USAID MEDICINES, TECHNOLOGIES, AND PHARMACEUTICAL SERVICES (MTaPS) PROGRAM

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Part 2: Guidance for Estimating Expected Financial Outlays for A Defined Pharmaceutical Benefits Package

June 2020

USAID
FROM THE AMERICAN PEOPLE

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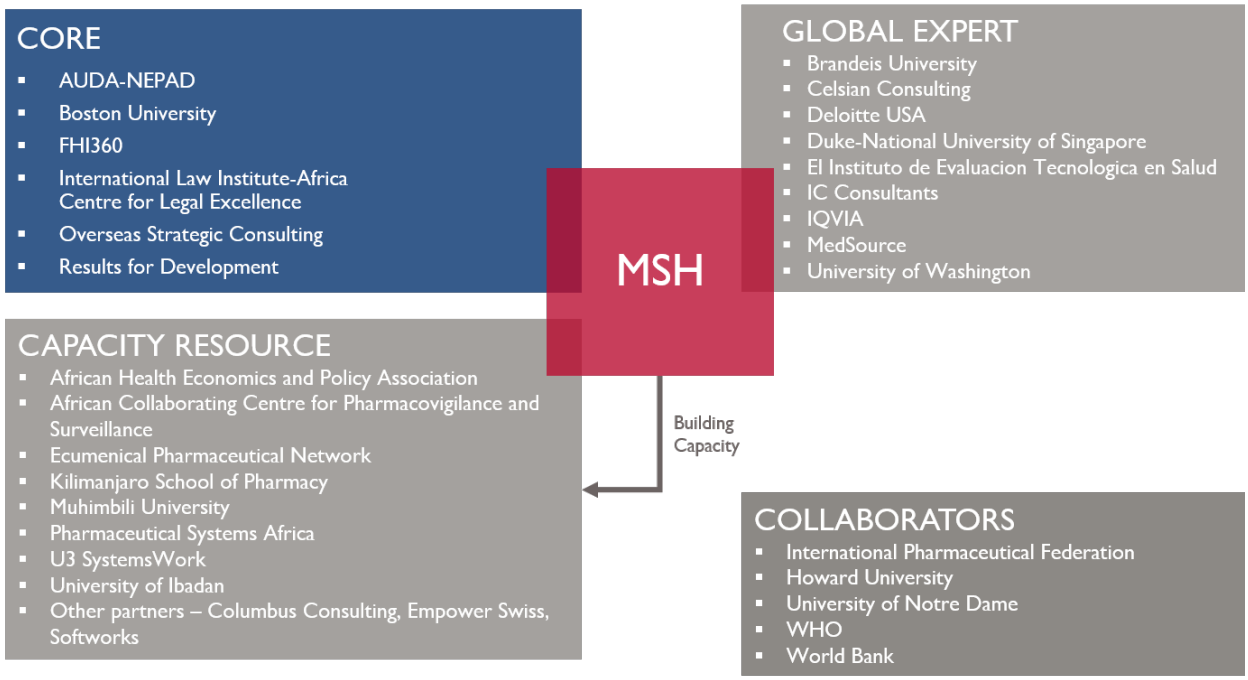
About the USAID MTaPS Program

The USAID Medicines, Technologies, and Pharmaceutical Services (MTaPS) Program enables low- and middle-income countries to strengthen their pharmaceutical systems, which is pivotal to higher-performing health systems. MTaPS focuses on improving access to essential medical products and related services and on the appropriate use of medicines to ensure better health outcomes for all populations. The program brings expertise honed over decades of seminal pharmaceutical systems experience across more than 40 countries. The MTaPS approach builds sustainable gains in countries by including all actors in health care—government, civil society, the private sector, and academia. The program is implemented by a consortium of global and local partners and led by Management Sciences for Health (MSH), a global health nonprofit.

The MTaPS Consortium



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PROJECT SUMMARY

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MTaPS Partners	**Core Partners**	Boston University, FHI 360, Overseas Strategic Consulting, Results for Development, International Law Institute-Africa Centre for Legal Excellence, NEPAD
	Global Expert Partners	Brandeis University, Deloitte USA, Duke-National University of Singapore, El Instituto de Evaluacion Technologica en Salud, IC Consultants, Imperial Health Sciences, MedSource, QuintilesIMS, University of Washington
	Capacity Resource Partners	African Health Economics and Policy Association, Ecumenical Pharmaceutical Network, U3 SystemsWork, University of Ibadan, University of Ghana's World Health Organizations (WHO) Pharmacovigilance Collaborating Center, Kilimanjaro School of Pharmacy, Muhimbili University, Pharmaceutical Systems Africa
	Collaborators	International Pharmaceutical Federation, Howard University, University of Notre Dame, WHO, World Bank

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ACRONYMS AND ABBREVIATIONS

ANC	antenatal care
LMICs	low- and middle-income countries
MOHFW	Ministry of Health and Family Welfare
STI	sexually transmitted infection
UHC	universal health coverage
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
WHO	World Health Organization

CONTENTS

1. EXECUTIVE SUMMARY

The report is the second in a two-part series. The first report reviewed existing guidance and tools for estimating financial outlays for defined pharmaceutical benefits coverage. In that report, we reviewed guidance and tools in use within and outside of Asian countries. The current report's objective is to develop tailored guidance for estimating expected financial outlays for a defined pharmaceutical benefits package. As a result, pharmaceutical benefits package costing requires a bottom-up costing approach to build each pharmaceutical package attached to each disease or health condition following the country treatment guidelines. Several procedures can be undertaken for pharmaceutical benefits package costing, but in general, the following steps can serve as a guide: define and categorize the full health benefits package; establish the pharmaceutical benefits package costing team and responsibilities; configure the OneHealth Costing Tool for pharmaceutical benefits package costing; assemble key documents, key indicators, and information on drug unit costs; draft costing assumptions for pharmaceuticals based on standard treatment guidelines; and develop cost scenarios.

2. BACKGROUND

All countries, regardless of development status, face challenges regarding the allocation of limited resources to achieve universal health coverage (UHC). This challenge is especially pressing for low- and middle-income countries (LMICs) as they transition from reliance on external donors to domestic funding. For countries in the Asia region to improve access to medicines, move toward self-reliance, and ultimately meet their UHC objectives (equitable access to quality health services and protection from financial risk), countries must place a greater emphasis on transparency, governance, evidence-based decision making, and local capacity building to improve resource allocation and efficiencies in the system.

Pharmaceutical systems encompass a set of interdependent, multistep activities that involve numerous stakeholders. This complexity, coupled with the large amounts of money involved, leaves pharmaceutical systems susceptible to mismanagement and corruption. Poor governance in the pharmaceutical sector and weak regulatory capacity and processes can diminish access to pharmaceutical products, drive up medicine prices, and waste scarce resources. Additionally, these weaknesses can harm individuals (e.g., by allowing substandard or falsified products to enter markets). Similarly, inadequate monitoring of new medicines can result in missing critical evidence on adverse events among patients.

Countries without evidence-informed systems for setting health coverage priorities are at greater risk of allocating resources poorly. They might develop broad or ill-defined benefits packages, procure unsafe or unnecessary medical technologies and medicines, or incentivize providers to use high-cost technology and medicines without proven health benefits. These factors can all contribute to higher health care costs.

