

# Antiretroviral and Sexual and Reproductive Health Commodity Quarterly Supply Planning Technical Report: Quarter 2

August 2013







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# CONTENTS

| Acronyms and Abbreviations            | iv |
|---------------------------------------|----|
| Introduction                          | 1  |
| Step 1: Organize and Analyze the Data | 1  |
| Background                            | 3  |
| Supply Planning                       | 4  |
| ART Commodities                       | 4  |
| SRH Commodities                       | 8  |
| Methods                               | 8  |
| Results                               | 9  |
| Discussion and Way Forward            | 15 |

## ACRONYMS AND ABBREVIATIONS

- AIDS acquired immune deficiency syndrome
- ART antiretroviral therapy ARV antiretroviral CHAI **Clinton Health Access Initiatives** CMS **Central Medical Stores** Elizabeth Glaser Pediatric AIDS Foundation EGPAF HIV human immunodeficiency virus LMIS logistics management information system MOH Ministry of Health MSH Management Sciences for Health OI opportunistic infection PMTCT prevention of mother-to-child transmission PSI **Population Services International** SIAPS Systems for Improved Access to Pharmaceuticals and Services SRH sexual reproductive health SZL Swazi lilangeni TLE tenofovir/lamivudine/efavirenz TWG **Technical Working Group** United Nations Population Fund UNFPA USAID US Agency for International Development USD US dollar WHO World Health Organization

## INTRODUCTION

Supply planning is an essential component in the quantification and procurement process. It is the process of determining what product to obtain, in what quantities, at what arrival times, and at what cost for commodities and transport. Effective supply planning has many benefits, including that it ensures continuous availability of products; prevents expiry and obsolescence; helps manage expenditures when funding may be insufficient to pay for all requirements at once; aids to manage storage, especially when warehouse space or infrastructure is insufficient; and facilitates promptly realigning inventory, transport, manufacturing, and purchasing plans with changes in the supply chain.

Conducting supply planning exercises involves carrying out the following steps:

- 1. Organize and analyze the data
- 2. Determine the average and projected monthly consumption
- 3. Establish or use already established minimum and maximum stock levels
- 4. Calculate the quantity to order
- 5. Determine when to place the order, depending on supplier lead time
- 6. Estimate costs for each product and total cost
- 7. Compare total costs with budget; make adjustments or mobilize additional resources
- 8. Validate the supply plan
- 9. Carry out a risk assessment and troubleshoot problems

#### Step 1: Organize and Analyze the Data

The following data are needed to carry out supply planning:

- Procurement period
- All shipments on order by supplier with the expected arrival date
- All planned shipments by supplier with the expected arrival date
- Lead times: planning to ordering, ordering to shipping, shipping to arrival, arrival to receiving
- Stocks on hand, consumption, and potential losses (expiries) and other adjustments
- Minimum and maximum stock levels
- Prices
- Freight and logistics costs if required



Source: USAID | DELIVER Project.



#### BACKGROUND

The Swaziland Ministry of Health (MOH), through the Central Medical Store (CMS), Swaziland National AIDS Program, and in collaboration with partners such as the Systems for Improved Access to Pharmaceuticals and Services (SIAPS) Program, a US Agency for International Development (USAID) Program implemented by Management Sciences for Health (MSH); the Clinton Health Access Initiatives (CHAI); the United Nations Population Fund (UNFPA); Population Services International (PSI); and the Elizabeth Glaser Pediatric AIDS Foundation (EGPAF), conducts annual forecasting exercises for health commodities to inform the quantity and budget required to effectively implement various programs. This annual forecasting exercise is being done for essential health commodities including antiretroviral (ARV), antituberculosis, and sexual reproductive health (SRH) commodities.

Nevertheless, systematic supply planning to ensure that adequate product was procured, in the right quantity, and delivered at the right time to the CMS was a challenge. Therefore, SIAPS has started putting into place a systematic process for supply planning, using the Pipeline® Monitoring and Procurement Planning System (PipeLine), a software tool designed to help program managers monitor the status of their product pipelines and product procurement plans. PipeLine provides information needed to initiate and follow up actions to ensure the regular and consistent stock of products at the program or national level.

