



PILOTING A LEAN COSTING APPROACH FOR FAMILY PLANNING AND MATERNAL HEALTH SERVICES

Summary of Key Findings across Public and Private Facilities in Locations in the DRC, Nigeria, and Tanzania

MOMENTUM Private Healthcare Delivery



APRIL, 2024

MOMENTUM works alongside governments, local and international private and civil society organizations, and other stakeholders to accelerate improvements in maternal, newborn, and child health services. Building on existing evidence and experience implementing global health programs and interventions, we help foster new ideas, partnerships, and approaches and strengthen the resiliency of health systems.

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ABBREVIATIONS

ANC	Antenatal Care
CACOVID	Coalition Against COVID-19
ECPs	Emergency Contraceptive Pills
FP	Family Planning
FTE	Full Time Equivalent
IRB	Institutional Review Board
L&D	Labor and Delivery
MH	Maternal Health
MoH	Ministry of Health
NHIS	National Health Insurance Scheme
OCPs	Oral Contraceptive Pills
PNC	Postnatal Care
TB	Tuberculosis
USAID	United States Agency for International Development

SUMMARY

UNDERSTANDING THE COSTS of family planning (FP) and maternal health (MH) services in both the public and private sectors can help decision makers improve healthcare coverage and equity of health outcomes. However, a lack of information about the cost of delivering services, particularly in the private sector, inhibits data-driven decision making on whether and how to include the private sector in government financing efforts. Assessing the true costs of healthcare delivery can often be a prohibitively expensive task to do on a comprehensive or regular basis.¹ To address this, the United States Agency for International Development (USAID)-funded MOMENTUM Private Healthcare Delivery (MOMENTUM) Project piloted a ‘lean’ costing approach to explore the costs and major cost drivers of FP and MH service delivery in the public and private sectors. Piloting this costing approach generated useful findings about the costs of delivering FP and MH services in the public and private sectors at three sites in Nigeria, Tanzania, and the Democratic Republic of the Congo (DRC). This report summarizes key findings from each country and discusses how the results and approach can help inform FP and MH programing.

Key Findings for FP/MH Planning and Programming

- MOMENTUM piloted an approach to capture and compare FP and MH costs and cost drivers in public and private facilities more efficiently; findings from three pilot settings revealed a great degree of variation in costs and cost drivers at public and private facilities by setting.
- The selected for-profit facilities in the pilot often appeared to be underutilized, which subsequently translates to a higher unit cost per service. While the scope of this pilot does not provide insights on quality, equity or affordability, this finding highlights that efforts to increase utilization of existing facilities – including those in the private sector – could help to expand access to services and ensure more cost-effective use of resources.
- The perennially important role of commodity and drug costs emerged in multiple settings, confirming that access to affordable, high-quality products for providers and clients is a critical cost determinant. Ensuring that any commodity/supplies purchasing mechanisms provide all sectors reliable access to affordable and high-quality drugs and supplies would be an important component of sustaining access to FP and MH services.
- While this analysis was conducted as a pilot, the approach shows promise in more affordably capturing granular and comparable site data to identify primary cost drivers for FP/MH services across the public and private sectors.

INTRODUCTION

Country-level decision makers aim to allocate resources within the health system to improve healthcare coverage and equity of health outcomes. Despite a growing recognition that the private sector is an important partner in achieving coverage and equity goals for essential services like FP and MH,² there is little information about the cost of providing FP and MH care in the private sector. A recent systematic review on the cost of public or private MH services from a provider perspective in low- and middle-income countries identified only 22 studies for inclusion, of which only 11 were assessed as high quality.³ Only two of these studies reported on private (for-profit) provider costs; neither included FP results. Without evidence, decisions related to the inclusion of private sector providers in publicly funded health sector programs – such

as national health insurance or Ministry of Health (MoH)-sponsored clinical training and continuing education – are in large part made without a full understanding of potential cost efficiencies of healthcare delivery across sectors, or their implications for national health budgets.