Finally, in many health systems, pharmaceutical spending is growing faster than other types of health spending (e.g., human resources, health information systems). This further highlights the need to purchase health commodities based on their value in improving overall health outcomes relative to their price, instead of solely looking at the price. Taking a value-based approach to pharmaceutical purchasing would help countries slow health spending escalation without sacrificing access to safe and reliable medicines.

3. OBJECTIVES

This report's objective is to develop tailored guidance for estimating expected financial outlays for a defined pharmaceutical benefits coverage scheme.

The report is the second in a two-part series. The first report was a review of existing guidance and tools for estimating financial outlays for defined pharmaceutical benefits coverage. In that document, we reviewed such guidance and tools in use within and outside of Asian countries. We evaluated existing and forthcoming tools to determine whether there was value in consolidating and/or modifying them. After reviewing 34 costing tools and costing studies, our recommendation to support pharmaceutical benefits package costing and forecasting is the OneHealth Tool.

In this report, we develop step-by-step guidance for using the OneHealth Tool. By applying a concrete example, we demonstrate how to estimate expected financial outlays for a pharmaceutical package and how to explore a variety of coverage scenarios—such as different covered populations, eligibility scenarios, and sets of pharmaceutical services.

4. RATIONALE AND JUSTIFICATION

The report is intended to equip policymakers, policy analysts, and costing practitioners in LMICs with technical guidance for planning and implementing the costing of a pharmaceutical benefits package. It provides step-by-step instructions for designing and costing a pharmaceutical package for specific diseases or health conditions; building scenarios; developing data collection tools; collecting and analyzing cost data; and using the results to support related technical or policy discussions (e.g., UHC policy implementation).

Costing a pharmaceutical benefits package is fundamental to understanding how much public and private payers will spend on a given pharmaceutical coverage scenario, given a series of assumptions on disease incidence, health care utilization, and cost-sharing among eligible populations; variations in pricing for different treatments; and expected adherence by providers to standard treatment guidelines. Costing can also help policymakers understand how much health spending is expected to change under a variety of scenarios for new or revised pharmaceutical coverage schemes.

5. DEFINING A PHARMACEUTICAL BENEFITS PACKAGE

A pharmaceutical benefits package is defined as an explicit list of medicines and related commodities selected for the treatment of an explicit list of health interventions for eligible beneficiaries that are eligible for prescribing, dispensing, and reimbursement and can be paid for by the pooled funds of the health system.[1] It is usually a subset of the health benefits package. Managed pharmaceutical benefits are a collection of capabilities devoted exclusively to maximizing the efficiency, effectiveness, and oversight of pharmaceutical programs and encompass the selection of optimal lists of medicines; provider engagement at the moment of care; operational efficiency; cost containment (e.g., initial of costing of package and

[1] Rankin J. Gremillion M, Eghan K. (2015). Management of Medicines Benefit Programs in Low-Income Settings: Adapting Approaches from High-Income Settings. Management Sciences for Health.

monitoring cost to ensure alignment and containment and adjusting to include innovative or remove less optimal medicines); financial soundness and sustainability; and improvements in patient outcomes.[2]

From the definition above, we will use the explicit list of health interventions as a starting point for this illustrative pharmaceutical benefits package costing. We will use the list of health interventions to build a pharmaceutical package and further explain the costing process and scenario building. We assume that defined interventions with be offered by defined delivery channels and that gatekeeping and referral mechanisms will be respected during service delivery. A focus on primary care contributes to more sustainable, accessible, and equitable health systems that will attain better health outcomes at a lower cost.[3] Another critical premise when defining and costing pharmaceutical benefits packages is that the cost of medicines included in the package must be consistent with the funds available. The ability to cost interventions in accordance with country delivery channels will be useful to support budgeting and policy implementation.

6. ESTIMATING THE LEVEL OF EFFORT NEEDED FOR TOOL ADJUSTMENT/ CONTEXTUALIZATION, CAPACITY BUILDING, AND INSTITUTIONALIZATION

Several factors must be considered to forecast the level of effort required to customize the health interventions in the OneHealth Tool, organize and update the baseline indicators, set the targets, and proceed with the costing for each intervention. Knowledge of and practice with the software by the costing team could reduce the needed level of effort and time. The level of effort also depends on the health programs involved in the costing (e.g., HIV/AIDS, malaria, TB, maternal and child health, diabetes, high blood pressure). Default interventions and data in the tool will usually need to be updated. Costing a national health strategic plan that covers all health programs and health system functions will require more time and effort. The level of effort needed may also depend on the commitment of stakeholders to provide the necessary information (e.g., treatment protocols for health interventions, unit costs, and information needed for the implementation of operational activities).

Given the detailed cost assessment and quantification needed for pharmaceutical benefits package costing, we should assume that substantial working time for the costing team and key stakeholders will be needed. The level of effort needed also depends on the number of interventions in the pharmaceutical benefits package—more interventions implies a higher level of effort.

Training modules for the OneHealth Tool have been developed by the World Health Organization (WHO) and Avenir Health. The standard training usually takes four days. Five days of training gives participants more opportunities to practice.

[2] Rankin J. Gremillion M, Eghan K. (2015). Management of Medicines Benefit Programs in Low-Income Settings: Adapting Approaches from High-Income Settings. Management Sciences for Health.
[3] Hibbard JH, Greene J. (2013). What the evidence shows about patient activation: better health outcomes and care experiences; fewer data on costs. Health affairs, 32(2), 207–214.

7. SELECTING A COSTING METHODOLOGY

Costing pharmaceutical benefits packages is the process of identifying the total financial resources required for drugs and commodities for a disease, intervention, or health condition. Therefore, costing the pharmaceutical benefits package requires an evaluation of the needed quantities and prices of medicines and commodities, which can be done in multiple ways. We describe two common methods for estimating needed quantities below: **time series forecasting** (based on observed drug utilization data) and **clinical guideline evaluation methodology** (based on standard guidelines).

7.1 TIME SERIES FORECASTING

The time series forecasting method is generally used by logistics teams for forecasting drug quantities. Time series forecasting is based on a set of observations, each one recorded at a specific time.[4] It is a conventional reflection of data points measured over a time interval. The observations are ordered in a time series, as each successive observation may be dependent on the previous one. Observational data are commonly used for drug forecasting. A simple moving average of observed consumption is used to estimate the needed future quantities of drugs for certain diseases or health conditions.

For example, to forecast the quantities of second-line TB drugs needed, one would collect the following information from warehouses, health programs, hospitals, or health centers:

- Number of new patients enrolled
- Treatment regimen(s) being used
- Observed duration of treatment for both intensive and continuation phases (days per month × months of treatment)
- Average daily dose per drug
- Observed percent utilization for each drug (the number of patients who use the drug over the total number of patients)

The formula below provides an example of how a logistics team could forecast needed drug quantities for new patients for a specific disease.

> Consumption of new patients = (# of new patients) × (% of utilization) × (average dose) × (duration of treatment in days per month) × (months of treatment).

7.2 CLINICAL GUIDELINE EVALUATION METHODOLOGY

The second method uses standard clinical guidelines as the basis for estimating quantities needed, rather than observed clinical encounter data. This is likely more appropriate for costing a pharmaceutical benefits package, as it enables the costing team to break out and estimate costs for several subcomponents in the pharmaceutical benefits package. For example, this approach would allow the costing team to further break down guidelines for treating malaria into simple and severe cases.