The SIAPS predecessor program, Strengthening Pharmaceutical Systems, introduced PipeLine in Swaziland in December 2011. Before the introduction of Pipeline, the MOH was using a tailored Excel spreadsheet for forecasting ARV needs. This was adequate for the number of patients on treatment at the time, but as the MOH accelerated scale-up, the Excel program became too cumbersome to work with the increasing volume of data used in forecasting. The MOH requested technical assistance in implementing PipeLine with the understanding that the tool can be expanded to other commodities beyond ARVs. The implementation of Pipeline was subject to local users being trained on the software, the presence of a good logistics management information system (LMIS), and the use of Pipeline output to mobilize financial resources from the Swaziland Ministry of Finance. Pipeline was introduced concurrently with Quantimed, another MSH tool used in supply forecasting.

Relevant MOH staff has been trained on forecasting and supply planning processes, as well as on how to use the tools appropriately. After the training and implementation of the process, CMS conducted forecasting and regular supply planning using Quantimed and PipeLine in budget year 2012/13 (April 2012 to March 2013). Because of this exercise, the MOH was able to use data coming from facilities' LMISs for procurement decisions and was able to save about USD 6.1 million by avoiding unnecessary procurement of ARV therapy (ART) commodities. No ARV stock-outs occurred in budget year 2012/13. This was a positive improvement from the previous years when occasional stock-outs of these life-saving medicines were reported.

Based on the results of the ART commodities forecasting and supply planning exercise, the system was expanded to SRH and tuberculosis commodities.

## SUPPLY PLANNING

#### **ART Commodities**

CMS, in coordination with SIAPS and CHAI, has conducted a one-year quantification exercise for HIV commodities that informs quantity and budget required for the year April 2013 to March 2014. The total budget proposal estimate after the first-quarter supply planning exercise was SZL 128,632,480.05 (USD 12,250,712.38 at the rate of USD 1 = SZL 10.50). This budget comprises product costs for 12 months' consumption, lead time, safety stock, and freight cost. Scale-up of the ART program, an attrition rate of 19 percent for adults, and medicines for opportunistic infections (OIs) were also considered in the estimate. Quantity and budget requirements for each category and quarter were submitted to the planning unit as shown in table 1.

Considering the existing stock, actual consumption, program growth, previous orders, shipments, and receipts, CMS through the ART Forecasting and Supply Planning Technical Working Group (TWG) conducted the regular quarterly supply plan of HIV commodities on August 16, 2013.

| Table 1: Estimated Quarterly Quantity and Budget for ART, | , Prevention of Mother-to-Child Transmission, and OI Commodities before Second-Quarter |
|---|--|
| Supply Planning Exercise                                  |  |