The lack of information on costs and cost drivers of private sector services results in several limitations in resourcing and monitoring the cost of FP/MH services across a mixed health system. It inhibits data-driven decision making on whether and how to include the private sector in government financing efforts, thereby limiting potential expansion or scaling up of FP/MH service delivery in the private sector. The information gap results in an inefficient allocation of subsidies, including by donors. It also limits the ability of private sector professional associations to advocate on behalf of private providers for inclusion in cost-saving programs, such as access to FP commodities from public central medical stores. Further, comparable cost data for providers in both the public and private sectors is important for adequately planning total market approaches that leverage the contributions of both sectors. However, often the approaches and assumptions used to estimate the cost of FP/MH services in the public and private sectors differ, resulting in cost estimates that are not comparable and often vary widely. Only cost data that have been collected and analyzed using consistent methodologies will allow for direct comparison.

MOMENTUM is a USAID-funded project that harnesses the potential of the private sector to expand access to and use of high-quality, evidence-based maternal, neonatal, child health, FP and reproductive health services. As part of this project, MOMENTUM partner Avenir Health led a three-country study in which a costing approach was piloted in the DRC (Kinshasa), Nigeria (Ebonyi State), and Tanzania (Dar es Salaam) to investigate the variations in public and private provider cost structures and cost drivers for key FP/MH services.

PILOTING A LEAN COSTING APPROACH

This study piloted a lean costing methodology to identify direct and indirect costs from a health systems perspective, without the resource-intensive direct observations typically used in traditional costing studies (Box 1), with the goal of providing insights for future replication of this costing approach on a larger scale and in other contexts. Many methods can be used to collect these types of costs in the public and private sectors (Figure 1), ranging from facility-based costing to more normative approaches based on standard clinical protocols and guidelines. The *observational time-motion* empirical approach is often regarded as a gold standard in measuring time use in clinical settings.⁴ In this approach, a trained observer closely follows one health provider at a time and records their actions at short, timed intervals, such as every five minutes. Criticisms of this approach include its costliness, particularly in larger facilities, and a possible bias in results due to providers altering their behavior in response to the presence of a constant observer.⁵

Box 1: Comparing Costing Approaches

Empirical costing: based on actual costs observed in the field

→ Informed by direct client observation

→ Informed by key informant interviews

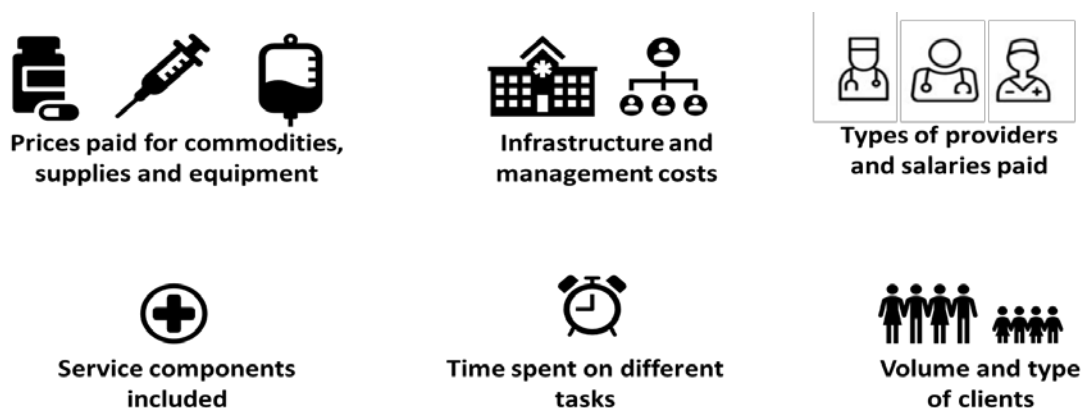
Main source of data for this costing approach.