[4] Otnes RK, Enochson, L. (1972). Digital time series analysis. John Wiley & Sons

The clinical guidelines evaluation method allows for different costing perspectives. The costing perspective is the point of view from which costs are estimated (e.g., provider, payer [insurer], patient). For benefits package costing, our recommendation is to perform the costing through the payer's (e.g., insurance scheme's) perspective. Providers can be seen as units providing services, and insurance schemes are the purchasers. Insurance claims can serve as a reference to guide the costing and may help disaggregate cost components by different levels or types of care (e.g., consultation package, laboratory package, drugs and commodities for pharmaceutical benefit package, hospitalization package). Such disaggregation will be useful for policy dialogue with stakeholders involved in UHC implementation or other in country policy implementation.

The National Academy of Medicine defines clinical practice guidelines as "statements that include recommendations, intended to optimize patient care, that are informed by a systematic review of evidence and an assessment of the benefits and harms of alternative care options."[5] Although clinical guidelines could be found in published literature reviews or books, when it comes to benefits package or pharmaceutical benefits package costing, the best reference document to use is the country's own clinical guidelines that reflect the country's treatment standards for most diseases, taking into account the local infrastructure and drug availability.

The following is a list of information and documents that should be identified for pharmaceutical or other benefits package costing using a clinical guidelines approach:

- Regulations on health services costs, including any regulations for private-sector providers. These regulations might provide information on the costs of hospital or health center diagnostic and laboratory services.

- Cost details by the level of the health system or delivery channel (e.g., health center, regional/district hospital, referral hospital, private-sector clinic or hospital). Costing by delivery channel should specify costs based on the treatment guidelines at the hospital or health center level. Treatment of malaria might use different treatment guidelines depending on whether one is in a hospital or in a health center, for example.

- Clinical guidelines for program-funded diseases such as malaria, TB, or HIV/AIDS. For these programs, it will be easier to get detail about the accurate treatment guidelines without consulting experts for the drug and unit costs.

- Clinical guidelines for non-program-funded diseases and any recent addenda for specific diseases. (Clinical guidelines might include revisions to some treatment protocols. For example, injectable or rectal artesunate has recently been strongly recommended by WHO for children between 6 months and 6 years prior to referral, when they present with danger signs such as neurological change, abnormal breathing patterns, or persistent vomiting. This new guideline may be applicable in some countries but not yet reflected in a country's national treatment guidelines.) For these diseases, the costing team will need to reconcile treatment guidelines with input from various clinical experts.

- The country's essential medicines list with associated sales prices.

[5] Wyatt KD, Stuart LM, Brito JP, Leon BC, Domecq JP, Prutsky, GJ, Montori VM. (2014). Out of Context: Clinical Practice Guidelines and Patients With Multiple Chronic Conditions, A Systematic Review. Medical care, 52, S92–S100.

For this costing approach, it is typically very helpful to involve various medical specialists to interpret and confirm current treatment protocols/guidelines.

8. STEPS IN COSTING PHARMACEUTICAL BENEFITS PACKAGES

Several approaches can be undertaken for pharmaceutical benefits package costing. In general, the following steps can serve as a guide: define and categorize the full health benefits package; establish the pharmaceutical benefit package costing team and responsibilities; configure the OneHealth Costing Tool for pharmaceutical benefits package costing; assemble key documents, key indicators, and information on drug unit costs; draft costing assumptions for pharmaceuticals based on standard treatment guidelines; and develop cost scenarios.

8.1 DEFINE AND CATEGORIZE THE FULL HEALTH BENEFITS PACKAGE

This section outlines several key considerations for undertaking a pharmaceutical benefits package costing exercise after the methodology has been selected. The first step is to confirm and document the overall service delivery benefits package that the population is entitled to—the full set of health services to be purchased from health care providers using pooled funds. Table 1 shows a simplified benefits package as an example to be referred to throughout the report. While some countries do not yet have an overall health benefits package, ideally this should be a prerequisite for costing the pharmaceutical benefits package. Ideally, pharmaceuticals should be considered a component of a holistic treatment and prevention benefit package and not analyzed in isolation. In some countries, developing the full services package may not be a feasible first step; the pharmaceutical package itself could be the entry point for priority setting. Nonetheless, accurate cost projections will still require estimates of the population in need and disease incidence for the conditions being treated with pharmaceutical interventions.

We suggest grouping health interventions by disease groups for the reasons outlined below. This can be done using various coding mechanisms, such as serial codes, ICD10 classification codes, or diagnostic-related grouping. Grouping service benefits by specialty (e.g., internal medicine, pediatrics, obstetrics and gynecology, orthopedic surgery) can be a helpful way to engage policymakers, donors, and specialists in the costing process. For example, a donor such as UNFPA might be more interested in providing technical support for the costing of obstetrics and gynecology-related pharmaceuticals or UNICEF might support costing of interventions related to pediatrics/child health if these interventions are dissociated from others. Grouping the benefits package is also useful to engage specialists such as gynecologists, pediatricians, or surgeons as key informants to the costing process.

Table 1: Sample case study benefits package

Benefits Package	Delivery channel		
	Health Center	District Hospital	Central Hospital
1 Internal medicine			
1.1 Arterial hypertension			
1.1.1 Clinical screening	✔	✔	✔
1.2 Malaria			

Table 1: Sample case study benefits package			
Benefits Package	**Delivery channel**		
	Health Center	**District Hospital**	**Central Hospital**
1.2.1 Simple malaria for adults (excluding pregnant women)	✓		
1.2.2 Severe malaria for adults (excluding pregnant women)		✓	✓
1.2.3 Simple malaria for pregnant women	✓		
1.2.4 Severe malaria for pregnant women		✓	✓
2 Pediatrics			
2.1 Malnutrition			
2.1.1 Management of moderate acute malnutrition	✓		
2.1.2 Management of severe malnutrition		✓	✓
2.2 Malaria			
2.2.1 Simple malaria	✓		
2.2.2 Severe malaria		✓	✓
2.3 Diarrhea			
2.3.1 Simple diarrhea	✓		
2.3.2 Severe diarrhea		✓	✓
3 Obstetrics and gynecology			
3.1 Contraceptive services			
3.1.1 Pill	✓		
3.1.2 Injectable (DMPA)	✓		
3.1.3 IUD	✓		
3.1.4 Implant	✓		
3.2 Pregnancy			
3.2.1 Antenatal care (ANC)	✓		
3.2.2 Vaginal delivery/natural childbirth	✓	✓	✓
3.2.3 Cesarean delivery		✓	✓
3.3 Management of sexually transmitted infections (STIs)			
3.3.1 Treatment of syphilis	✓	✓	
3.3.2 Treatment of chlamydia	✓	✓	
3.3.3 Treatment of chancroid	✓	✓	
4 Ophthalmology			
4.1 Conjunctivitis			
4.1.1 Infectious conjunctivitis	✓	✓	
4.1.2 Neonatal ophthalmia	✓	✓	✓
4.2 Glaucoma			
4.2.1 Surgical management of glaucoma		✓	✓
5 Orthopedic surgery			
5.1.1 Humerus fracture			
5.1.1 Femur fracture			✓

8.2 ESTABLISH THE PHARMACEUTICAL BENEFIT PACKAGE COSTING TEAM AND ASSIGN RESPONSIBILITIES

Once the overall benefits package has been defined, documented, and categorized, stakeholders can be invited to be part of the costing team. It is very important to build trust, confidence, visibility, and transparency with champions and key stakeholders during the costing process. Costing results are

integral to inform policy discussions around UHC, and engaging the right stakeholders during the costing process will facilitate UHC policy implementation.