|  |            | Q1       |               |          | Q2           |          | Q3           | Q4       |              |
|--|------------|----------|---------------|----------|--------------|----------|--------------|----------|--------------|
| Product                                      | Unit price | Quantity | Cost (SZL)    | Quantity | Cost (SZL)   | Quantity | Cost (SZL)   | Quantity | Cost (SZL)   |
| AZT/3TC/NVP 300/150/200<br>mg, 60 tablets    | 73.01      | 153,700  | 11,221,637.00 | 80,667   | 5,889,497.67 | 79,536   | 5,806,923.36 | 59,336   | 4,332,121.36 |
| Co-trimoxazole 960 mg,<br>1,000 tablets      | 199.00     | 40,814   | 8,121,986.00  | 14,121   | 2,810,079.00 | 14,121   | 2,810,079.00 | 14,121   | 2,810,079.00 |
| Nevirapine 10 mg/ml, 25 ml                   | 24.05      | 145,212  | 3,492,348.60  | 35,292   | 848,772.60   | 35,292   | 848,772.60   | 35,292   | 848,772.60   |
| Zidovudine 300 mg, 60<br>tablets             | 49.62      | 23,591   | 1,170,585.42  | 10,174   | 504,833.88   | 10,166   | 504,436.92   | 10,149   | 503,593.38   |
| AZT/3TC 300/150 mg, 60<br>tablets            | 61.51      | 18,459   | 1,135,413.09  | 32,850   | 2,020,603.50 | 29,329   | 1,804,026.79 | 26,061   | 1,603,012.11 |
| Nevirapine 10 mg/ml, 240 ml                  | 38.41      | 25,000   | 960,250.00    | 20,900   | 802,769.00   | 14,249   | 547,304.09   | 14,266   | 547,957.06   |
| Abacavir 300 mg, 60 tablets                  | 103.11     | 4,749    | 489,669.39    | 5,238    | 540,090.18   | 5,268    | 543,183.48   | 5,309    | 547,410.99   |
| Efavirenz 600mg, 30 capsules                 | 32.22      | 15,000   | 483,300.00    | 14,933   | 481,141.26   | 27,149   | 874,740.78   | 25,632   | 825,863.04   |
| Didanosine 250 mg, 30 capsules               | 136.69     | 3,143    | 429,616.67    | 1,853    | 253,286.57   | 0        | 0.00         | 864      | 118,100.16   |
| Lamivudine 150 mg, 60<br>tablets             | 19.30      | 21,993   | 424,464.90    | 7,917    | 152,798.10   | 7,704    | 148,687.20   | 7,462    | 144,016.60   |
| Co-trimoxazole 120 mg, 100 tablets           | 8.40       | 37,887   | 318,250.80    | 15,591   | 130,964.40   | 15,591   | 130,964.40   | 0        | 0.00         |
| Didanosine 400 mg, 30<br>capsules            | 181.92     | 1,531    | 278,519.52    | 1,456    | 264,875.52   | 0        | 0.00         | 689      | 125,342.88   |
| Stavudine 30 mg, 60 tablets                  | 19.50      | 14,168   | 276,276.00    | 3,321    | 64,759.50    | 3,055    | 59,572.50    | 2,751    | 53,644.50    |
| Lopinavir/Ritonavir 80 mg/20<br>ml, 60 ml    | 35.94      | 7,200    | 258,768.00    | 3,919    | 140,848.86   | 4,168    | 149,797.92   | 4,400    | 158,136.00   |
| Vincristine injection 2 mg/2<br>ml, 2ml vial | 80.50      | 1,610    | 129,605.00    | 0        | 0.00         | 0        | 0.00         | 647      | 52,083.50    |
| Tenofovir 300 mg, 30 tablets                 | 38.85      | 3,000    | 116,550.00    | 2,899    | 112,626.15   | 3,311    | 128,632.35   | 3,603    | 139,976.55   |

