric dolutegravir (DTG)	8.3%	12.0%	0.0%	NA	0.0%	0.0%
Efavirenz (EFV)	18.2%	14.3%	0.0%	NA	0.0%	0.0%
Nevirapine	0.0%	13.0%	0.0%	NA	50.0%	0.0%
Sanitary pads	NA	0.0%	0.0%	33.3%	NA	0.0%
Tampons	0.0%	10.0%	50.0%	NA	NA	NA
Pregnancy test kit	17.6%	5.9%	0.0%	5.3%	0.0%	0.0%
HIV self-test kit	0.0%	28.0%	0.0%	20.0%	100.0%	0.0%
HPV DNA test kit	NA	NA	0.0%	NA	NA	NA

Table 3. Price and affordability per sector, with treatment regimens.

	Average Unit Price (Rwf)			Treatment Units	Treatment Days	Mean Treatment Cost			Affordability (days of wages)		
	Public	Private	Faith-based			Public	Private	Faith-based	Public	Private	Faith-based
Ethinylestradiol + levonorgestrel (30mcg + 150 mcg)	23.81	1033.65	NA	1	1	23.81	1033.65	NA	0.01	0.44	NA
Ethinylestradiol + norethisterone (35mcg + 1.0 mg)	NA	NA	NA	1	1	NA	NA	NA	N/A	N/A	NA
Levonorgestrel (30 mcg)	22.73	851.85	NA	1	1	22.73	851.85	NA	0.01	0.36	NA
Levonorgestrel (1.5 mg)	800.00	5867.65	NA	1	1	800.00	5867.65	NA	0.34	2.47	NA
Medroxyprogesterone acetate (150 mg/ml)	34.29	491.67	NA	1	1	34.29	491.67	NA	0.01	0.21	NA
Norethisterone enanthate (200mg/ml)	NA	1750.00	NA	1	1	N/A	1750.00	NA	N/A	0.74	NA
Implants: levonorgestrel	73.53	900.00	NA	1	1	73.53	900.00	NA	0.03	0.38	NA
Implants: etonogestrel	80.43	727.27	NA	1	1	80.43	727.27	NA	0.03	0.31	NA
Copper-containing IUD	0.00	2857.14	NA	1	1	0.00	2857.14	NA	0.00	1.20	NA
Levonorgestrel-releasing IUD	0.00	92800.00	NA	1	1	0.00	92800.00	NA	0.00	39.13	NA
Male condoms	6.94	398.29	NA	1	1	6.94	398.29	NA	0.00	0.17	NA
Female condoms	0.00	1333.33	NA	1	1	0.00	1333.33	NA	0.00	0.56	NA
Oxytocin (10 IU in 1ml)	154.59	560.00	0.00	1	1	154.59	560.00	0.00	0.07	0.24	0.00
Misoprostol (200mcg)	89.43	623.29	247.00	5	1	447.16	3116.43	1235.00	0.19	1.31	0.52
Carbetocin (100mcg/ml)	NA	NA	NA	1	1	NA	NA	NA	NA	NA	NA
Tranexamic acid (100mg/ml in 5ml)	NA	NA	NA	2	1	NA	NA	NA	NA	NA	NA
Ergometrine (200mcg in 1ml)	NA	NA	NA	3	1	NA	NA	NA	NA	NA	NA
Mifepristone - misoprostol (200mg + 200mcg)	0.00	NA	NA	1	1	0.00	NA	NA	0.00	NA	NA
Magnesium sulphate (0.5mg/ml)	126.16	1132.50	504.00	9	1	1135.41	10192.50	4536.00	0.48	4.30	1.91
Calcium gluconate (100mg/ml in 10ml)	253.69	937.14	1124.50	1	1	253.69	937.14	1124.50	0.11	0.40	0.47
Ferrous salt (equiv 60mg iron)	2.50	30.00	0.00	1	30	75.00	900.00	0.00	0.03	0.38	0.00
Folic acid tablet (5mg)	3.25	47.03	NA	1	30	97.50	1411.00	NA	0.04	0.59	NA
Ferrous salt and folic acid (60mg + 400mcg)	1.98	67.50	0.00	1	30	59.46	2025.00	0.00	0.03	0.85	0.00
Dexamethasone (4mg/ml)	103.13	323.33	163.00	3	1	309.39	970.00	489.00	0.13	0.41	0.21
Methyldopa (250mg)	45.28	98.75	86.00	6	30	8151.00	17775.00	15480.00	3.44	7.49	6.53
Metronidazole (250mg)	7.52	27.14	8.64	4	7	210.66	759.79	241.92	0.09	0.32	0.10
Clotrimazole (500mg)	647.33	1208.33	NA	1	1	647.33	1208.33	NA	0.27	0.51	NA
Benzathine benzylpenicillin (2.4 million IU)	240.36	657.74	287.00	1	1	240.36	657.74	287.00	0.10	0.28	0.12