This document describes the process in a linear fashion for clarity, but in reality this process would be repeated on a regular basis. After creating and filling in the first costing projection, one of the advantages is being able to use the previous projection for updates if there are changes in the treatment protocol, an adjustment of the target population, or a need to update the intervention coverages.

Based on the case study benefits package in table 1, table 2 lays out potential team members for the illustrative costing effort, including content experts (medical specialists), methodology experts (health economists and epidemiologists), champions, and interested stakeholders.

Table 2: Illustrative pharmaceutical benefits package costing team

Table Benefits Package Component	Specialists for Treatment Guideline Setup
1 Internal medicine	
1.1 Arterial hypertension	Cardiologist
1.2 Malaria	Malaria specialist and/or key person from malaria program
2 Pediatrics	
2.1 Malnutrition	Pediatrician and/or key person from nutrition program
2.2 Malaria	Pediatrician
2.3 Diarrhea	Pediatrician
3 Obstetrics and gynecology	
3.1 Contraceptive services	Family planning specialist
3.2 Pregnancy	Gynecologist
3.3 Management of STIs	Gynecologist
4 Ophthalmology	
4.1 Conjunctivitis	Ophthalmologist
4.2 Glaucoma	Ophthalmologist
5 Orthopedic surgery	
5.1 Broken foot	Surgeon

Nonclinical members of the costing team could include a high-level policy maker to serve as a costing process champion, a health economist with OneHealth Tool knowledge to serve as the costing team lead, a health economist support team member, a private-sector provider representative, an epidemiologist or statistician (for the population-in-need estimation and projections), and a pharmacist.

8.3 CONFIGURE THE ONEHEALTH COSTING TOOL FOR PHARMACEUTICAL BENEFITS PACKAGE COSTING

As noted in the introduction, based on the analysis described in the first report in this series we will provide guidance on using the OneHealth Tool for pharmaceutical benefits package costing. (Readers can refer to part 1 of this report series for a detailed appraisal of various costing tools.) OneHealth is one of the most flexible costing and projection tools for users and is designed in modular form, which allows more integrated costing of health interventions. The tool was used for the Bangladesh Shasthyo

Surokhsha Karmasuchi intervention to assist the Ministry of Health and Family Welfare (MOHFW) with piloting the social health protection scheme.[6]

Because the OneHealth Tool was designed to be used in many countries and for multiple purposes, the tool's developers provided predefined default health interventions and indicators. To use the tool for costing a pharmaceutical benefits package, users must first customize the tool to fit their own needs. For more information about the step-by-step process for using the tool, refer to the tool user manual at https://avenirhealth.org/software-onehealth.php.

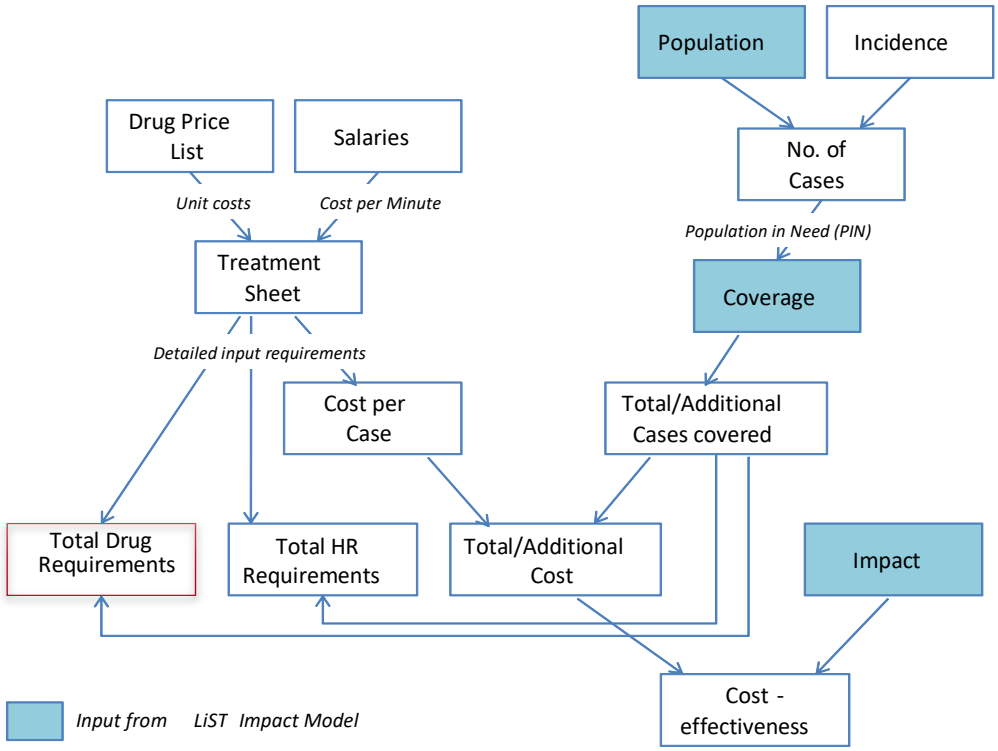
OneHealth has various menus for editing data and using features. A first step in configuring the tool is to define and customize disease groupings. The user may need to shift interventions from the preset defaults to other disease groups relevant to their country. They may also need to merge interventions into a new disease group. For example, for the pediatrics disease group listed in table 1, the user can move interventions from the nutrition, child health, or immunization program; assign them to pediatrics; and treat the interventions as a joint disease. Newborn care interventions could be shifted from the reproductive health program default into the child health module if this is where the diseases for those interventions would sit within the country's benefits package. Table 1 can be used to guide the relevant diseases group customization in the user's configuration of the OneHealth Tool.

If default disease names or health program name do not match the names in the country's benefits package list or health program, our recommendation is to use the "change default intervention names" function in the tool to rename the interventions. This will help local stakeholders understand and interpret the results for their local context. For example, one default program in the tool is "maternal, newborn and reproductive health", but in the application of the tool in Bangladesh, the relevant program name was different. Therefore, to make policymakers comfortable, the user should update the program name to fit with the country program name.

The tool comes equipped with predefined defaults for standard treatment protocols that include pharmaceutical packages for some interventions; this can facilitate the costing process. The user can easily adjust these as needed to align with national protocols or create new clinical interventions within the model if these are not included in the defaults. If preferred, the user can also delete the standard defaults and replace them with national protocols. Note that customizing treatment guidelines is the most challenging part of the costing process with the OneHealth Tool and can be time consuming. The costing team should be aware of this and anticipate the time and expertise needed.

Figure 1 shows the various components influencing the cost of a package of services and how their modules within the OneHealth Tool fit together. Modules related to the Population in Need, Target Population, and Coverage (described in the following sections) are shown on the right side of the figure. Modules related to the cost of different inputs are shown on the left side. "Total drug requirements," the orange box on the lower left, is the output we are aiming to estimate.

[6] Ahmed S, Hasan MZ, Ahmed MW et al. Evaluating the implementation related challenges of *Shasthyo Suroksha Karmasuchi* (health protection scheme) of the government of Bangladesh: a study protocol. *BMC Health Serv Res* 18**,** 552 (2018). https://doi.org/10.1186/s12913-018-3337-x



Source: OneHealth intervention treatment assumptions

Figure 1: Relationship among health service modules in the OneHealth Tool

The determinants of intervention costs are the number of people receiving the intervention and the quantity and price of resources required to deliver the intervention per person. To calculate the number of people receiving the services, OneHealth includes data entry fields for population, target population, population in need, and coverage. All four must have data values for the tool to estimate the number of people receiving the intervention by year.