|   |            | Q1       |            |          | Q2            |          | Q3            | Q4       |               |
|---|------------|----------|------------|----------|---------------|----------|---------------|----------|---------------|
| Product   | Unit price | Quantity | Cost (SZL) | Quantity | Cost (SZL)    | Quantity | Cost (SZL)    | Quantity | Cost (SZL)    |
| D4T/3TC/NVP 12/60/100 mg,<br>60 tablets           | 34.40      | 1,705    | 58,652.00  | 6,218    | 213,899.20    | 6,446    | 221,742.40    | 6,603    | 227,143.20    |
| Lopinavir/Ritonavir 100/25<br>mg, 60 tablets      | 52.87      | 1,033    | 54,614.71  | 1,033    | 54,614.71     | 1,681    | 88,874.47     | 1,792    | 94,743.04     |
| Abacavir 60 mg, 60 tablets                        | 46.90      | 920      | 43,148.00  | 0        | 0.00          | 720      | 33,768.00     | 0        | 0.00          |
| Ritonavir 100 mg, 84 capsules                     | 62.19      | 404      | 25,124.76  | 0        | 0.00          | 0        | 0.00          | 0        | 0.00          |
| TDF/3TC/EFV 300/300/600<br>mg, 30 tablets         | 109.35     | 0        | 0.00       | 124,511  | 13,615,277.85 | 94,338   | 10,315,860.30 | 95,461   | 10,438,660.35 |
| AZT/3TC/NVP 60/30/50 mg,<br>60 tablets            | 73.01      | 0        | 0.00       | 47,774   | 3,487,979.74  | 24339    | 1,776,990.39  | 24,525   | 1,790,570.25  |
| Doxorubicin inj 50 mg/ml, 2.5<br>ml               | 325.00     | 0        | 0.00       | 1,486    | 482,950.00    | 0        | 0.00          | 426      | 138,450.00    |
| D4T/3TC/NVP 30/150/200<br>mg, 60 tablets          | 43.57      | 0        | 0.00       | 6,775    | 295,186.75    | 5,397    | 235,147.29    | 4,629    | 201,685.53    |
| Tenofovir/Lamivudine<br>300/300 mg, 30 tablets    | 45.46      | 0        | 0.00       | 5,271    | 239,619.66    | 0        | 0.00          | 0        | 0.00          |
| Nevirapine 200 mg, 60<br>tablets                  | 23.58      | 0        | 0.00       | 4,624    | 109,033.92    | 5,400    | 127,332.00    | 5,400    | 127,332.00    |
| Indinavir 400 mg, 180<br>capsules                 | 610.50     | 0        | 0.00       | 90       | 54,945.00     | 0        | 0.00          | 0        | 0.00          |
| Lamivudine 10 mg/ml, 240 ml                       | 21.00      | 0        | 0.00       | 400      | 8,400.00      | 0        | 0.00          | 0        | 0.00          |
| AZT/3TC 60/30 mg, 60 tablets                      | 21.91      | 0        | 0.00       | 0        | 0.00          | 8,869    | 194,319.79    | 7,109    | 155,758.19    |
| TDF/3TC/NVP 300/300/200<br>mg, 30 co-pack tablets | 109.35     | 0        | 0.00       | 0        | 0.00          | 30,710   | 3,358,138.50  | 23,184   | 2,535,170.40  |
| Ritonavir 100 mg, 84 capsules                     | 62.19      | 0        | 0.00       | 0        | 0.00          | 333      | 20,709.27     | 0        | 0.00          |
| Dapsone 100 mg, 100 tablets                       | 150        | 0        | 0.00       | 0        | 0.00          | 1,223    | 183,450.00    | 1,351    | 202,650.00    |
| Bleomycin injection 15 units vial                 | 292        | 0        | 0.00       | 0        | 0.00          | 610      | 178,120.00    | 618      | 180,456.00    |

|  |            | Q1       |               | Q2       |               | Q3       |               | Q4       |               |
|--|------------|----------|---------------|----------|---------------|----------|---------------|----------|---------------|
| Product                                    | Unit price | Quantity | Cost (SZL)    |
| Lopinovir/ritonavir 200/50<br>mg, 120 tabs | 229.69     | 0        | 0.00          | 0        | 0.00          | 12,524   | 2,876,637.56  | 10,651   | 2,446,428.19  |
| TDF/3TC 300/300 mg, 30<br>tablets          | 45.46      | 0        | 0.00          | 0        | 0.00          | 0        | 0.00          | 4,033    | 183,340.18    |
| Vinblastine injection mg/ml,<br>10 ml vial | 240        | 0        | 0.00          | 0        | 0.00          | 0        | 0.00          | 178      | 42,720.00     |
| ABC/3TC 60/30 mg, 60<br>tablets            | 41.25      | 0        | 0.00          | 0        | 0.00          | 0        | 0.00          | 495      | 20,418.75     |
| Total cost                                 |            |          | 29,488,779.86 |          | 33,579,853.02 |          | 33,968,211.36 |          | 31,595,635.81 |