Amoxicillin (250mg)	36.76	64.23	37.00	6	7	771.89	1348.92	777.00	0.33	0.57	0.33
Acyclovir (200mg)	0.00	190.40	NA	3	10	0.00	5712.00	NA	0.00	2.41	NA
Azithromycin (500mg)	333.30	488.23	NA	1	3	999.90	1464.68	NA	0.42	0.62	NA
Ceftriaxone (1g in vial)	353.09	711.85	259.00	1	1	353.09	711.85	259.00	0.15	0.30	0.11
Doxycycline (100mg)	16.60	52.63	19.33	2	7	232.43	736.85	270.67	0.10	0.31	0.11
Emtricitabine (FTC) + tenofovir (TDF) (200mg +300mg)	0.00	NA	NA	1	30	0.00	NA	NA	0.00	NA	NA
Dolutegravir + lamivudine + tenofovir (DTG + 3TC + TDF) (50mg + 300mg + 300mg)	0.00	66.67	0.00	1	30	0.00	1999.98	0.00	0.00	0.84	0.00
Pre-Exposure Prophylaxis: Tenofovir + lamivudine (TDF + 3TC) (300mg + 300mg)	4.06	66.67	0.00	1	30	121.90	1999.98	0.00	0.05	0.84	0.00
Atazanavir/ritonavir (ATV/r) (300mg + 100mg)	4.17	66.67	0.00	1	30	124.95	1999.98	0.00	0.05	0.84	0.00
Darunavir/ritonavir (DRV/r) (800mg + 100mg)	NA	NA	NA	1	30	NA	NA	NA	NA	NA	NA
Lopinavir/ritonavir (LPV/r) (200mg + 50mg)	0.00	0.00	0.00	4	30	0.00	0.00	0.00	0.00	0.00	0.00
Raltegravir (RAL) (400mg)	0.00	0.00	0.00	1	30	0.00	0.00	0.00	0.00	0.00	0.00
Dolutegravir (DTG) (50mg)	0.00	0.00	0.00	1	30	0.00	0.00	0.00	0.00	0.00	0.00
pediatric dolutegravir (DTG) (10mg)	0.00	0.00	0.00	1	30	0.00	0.00	0.00	0.00	0.00	0.00
Efavirenz (EFV) (600mg)	0.00	166.67	0.00	1	30	0.00	4999.95	0.00	0.00	2.11	0.00
Nevirapine (50mg/5ml)	NA	NA	NA	1	30	NA	NA	NA	NA	NA	NA
Sanitary pads	0.00	176.81	0.00	3	7	0.00	3712.99	0.00	0.00	1.57	0.00
Pregnancy test kit	623.47	573.26	786.25	1	1	623.47	573.26	786.25	0.26	0.24	0.33
HIV self-test kit	0.00	1625.00	0.00	1	1	0.00	1625.00	0.00	0.00	0.69	0.00
HPV DNA test kit	NA	NA	NA	1	1	NA	NA	NA	NA	NA	NA

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