POPULATION

The overall demographic parameters for the population are entered into the "Demproj" module of the OneHealth Tool. Country-specific defaults are provided but usually will need adjustment by the user.

Many countries do not target the pharmaceutical benefits package for the total population, but rather start implementing a benefits policy focusing on specific sub-populations. In this case, the population setting will be different from the default in the OneHealth Tool and different from the national health strategic plan or particular health program strategic plan. For example, the MOHFW social health protection scheme (Shasthya Surokhsha Karmasuchi) first targeted the below-poverty line population, which was estimated to be 48 million people (31.5% of the total population) as of 2012 (Bangladesh Health Care Financing Strategy 2012). Using this example, the user should carefully update the population by age, group, and gender within the focus population, under the assumption that morbidity will remain the same in the focus population as in the general population. If not, then the costing team lead will need to obtain updated information on disease prevalence for the focus population. (Our

suggestion is to assume that morbidity will remain the same in the focus population as in the general population to avoid estimating prevalence rates for each population group.) To update the population in the OneHealth Tool, users should click on "Impact modules", "Demproj" and "Demographic data" to see the groups. After that, users can organize the data in Excel and paste into the tool.

TARGET POPULATION

Target population is the sub-population (typically age and gender groups) that will receive the intervention. There are global defaults available in the software for each intervention. Examples of a target population include pregnant women, adolescents, children aged < 1 month, children aged 1–59 months, and total population. The user can select from the drop-down list of default populations or specify the target population of each intervention (see the OneHealth user manual at https://spectrummodel.zendesk.com/hc/en-us/articles/216764768-OneHealth-Tool-manual). The custom target population is available for custom interventions that the user has added to the tool and are not a part of the default list of OneHealth interventions.

POPULATION IN NEED

The population in need is the share of the target population that requires the intervention per year. For most preventive care interventions, the share will be 100%. For example, ANC will be required for all pregnant women. The population in need is determined by the incidence and prevalence of conditions and treatment guidelines. Assuming that morbidity will remain the same in the focus population as in the general population will facilitate the use of national (country) incidence and prevalence statistics to estimate the number of people in need of treatment. In some instances, the population in need may be greater than 100% if repeated treatment is necessary, as in the management of diarrhea with ORS among children aged 0–59 months. If we put 100% of the population in need, each child will on average receive the intervention once per year. However, in many settings, the incidence of diarrhea may be greater than 100%. If the incidence of diarrhea in children was 3.5 episodes per year, the population in need would then be 350%. If 1% of all diarrhea cases were estimated to be severe, the population in need for treatment of severe diarrhea would be 3.5% (350% x 1%).

For some interventions, it may be difficult for countries to get reliable estimates of disease incidence and prevalence. For example, it may be difficult to get incidence and prevalence for interventions like femur fractures, surgical management of glaucoma, neonatal ophthalmia, or infectious conjunctivitis. In such cases, specialist and expert opinion may be helpful. When in doubt about what value to enter for the population in need, go into the target population editor and review what target population has been selected. Incidence and prevalence may vary based on the selected target population.

COVERAGE

The coverage measure refers to how many people, out of the population in need, are actually receiving the intervention. This is an indicator commonly measured in household surveys such as Demographic and Health Surveys and Multiple Indicator Cluster Surveys. For example, among children with a fever during the past two weeks, how many were taken to a health provider for treatment? In the current version of OneHealth, coverage is entered via the coverage editor (see the OneHealth user manual).

There are three columns (Baseline coverage, Target coverage, and Frontier coverage) in the generic coverage editor. Because scale-up of a program may be gradual, estimates around the scale up of coverage should be discussed with policymakers. The coverage module in the tool allows the costing team to build scenarios. For example, one scenario could be 100% coverage for all interventions. The second scenario could be starting from 5% coverage the first year and step-by-step scale-up. The OneHealth Tool allows for data adjustment after one or two years of implementation or when there are changes in some treatment guidelines, allowing updates to the projections for more accuracy.

Once the coverage step is completed, the user should be able to see the number of services that will be offered through the benefits package per year per intervention as presented in the formula below:

Number of Services	**=**	**Target population**	**x**	**% Population in need**	**x**	**% Delivery channels**	**x**	**Intervention coverage**

8.4 PREPARE FOR PHARMACEUTICAL BENEFITS PACKAGE INTERVENTION COSTING

Before initiating the costing exercise, the costing team lead should develop a timeline with key responsibilities for each person involved in the process. The main steps should also be drafted and approved by stakeholders. Key documents such the national strategic plan (to inform the targets); documentation of national and international political commitment to implement specific interventions; health programs strategic plans; and health statistics reports (e.g., baseline indicators and baseline coverages, target population, population in need) should be in hand before starting the costing process.

8.5 DRAFT COSTING ASSUMPTIONS FOR PHARMACEUTICALS BASED ON STANDARD TREATMENT GUIDELINES

Next, the team should organize the treatment guidelines in Microsoft Excel (table 3) and send them to the relevant specialists for a first screening. Specialists should review the tables and make any adjustments or comments. The costing team can then adjust the assumptions in the Excel sheet and organize workshops for specialists' input to finalize the treatment assumptions.

During the workshop period, specialists should be divided into working groups based on disease areas. As an example, three weeks were necessary to complete a costing for 85 diseases in Benin and four weeks to complete a costing for 111 diseases in Cameroon. It is suggested to progressively convene specialists to join the costing team to avoid overloading them with data. Pharmacists can be invited to join the costing team after day two or three, once the approved treatment guidelines are ready for them to start working.

As mentioned above, the pharmacists' role is to validate the drug list and, as needed, provide updated unit costs for each drug (package and cost per pill) in the "Unit cost [(XOF) (Year)]" column (table 3). The far-right column "Cost per average case" will be automatically calculated by the software. Pharmacists should also review any drug lists provided by specialists and suggest substitutes if something does not match the national essential drug list or if the drugs are not available in the country.

Table 3: Preorganized treatment guideline for specialists' review								
Vaginal delivery/natural childbirth								
Drug/Supply	**% receiving this aspect of the treatment**	**Notes**	**Number of units**	**Times per day**	**Days per case**	**Units per case**	**Unit cost (XOF) (Year)**	**Cost per average case (XOF) (Year)**
1 Consultation								
Consulting fees/package	100		1	1	1	1		
2 Drugs and commodities								
Rolled cotton	100		1	1	1	1		
Safety box for used syringes, 5 liter	100		0.01	1	5	0.05		
Glucose standard serum 5%, 500cc	30		2	1	2	4		
Oxytocin, inj., 5UI (dire. of work if necessary)	30		1	1	1	1		
Oxytocin, injectable, 10UI (GATPA)	100		1	1	1	1		
Infuser	30		1	1	1	1		
Band-aid (1m)	100		1	1	1	1		
Povidone iodine (green)	100		1	1	1	1		
Bladder catheter	100		1	1	1	1		
Sterile gauze 40x40 cm	100		3	1	1	3		
Gloves, exam, latex, disposable, pair	100		10	1	1	10		
Gloves, surg., latex, disp., sterile, pair	100		6	1	1	6		
Syringe, 10cc with needle	100		2	5	1	10		
Phytonadione (Vitamin K) injectable	100		1	1	1	1		
Misoprostol tab 200mg	100		2	2	1	4		
Methylergometrine	100		1	3	7	21		
Amoxicillin 500mg tab	100		2	2	7	28		
Act/management of childbirth								
Natural childbirth	65		1	1	1	1		
Total cost								

8.6 CONSOLIDATING THE DATA IN THE ONEHEALTH TOOL

The consolidation process is the responsibility of the costing team lead and is described in the following sections. It involves setting up the benefits package in the OneHealth Tool; entering the treatment guidelines; and entering the drugs and commodities unit costs, the target population for each intervention, the population in need, and the coverages. The team lead can enter the data progressively as the specialists and pharmacists confirm the values. When possible, the user should organize disease groups and interventions in the software to reflect the benefits package list as approved by stakeholders in the country.