# **SRH Commodities**

CMS, in coordination with SIAPS and UNFPA, has conducted a one-year quantification exercise for SRH commodities, including condoms, that informs quantity and budget requirements for budget year April 2013 to March 2014. The total budget proposal estimated after the first-quarter supply planning exercise was around SZL 8,174,816.88 (USD 778,553.99 at the rate of USD 1 = SZL 10.50). This budget comprises product costs for 12 months' consumption, safety stock for lead time and uncertainties, and freight cost. The procurement of SRH commodities, including female and male condoms, is mainly funded by the Government of Swaziland, UNFPA, and the National Emergency Response Council on HIV/AIDS (Global Fund to Fight AIDS, Tuberculosis and Malaria Principal Recipient). Quantity and budget requirements after the first-quarter supply planning exercise are shown in table 2.

|   | Unit          |          | Q2                   |          | Q4                   |          |                      |
|---|---------------|----------|----------------------|----------|----------------------|----------|----------------------|
| Product                                 | cost<br>(SZL) | Quantity | Total costs<br>(SZL) | Quantity | Total costs<br>(SZL) | Quantity | Total costs<br>(SZL) |
| Microvral of<br>28 tablets/1<br>cycle   | 64.48         | 11,835   | 763,153.94           | 0        | 0.00                 | 14,202   | 915,784.73           |
| Ovral of 28<br>tablets/1<br>cycle       | 51.43         | 26,587   | 1,367,316.24         | 14,823   | 762,317.24           | 14,823   | 762,317.24           |
| Postinor of 2 tablets                   | 5.00          | 3,190    | 15,950.00            | 0        | 0.00                 | 2,320    | 11,600.00            |
| Lofeminal of<br>28 tablets/1<br>cycle   | 70.02         | 0        | 0.00                 | 20,544   | 1,438,515.53         | 12,600   | 882,267.12           |
| Norigynon<br>(50 mg + 5<br>mg)/ml, vial | 8.41          | 0        | 0.00                 | 0        | 0.00                 | 8,360    | 70,278.34            |
| Noristerate<br>200 mg/ml,<br>vial       | 8.41          | 0        | 0.00                 | 0        | 0.00                 | 141,000  | 1,185,316.50         |
| Total cost                              |               |          | 2,146,420.17         |          | 2,200,832.78         |          | 3,827,563.93         |

| Table 2: Estimated Quarterly Quantities and Budget for SRH Commodities from April 2013 to |
|---|
| March 2014 after First-Quarter Supply Planning Exercise                                   |

# Methods

A TWG comprising CMS and partners has been established to conduct annual forecasting and demand planning of ART and SRH commodities. The TWG gathered, organized, and analyzed data for supply planning decision making. For ART commodities, the team revised the projected consumption of newly introduced first-line regimens such as tenofovirlamivudine-efavirenz (300/300/600 mg) 30 tablets and zidovudine-lamivudine-nevirapine (300/150/200 mg) 60 tablets. Actual consumption from LMIS data was compared with the previous target set. The current usable stock available and outstanding shipments were also considered in revising the supply plan. The current tender price was used to calculate total cost of commodities and freight.

For SRH commodities, including condoms, the TWG reviewed the service statistics data generated from MOH's Strategic Information Department and quantity issued to facilities over six months (January to June) from RxSolution. Based on the current practice, a decision was made to review forecast consumption of all SRH commodities. Available stock at the end of July 2013 and outstanding shipments were taken from RxSolution. Price was taken from the new tender awarded recently (changes were made from previous prices).

## Results

From the revision of ART forecast assumptions, which considered the existing situation and used the available current data for decision making, the total cost of three-quarters of HIV commodities has been reduced by SZL 4,192,778.08 (USD 399,312.19 at the exchange rate of USD 1 = SZL 10.50). This is equivalent to a 4.22 percent saving from the original budget amount. Quantity and budget requirements for each quarter after the second-quarter supply planning exercise for ART commodities are shown in table 3.

For SRH commodities, from revising assumptions, considering the existing situation, and using the available current data for decision making, their total cost has been decreased by SZL 6,962,172.92, or 85.2 percent. The reduction is mainly because of the shipment of 10 million condoms coming through the Global Fund and no requirement to buy more male condoms, considering the current consumption rate.

Quantity and budget requirements for each quarter after the second-quarter supply planning exercise for SRH commodities is shown in table 4.

| Table 3: Estimated Quantity and Budget for ART, PMTCT, and OI Commoditie | ies, by Quarter, after Second-Quarter Supply Planning Exercise |
|--|--|
|--|--|

|  |                  | Q2       |                  |          | Q3               | Q4       |                     |
|--|------------------|----------|------------------|----------|------------------|----------|---------------------|
| Product  | Unit price (SZL) | Quantity | Total cost (SZL) | Quantity | Total cost (SZL) | Quantity | Total cost Q4 (SZL) |
| Lopinavir/Ritonavir 100/25 mg, 60 tablets                      | 52.87            | 2,919    | 154,327.53       | 0        | 0.00             | 1,792    | 94,743.04           |
| Lopinavir/Ritonavir 80/20 mg/ml, 60 ml                         | 35.94            | 6,207    | 223,079.58       | 0        | 0.00             | 4,400    | 158,136.00          |
| Nevirapine 10mg/ml, 240 ml                                     | 38.41            | 20,900   | 802,769.00       | 14,249   | 547,304.09       | 14,266   | 547,957.06          |
| Indinavir 400 mg, 180 capsules                                 | 610.50           | 50       | 30,525.00        | 0        | 0.00             | 0        | 0                   |
| Efavirenz 600 mg, 30 capsules                                  | 32.22            | 29,998   | 966,535.56       | 27,149   | 874,740.78       | 25,632   | 825,863.04          |
| Tenofovir/Lamivudine 300/300mg, 30 tablets                     | 45.46            | 4,784    | 217,480.64       | 3,885    | 176,612.10       | 4,033    | 183,340.18          |
| Tenofovir/Lamivudine/Efavirenz 300/300/600 mg, 30 tablets      | 109.35           | 152,614  | 16,688,340.90    | 94,338   | 10,315,860.30    | 95,461   | 10,438,660.35       |
| Zidovudine/Lamivudine 300/150 mg, 60 tablets                   | 61.51            | 49,345   | 3,035,210.95     | 18,076   | 1,111,854.76     | 26,061   | 1,603,012.11        |
| Zidovudine/Lamivudine/Nevirapine 300/150/200<br>mg, 60 tablets | 73.01            | 145,548  | 10,626,459.48    | 53,024   | 3,871,282.24     | 59,336   | 4,332,121.36        |
| Zidovudine/Lamivudine/Nevirapine 60/30/50 mg, 60 tablets       | 36.55            | 47,774   | 1,746,139.70     | 24,339   | 889,590.45       | 24,525   | 896,388.75          |
| Lamivudine 10 mg/ml, 240 ml                                    | 21.00            | 164      | 3,444.00         | 54       | 1,134.00         | 54       | 1,134.00            |
| Vinblastine injection mg/ml, 10 ml vial                        | 240.00           | 280      | 67,200.00        | 0        | 0.00             | 168      | 40,320.00           |
| Lopinavir/Ritonavir 200/50 mg, 120 tablets                     | 229.69           | 0        | 0                | 12,524   | 2,876,637.56     | 10,651   | 2,446,428.19        |
| Ritonavir 100 mg, 84 capsules                                  | 62.19            | 0        | 0                | 333      | 20,709.27        | 0        | 0                   |
| Didanosine 250 mg, 30 capsules                                 | 136.69           | 0        | 0                | 1,743    | 238,250.67       | 0        | 0                   |
| Didanosine 400 mg, 30 capsules                                 | 181.92           | 0        | 0                | 995      | 181,010.40       | 0        | 0                   |
| Abacavir 60 mg, 60 tablets                                     | 79.9             | 0        | 0                | 920      | 73,508.00        | 402      | 32,119.80           |
| Nevirapine 10 mg/ml, 25 ml                                     | 22               | 0        | 0                | 175,868  | 3,869,096.00     | 47,056   | 1,035,232.00        |
| Stavudine/Lamivudine/Nevirapine 12/60/100 mg,<br>60 tablets    | 61.4             | 0        | 0                | 10,733   | 659,006.20       | 6,603    | 405,424.20          |
| Nevirapine 200 mg, 60 tablets                                  | 23.58            | 0        | 0                | 10,841   | 255,630.78       | 0        | 0                   |
| Stavudine 30 mg, 60 tablets                                    | 19.5             | 0        | 0                | 3,055    | 59,572.50        | 2,751    | 53,644.50           |
| Tenofovir 300 mg, 30 tablets                                   | 38.85            | 0        | 0                | 4,849    | 188,383.65       | 3,603    | 139,976.55          |