8.7 PRODUCING COST ESTIMATES FOR THE PHARMACEUTICAL BENEFITS PACKAGE: ENTERING TREATMENT INPUTS

Finally, producing an estimate of the cost of the pharmaceutical benefits package requires the "treatment input" entry in the OneHealth Tool. Once specialists and pharmacists review treatment guidelines, drugs lists, and unit prices, the costing team should use the treatment input editor to enter required data (types of drugs, quantities, unit cost per pill based on market price [for non-program-based drugs] or program unit costs [for health program drugs like family planning products]) for each intervention. The prices entered in this editor should be market prices, not inflation-adjusted prices. (Inflation rates for a particular time period are entered as an overall parameter in the OneHealth configuration and are applied to all cost elements in the projection.) Changes in prices entered in this editor should be based on the belief that market prices will go up or down because of changes in the procurement environment, improved technology, improved negotiation power, etc.

This step consolidates the data in the OneHealth Tool. At the end of this step, users will be able to export the pharmaceutical package and its associated cost for each intervention in the overall benefit package, including the unit price for each pill or regimen and the total cost per pharmaceutical package (see Annex A for the obstetrics and gynecology disease group from the case study interventions in table 1).

Table 4 shows an example of a pharmaceutical package for one specific intervention (ICD code D17) using data from Bangladesh.

Table 4: Pharmaceutical package

ICD Code No			**D 17**			
Sl. No.	**Date of Medicine Supply**	**Vouchers No**	**Name of Medicine**	**Quantity**	**MRP (unit) Price in Taka**	**Total in Taka**
1	1x.0x.20xx	80xx	Tab. P/C 500mg	10	1	10
			Tab. Rolac 10 mg	6	12	72
			Tab. Ostogen D	1	210	210
			Ing. Pantonix	2	90	180
			Inj. Oricef 1 mg.	2	320	640
2	1y.0x.20xx		Tab. P/C 500mg	10	1	10
			Tab. Esoral 20mg	10	5	50
3	1z.0x.20xx		Tab. P/C 500mg	10	1	10
			Tab. Esoral 20mg	10	5	50
			Tab. Rolac 10 mg	10	12	120
Total =						1,352

8.8 BUILDING COST SCENARIOS

With the compiled data, the user can produce a variety of scenarios projecting estimated pharmaceutical package costs to inform discussions on priority setting and budget availability. Constructing these scenarios should involve a sequence of consultations, including data validation with technical counterparts. OneHealth is equipped with intervention and coverage defaults that can be used to simulate rough cost and impact estimates for different scale-up strategies. Users can also adjust the default interventions and coverages and conduct financial gap analysis, using assumptions on GDP growth, expected government revenue and expenditure on health, and expected funding from external sources. The model can indicate the feasibility of reaching the targets set, given financial constraints or

constraints inherent in the existing health system. Based on the policy decisions made, the tool can provide selected scale-up scenarios to the health system modules, and updated coverage estimates can be sent to the impact- and intervention-focused costing modules.

9. CONCLUSION

This report highlights key issues and processes to consider for pharmaceutical benefits package costing using the OneHealth Tool. A few key points are worth emphasizing in conclusion:

- Stakeholder engagement must be part of the costing and planning process. The process of estimating resource needs through a participatory approach can reinforce buy-in among national stakeholders and donors.

- Taking a bottom-up approach to costing—linking costs with the target population, population in need, treatment guidelines, and intervention coverage—supports accountability and transparent information sharing.

- Cost estimation for pharmaceutical benefits is crucial as it can help underline the need to set priorities. Using the OneHealth Tool for pharmaceutical benefits package costing provides an opportunity to strengthen actuarial studies to support decision making and policy implementation. Results from such a costing exercise could be an essential component to feed into the decision making dialogue at all levels.

One critical advantage of building a cost projection in the OneHealth Tool is that users may easily update the data whenever there is a change in the treatment guidelines or policy implementation. The most important factor affecting cost estimations is the estimates of impact on coverage associated with a given benefits package change. Impact estimation or modeling can be a powerful tool for budget negotiations and assist with achieving increased budget allocations.

This report did not address impact analysis; future guidance could address how to connect pharmaceutical benefits package costing with impact modeling; how to use the OneHealth Tool for drug forecasting, which can link cost, quantification, and impact analysis; and how to conduct in-country actuarial studies.

ANNEX A: PHARMACEUTICAL PACKAGE DETAIL AND COST + SERVICES COST

Table 5: Selected services that may be found in a country's benefits package								
3 Obstetrics and gynecology								
3.1 Contraceptive services								
3.1.1 Pill								
Drug/Supply	**% receiving this aspect of the treatment**	**Notes**	**Number of units**	**Times per day**	**Days per case**	**Units per case**	**Unit cost (XOF) (year)**	**Cost per average case (XOF) (year)**
Consultation								
Consultation	100		1	1	1	1	200	200
Drugs and commodities								
Levonorgestrel 0.0375mg, cycle	0		2	1	1	2	1,470	0
Levonorgestrel 0.15mg + Ethinyl estradiol 30 mcg (Microgynon), cycle	100		1	1	12	12	966	11,592
Total cost								**11,792**
3.1.2 Injectable (DMPA)								
Drug/Supply	**% receiving this aspect of the treatment**	**Notes**	**Number of units**	**Times per day**	**Days per case**	**Units per case**	**Unit cost (XOF) (year)**	**Cost per average case (XOF) (year)**
Consultation								
Consultation	100		4	1	1	4	200	800
Drugs and commodities								
Depot-Medroxyprogesterone Acetate 150mg - 3 monthly	40		4	1	4	16	1,342	8,589
Gloves, exam, latex, disposable, pair	100		4	1	1	4	100	400
Povidone iodine, solution, 10%, 5ml per injection	100		4	0	1	0	1,225	-
Syringe, Autodisable SoloShot IX	100		4	1	1	4	120	480
Total cost								**10,269**
3.1.3 IUD								
Drug/Supply	**% receiving this aspect of the treatment**	**Notes**	**Number of units**	**Times per day**	**Days per case**	**Units per case**	**Unit cost (XOF) (year)**	**Cost per average case (XOF) (year)**
Consultation								
Consultation	100		4	1	1	4	200	800
Drugs and commodities								