|   |                  |          | Q2               |          | Q3               |          | Q4                  |
|---|------------------|----------|------------------|----------|------------------|----------|---------------------|
| Product   | Unit price (SZL) | Quantity | Total cost (SZL) | Quantity | Total cost (SZL) | Quantity | Total cost Q4 (SZL) |
| Lamivudine 150 mg, 60 tablets   | 19.3             | 0        | 0                | 12,164   | 234,765.20       | 7,462    | 144,016.60          |
| Stavudine/Lamivudine/Nevirapine 30/150/200<br>mg, 60 tablets          | 43.57            | 0        | 0                | 2,723    | 118,641.11       | 4,629    | 201,685.53          |
| Zidovudine 300 mg, 60 tablets   | 49.62            | 0        | 0                | 15,367   | 762,510.54       | 10,149   | 503,593.38          |
| Abacavir 300mg, 60 tablets  | 103.11           | 0        | 0                | 7,021    | 723,935.31       | 5,309    | 547,410.99          |
| Tenofovir/Lamivudine/Nevirapine 300/300/200<br>mg, 30 co-pack tablets | 83.6             | 0        | 0                | 8,691    | 726,567.60       | 0        | 0                   |
| Zidovudine/Lamivudine 60/30 mg, 60 tablets                            | 21.91            | 0        | 0                | 8,869    | 194,319.79       | 7,109    | 155,758.19          |
| Doxorubicin (Premixed) injection 50 mg/ml, 2.5 ml                     | 325              | 0        | 0                | 941      | 305,825.00       | 426      | 138,450.00          |
| Co-trimoxazole 120 mg, 100 tablets                                    | 8.4              | 0        | 0                | 23,940   | 201,096.00       | 15,591   | 130,964.40          |
| Co-trimoxazole 48 0mg, 1000 tablets                                   | 56.07            | 0        | 0                | 2,422    | 135,801.54       | 0        | 0                   |
| Abacavir/Lamivudine 60/30 mg, 60 tablets                              | 41.25            | 0        | 0                | 0        | 0                | 495      | 20,418.75           |
| Bleomycin injection 15 units vial                                     | 292              | 0        | 0                | 0        | 0                | 719      | 209,948.00          |
| Co-trimoxazole 960 mg, 1000 tablets                                   | 199              | 0        | 0                | 0        | 0                | 27,583   | 5,489,017.00        |
| Total   |                  |          | 34,561,512.34    |          | 29,613,645.84    |          | 30,775,763.97       |