Intrauterine dispositive	45		1	1	1	1	1,500	675
Gloves, exam, latex, disposable, pair	100		1	1	1	1	100	100
Povidone iodine, solution, 10%, 5ml per injection	100		0.1	1	1	0.1	1,225	122
Insertion Cost	100		1	1	1	1	500	500
Total cost								**2,198**
3.1.4 Implant: Jadell 5 ans								
Drug/Supply	**% receiving this aspect of the treatment**	**Notes**	**Number of units**	**Times per day**	**Days per case**	**Units per case**	**Unit cost (XOF) (year)**	**Cost per average case (XOF) (year)**
Consultation								
Consultation	100		1	1	4	4	200.00159	800
Drugs and commodities								
Gloves, exam, latex, disposable, pair	100		3	1	1	3	100	300
Implant, two rod - 75mg levonorgestrel per rod	100		1	1	1	1	800	800
Lidocaine HCl (in dextrose 7.5%), ampule 2ml	100		2	1	1	2	1,400	2,800
Povidone iodine, solution, 10%, 5ml per injection	100		0.1	1	2	0.2	1,225	245
Syringe, needle + swab	100		2	1	1	2	100	200
Trocar	100		0.1	1	1	0.1	315	32
Insertion S/C	100		1	1	1	1	1,000	1,000
Total cost								**6,176**
3.2 Pregnancy								
3.2.1 Antenatal care (ANC)								
Drug/Supply	**% receiving this aspect of the treatment**	**Notes**	**Number of units**	**Times per day**	**Days per case**	**Units per case**	**Unit cost (XOF) (year)**	**Cost per average case (XOF) (year)**
Consultation								
Consultation fees ANC	100		1	1	8	8	200	1,600
Lab/drugs and commodities								
Echography	100		1	3	1	3	9,000	27,000
GS-RH	100		1	1	1	1	1,000	1,000
RAI (if RH negative)	5		1	1	1	1	2,500	125
Hemoglobin Electrophoresis	100		1	1	1	1	6,000	6,000
TPHA/VDRL	100		1	1	1	1	2,000	2,000
HIV Serology	100	ANC 1+ANC3	1	1	1	1	1,000	1,000
Antigen HBs (Hepatitis B)	100	ANC1	1	1	1	1	7,000	7,000
Anticorps Anti HCV (Hepatitis C)	100		1	1	1	1	7,000	7,000
Toxoplasma Serology	100		1	1	1	1	6,000	6,000

Rubella Serology	100		1	1	1	1	6,000	6,000
Glucose tolerance test	100	ANC1+ANC3	1	1	2	2	1,000	2,000
CBC complete blood count	100		1	1	2	2	3,000	6,000
Urinalysis	100	ANC1+ANC2+ANC3+ANC4	1	1	8	8	1,000	8,000
Rapid diagnostic test for malaria	50	ANC1+ANC2	1	1	2	2	500	500
Speculum for single use	100		2	1	1	2	500	1,000
Gloves, exam, latex, disposable, pair	100		8	1	1	8	100	800
Ferrous Salt + Folic Acid, tablet, 60 + 0.4 mg	100		1	1	196	196	11	2,156
Calcium 500mg	100		1	1	60	60	63	3,780
Sulfadoxine-Pyrimethamine (1dose=3comp)	100		4	1	12	48	200	9,600
Albendazole, tablet, 400mg	100		1	1	1	1	30	30
Tetanus vaccine	100	ANC1	1	1	2	2	2,685	5,370
ANC Notebooks	100		1	1	1	1	200	200
Aspirin 100mg (sachet) Tab	30		1	1	161	161	4	193
IVA-IVL/Frottis cervico-uterin	100	ANC1	1	1	1	1	500	500
Treatment of syphilis (primary and secondary)								
Benzathine benzylpenicillin, powder for injection, 2.4 million IU	0.5		1	1	1	1	188	1
Syringe, needle + swab	0.5		1	1	1	1	100	0
Water for injection, 5ml bulb	0.5		1	1	1	1	38	0
Injection IM cost	100		1	1	1	1	200	200
Total cost								**105,056**
3.2.2 Vaginal delivery/natural childbirth								
Drug/Supply	**% receiving this aspect of the treatment**	**Notes**	**Number of units**	**Times per day**	**Days per case**	**Units per case**	**Unit cost (XOF) (year)**	**Cost per average case (XOF) (year)**
Consultation								
Consulting fees/package	100		1	1	1	1	4,000	4,000
Drugs and commodities								
Rolled cotton	100		1	1	1	1	2,235	2,235
Safety box for used syringes, 5 liter	100		0.01	1	5	0.05	231	12
Glucose standard serum 5%, 500cc	30		2	1	2	4	800	960
Oxytocin, inj., 5UI (dire. of work if nece.)	30		1	1	1	1	90	27
Oxytocin, injectable, 10UI (GATPA)	100		1	1	1	1	90	90
Infuser	30		1	1	1	1	128	38
Band-aid (1m)	100		1	1	1	1	900	900
Povidone iodine (green)	100		1	1	1	1	1,215	1,215
Bladder catheter	100		1	1	1	1	270	270
Sterile gauze 40x40 cm	100		3	1	1	3	85	255

Gloves, exam, latex, disposable, pair	100		10	1	1	10	100	1,000
Gloves, surg., latex, disp., sterile, pair	100		6	1	1	6	100	600
Syringe, 10cc with needle	100		2	5	1	10	100	1,000
Phytonadione (Vitamin K) injectable	100		1	1	1	1	3,488	3,488
Misoprostol tab 200mg	100		2	2	1	4	250	1,000
Methylergometrine	100		1	3	7	21	143	3,003
Amoxicillin 500mg tab	100		2	2	7	28	35	980
Act/management of childbirth								
Natural childbirth	65		1	1	1	1	14,000	9,100
Total cost								**30,175**
3.2.3 Cesarean delivery								
Drug/Supply	**% receiving this aspect of the treatment**	**Notes**	**Number of units**	**Times per day**	**Days per case**	**Units per case**	**Unit cost (XOF) (year)**	**Cost per average case (XOF) (year)**
Consultation								
Anesthesia consultation	100		1	1	1	1	4,000	4,000
Preoperative consultation	100		1	1	1	1	4,000	4,000
Lab/Exam								
NFS + Plaquettes	100		1	1	1	1	3,000	3,000
Urea	100		1	1	1	1	1,000	1,000
Creatinine	100		1	1	1	1	2,500	2,500
Ionogramme	100		1	1	1	1	2,000	2,000
Fasting blood sugar	100		1	1	1	1	1,000	1,000
TP	100		1	1	1	1	2,500	2,500
TCA	100		1	1	1	1	2,500	2,500
Rh factor blood testing	70		1	1	1	1	2,500	1,750
Caesarean kit								
Ringer lactate, solution, 500ml	100		3	1	1	3	780	2,340
Serum sale 0.9%	100		3	1	1	3	600	1,800
Lame de bistouri, N0 15	100		2	1	1	2	40	80
Indwelling urinary catheter	100		1	1	1	1	866	866
Compresses sterile 40x40 cm	100		2	2	1	4	85	340
Red Betadine	100		1	1	1	1	1,225	1,225
Yellow Betadine	100		1	1	1	1	1,460	1,460
Abdominal compresses	100		2	1	1	2	3,600	7,200
Vicryl 2 sert.	100		2	1	1	2	3,368	6,736
Vicryl n° 1 ou 0	100		2	1	1	2	1,478	2,956
Ceftriaxone 1g	100		1	1	1	1	1,883	1,883
Paracetamol 1g IVDL	100		1	1	1	1	3,225	3,225
Oxytocin, injectable, 10IU	100		2	1	5	10	90	900
Misoprostol 200mg	30		3	1	1	3	250	225

Gloves, exam, latex, disposable, pair	100		10	1	1	10	100	1,000
Gloves, surgeon, latex, disposable, sterile, pair	100		2	3	1	6	100	600
Syringe, 10cc with needle	100		2	3	1	6	100	600
Rachianesthesia material								
Syringe, 10cc with needle	90		10	1	1	10	100	900
Gloves, exam, latex, disposable, pair	90		5	1	1	5	100	450
Gloves, surgeon's, latex, disposable, sterile, pair	90		2	2	2	8	100	720
Bupivacaine injectable 0.5% (1 flacon)	90		1	1	1	1	4,984	4,486
Lumbar puncture needle G22 (2)	90		2	1	1	2	278	500
Diazepam injectable 10mg	90		1	1	1	1	143	129
Atropine sulphate, injection, 1mg in 1ml bulb	90		1	1	1	1	38	34
Ephedrine injectable 30mg (2amp)	90		2	1	1	2	276	497
General anesthesia material								
Syringe, 10cc with needle	10		10	1	1	10	100	100
Gas: N2O	10		1	1	1	1	-	-
Gloves, exam, latex, disposable, pair	10		5	1	1	5	100	50
Ketamine 500mg injectable	10		1	1	1	1	848	85
Diazepam injectable 10mg	10		1	1	1	1	143	14
Atropine sulphate, injection, 1mg in 1ml bulb	10		1	1	1	1	38	4
Ranitidine, injectable, 50mg, 3 bulbs	10		3	1	1	3	950	285
Guedel cannula No 3 ou 4	10		1	1	1	1	6,000	600
Suction probe No 12 ou 14	10		2	1	1	2	270	54
Venous pathway material								
Catheter G18	100		2	1	1	2	540	1,080
Infuser	100		2	1	1	2	128	256
Adhesive bandage	100		2	1	1	2	900	1,800
Flacon d'Alcool 1/4 litre	100		1	1	1	1	415	415
Postoperative treatments								
Ringer lactate, solution, 500ml	100		1	3	1	3	780	2,340
Serum glucose 5% 500cc	100		1	3	1	3	800	2,400
Metronidazole inj 500mg	100		1	2	1	2	1,034	2,068
Ampicillin 1g	100		1	2	1	2	231	462
Paracetamol, 1g IVD	100		1	3	1	3	1,725	5,175
Nefopam (Acupan)	100		1	3	1	3	600	1,800
Oxytocin, injectable, 10IU	100		2	1	5	10	90	900
Diclofenac 100mg suppo	100		1	2	7	14	181	2,534
HBPM (Enoxaparin) 0.4ml	100		1	1	7	7	3,900	27,300
Paracetamol, tablet, 500mg	100		2	2	5	20	8	160
Amoxicillin 500mg	100		2	2	7	28	35	980

Metronidazole comp 500mg	100		1	3	7	21	18	378
Methyl Ergometrine 0,125mg	70		1	3	7	21	143	2,102
Intervention/operative								
Cesarean operating room fee	100		1	1	1	1	42,000	42,000
Anesthesia	100		1	1	1	1	10,000	10,000
Hospitalization								
Hospitalization/day (sharing room) - Obstetrics maternity	100		1	1	4	4	2,000	8,000
Transfusion sanguine								
Blood bag (if needed)	100		1	2	1	2	7,000	14,000
Postsurgery assessment								
NFS + Plaquettes	100		1	1	1	1	3,000	3,000
Total cost								**195,744**
3.3 Management of sexually transmitted infections (STIs)								
3.3.1 Treatment of syphilis								
Drug/Supply	**% receiving this aspect of the treatment**	**Notes**	**Number of units**	**Times per day**	**Days per case**	**Units per case**	**Unit cost (XOF) (year)**	**Cost per average case (XOF) (year)**
Consultation								
Consultation	100		0.375	1	1	0.375	4,000	1,500
Drugs and commodities/general treatment								
Procaine benzylpenicillin, Powder for injection, 1g (= 1 million IU) in vial	90		1	1	1	1	203	183
Sterile water, 5ml bulb	90		1	1	1	1	38	34
Syringe, needle + swab	90		1	1	1	1	100	90
Condom, male	90		1	1	10	10	33	297
Drugs and commodities when allergy for penicillin								
Doxycycline, capsule or tablet, 100mg (hydrochloride)	5		1	2	14	28	13	18
Tetracycline, capsule or tablet, 250mg (hydrochloride)	5		2	4	14	112	40	224
Condom, male	5		10	1	1	10	33	17
Total cost								**2,363**
3.3.2 Treatment of chlamydia								
Drug/Supply	**% receiving this aspect of the treatment**	**Notes**	**Number of units**	**Times per day**	**Days per case**	**Units per case**	**Unit cost (XOF) (year)**	**Cost per average case (XOF) (year)**
Consultation								

Consultation	100		0.375	1	1	0.375	4,000	1,500
Acute form (acute salpingitis)–Women								
Vibraveineuse 100mg	60		1	2	3	6	13	47
Amoxicilline + Acide clavulanique 1g	60		1	2	3	6	1,725	6,210
Paracetamol inj 1g	60		1	3	1	3	1,725	3,105
Diclofenac 100mg	60		1	2	7	14	100	840
Glucose standard serum 5% 500cc	60		1	3	1	3	800	1,440
Syringe 10cc	60		1	4	3	12	100	720
Infuser	60		1	1	3	3	128	230
Catheter	60		1	1	1	1	585	351
Adhesive bandage	60		1	1	1	1	900	540
Cotton	60		1	1	1	1	585	351
Amoxicillin 500mg (relay)	60		1	2	10	20	35	420
Doxycycline, comp, 100mg (relay)	60		1	2	21	42	13	328
Diclofenac 100mg (relay)	60		1	2	7	14	100	840
Chronic form–Woman								
Doxycycline, comp, 100mg	10		1	2	21	42	13	55
Diclofenac 100mg	10		1	2	7	14	100	140
For pregnant woman								
Erythromycin, comp, 500mg	5		2	2	10	40	118	236
Mal treatment								
Doxycycline, comp, 100mg	12.5		1	2	15	30	13	49
Diclofenac 100mg	25		2	2	10	40	100	1,000
Erythromycin, comp, 500mg	12.5		1	2	7	14	118	206
Condom, male	25		10	1	1	10	33	83
Total cost								**18,690**
3.3.3 Treatment of gonorrhea								
Drug/Supply	**% receiving this aspect of the treatment**	**Notes**	**Number of units**	**Times per day**	**Days per case**	**Units per case**	**Unit cost (XOF) (year)**	**Cost per average case (XOF) (year)**
Consultation								
Consultation	100		0.375	1	1	0.375	4,000	1,500
Drugs and commodities								
Ceftriaxone 1g	100		1	1	1	1	1,883	1,883
Condom, male	100		1	1	10	10	33	330
Total cost								**3,713**
3.3.4 Treatment of chancroid								
Drug/Supply	**% receiving this aspect of the treatment**	**Notes**	**Number of units**	**Times per day**	**Days per case**	**Units per case**	**Unit cost (XOF) (2019)**	**Cost per average case (XOF) (2019)**

Consultation								
Consultation	100		0.375	1	1	0.375	4,000	1,500
Drugs and commodities								
Ceftriaxone 1g	100		1	1	1	1	1,883	1,883
Condom, male	100		1	1	10	10	33	330
Total cost								**3,713**