|  | Unit          |          | Q2                  | Q3 Q4    |                     |          |                     |
|--|---------------|----------|---------------------|----------|---------------------|----------|---------------------|
| Product                                | cost<br>(SZL) | Quantity | Total cost<br>(SZL) | Quantity | Total cost<br>(SZL) | Quantity | Total cost<br>(SZL) |
| Postinor of 2 tablets                  | 18.00         | 2,917    | 52,506.00           | 870      | 15,660.00           | 870      | 15,660.00           |
| Ovral of 28<br>tablets/1 cycle         | 6.04          | 27,543   | 166,359.72          | 14,823   | 89,530.92           | 14,823   | 89,530.92           |
| Microvral of 28<br>tablets/<br>1 cycle | 18.00         | 0        | 0.00                | 7,324    | 131,832.00          | 4,500    | 81,000.00           |
| Lofeminal of 28<br>tablets/<br>1 cycle | 6.95          | 0        | 0.00                | 28,632   | 198,992.40          | 12,600   | 87,570.00           |
| Noristerate 200<br>mg/ml, vial         | 1.36          | 0        | 0.00                | 118,100  | 160,616.00          | 45,000   | 61,200.00           |
| Female condom<br>pieces                | 0.60          | 0        | 0.00                | 0        | 0.00                | 68,250   | 40,950.00           |
| Depo-Provera 150<br>mg/ml, vial        | 0.70          | 0        | 0.00                | 0        | 0.00                | 19,700   | 13,790.00           |
| Norigynon (50 mg<br>+ 5 mg)/ml, vial   | 0.85          | 0        | 0.00                | 0        | 0.00                | 8,760    | 7,446.00            |
| Total                                  |               |          | 218,865.72          |          | 596,631.32          |          | 397,146.92          |

| Table 4: SRH Commodities Estimated Quantity and Budget, by Quarter, after Second-Quarter |
|--|
| Supply Planning Exercise   |

In the second quarter, 48.3 percent of the cost is attributed to tenofovir/lamivudine/efavirenz (TLE) (300/300/600 mg) 30 tablets (figure 2), which is the preferred first-line regimen highly recommended by the World Health Organization (WHO).





In the third quarter, 34.8 percent of the cost is attributed to TLE (300/300/600 mg) 30 tablets (figure 3).



Figure 3: Third-quarter budget proportion of ART commodities (FY 2013/14)

And in the fourth quarter, 33.9 percent of the cost is attributed to TLE (300/300/600 mg), 30 tablets (figure 4).



Figure 4: Fourth-quarter budget proportion of ART commodities (FY 2013/14)

For SRH commodities, in the second quarter 76.0 percent of the cost is attributed to the oral contraceptive Ovral of 28 tablets (figure 5).



Figure 5: Second-quarter budget proportion for SRH commodities after second-quarter supply plan

In the third quarter, Lofeminal of 28 tablets, another oral contraceptive, constitutes 33.4 percent of the cost (figure 6).



Figure 6: Third-quarter budget proportion for SRH commodities after second-quarter supply plan



And in the fourth quarter, 22.5 percent of the cost is attributed to Ovral (figure 7).



### DISCUSSION AND WAY FORWARD

The supply planning exercise was found to be instrumental to informing the procurement of health commodities. TDF/3TC/EFV (300/300/600 mg) of 30 tablets, which is the preferred first-line ART regimen highly recommended by WHO, constitutes the largest proportion of the ART budget.

This exercise has shown that with time the proportion of TDF/3TC/600 mg of 30 tablets is increasing whereas AZT/3TC/NVP 300/150/200 mg of 60 tablets is decreasing. Therefore, it is important to closely follow the stock situation of these ARVs and establish good communication with suppliers to ensure 100 percent availability. Regular updating of supply plans every quarter will allow use of existing stock, actual consumption, and outstanding orders to inform procurement decisions, thus ensuring lifesaving products will be continuously available without interruption. Regular supply planning has also enabled the MOH to avoid wasteful procurement and hence save money. During the second-quarter supply planning of ART commodity a saving of SZL 4,192,778.08 (USD 399,312.19) has been recorded.

MOH/CMS, in collaboration with partners like SIAPS and CHAI, will continue supporting quarterly supply plans to bring the right product at the right time in the right quantity into the country. This will ensure continuous availability and accessibility of lifesaving products. This regular supply planning exercise is also highly recommended for procurement planning of general essential medicines.