Normative costing: based on 'what should be delivered'

→ Informed by global standards

Used for this costing approach when country data unavailable.

Figure 1. Potential Drivers of Differences in Costs and Cost Structures



The MOMENTUM study used a facility-based costing approach, but it relied on key informant interviews at the facility and routine data on client volumes; it also included normative estimates from global analyses to inform model inputs not well captured through the interviews (such as the unit prices paid for some supplies). Instead of direct observation, the study relied on best estimates from clinical staff regarding the time and materials utilized to provide services. One MOMENTUM consultant per country spent approximately one day on initial data collection at each facility; sometimes additional follow up visits or phone calls were needed. This compares to assigning a researcher to each staff member at the site for multiple days per site. We recognize that a time-motion study would have arguably provided a more accurate picture of time spent with clients and supplies used (and indicated how services varied by client), though at a national scale, direct observation could be unaffordable for a country’s health system stewards. For example, results from recently completed time-driven activity-based costing analyses in Tanzania and Uganda (which included a time-motion study) found that observed time with clients sometimes differed from the assumed time spent on delivering services.^{6,7} However, these two analyses acknowledged that this approach is costly and time intensive. To ensure the piloted approach used in this study would be more affordable to replicate in other settings, MOMENTUM developed a methodology based primarily on facility-based interviews rather than client observation.

The pilot included two components: 1) an examination of the costs of providing FP/MH services at select public, private for-profit, and private nonprofit sites to provide estimates of costs required to deliver services in different settings; and 2) key informant interviews with experts, decisionmakers, and program management stakeholders to understand their perspectives about potential opportunities and barriers for private sector involvement in the provision of FP/MH services.

In each site a total of nine facilities that offered FP/MH services were purposively selected such that costing data were collected from a mix of public, private for-profit, and private nonprofit facilities. In some cases, additional facilities participated in the qualitative in-depth interviews but did not provide costing data. Due to the lean nature of the pilot, MOMENTUM did not seek a representative sample of sites; instead, between two to four of each facility type (i.e., public, private for-profit, and private nonprofit) in each locality were chosen to ensure a more rapid and economical pilot test. This sample was sufficient to allow for a comparison by type of site, but not to be able to generalize results to the entire country or across settings.

MOMENTUM engaged the local consultants to advise on site selection, to carry out data collection from facilities and to conduct qualitative interviews. MOMENTUM developed standardized data collection tools, with the same tools used in each country, to collect economic costs from facilities, including salaries, materials, equipment, transportation, and overhead. In addition, information was collected on client volumes and time use. These data included:

- Service statistics for a three-month period (e.g., August-October 2021).
- Information on drugs and supplies, including unit costs¹ and quantity used per client.
- Information on clinical and non-clinical staff at each facility including salaries and time spent on FP/MH services.
- Task-patient flow estimates of the type of provider attending each stage of a service (e.g., group counseling, clinical consultation, clinical services) and number of minutes spent per task.
- Information on equipment and furniture, including purchase cost, purchase year, and lifetime of item.
- Building maintenance and utility costs.
- Building size estimates for calculating rental value.

MOMENTUM used an ingredients-based approach to estimate unit costs of four FP/MH services: FP, antenatal care (ANC), postnatal care (PNC) and labor and delivery (L&D). Unit costs included estimates of direct costs (drugs/commodities, supplies, direct labor spent on service delivery), including all service components within a visit, and indirect costs (general/non-medical labor, furniture and equipment, and maintenance and utilities), with slightly different approaches used to calculate each type of cost (Table 1). For example, for ANC and PNC, we calculated the total cost of drugs and supplies across all visits for a single pregnancy and then divided by the average number of visits per pregnancy to obtain an average cost per visit. For L&D services, overall weighted costs per visit were calculated that accounted for differential costs across vaginal and cesarean deliveries. For FP, direct labor and supply costs were estimated as a cost per visit by method. An overall FP unit cost per visit was then calculated, accounting for the mix of FP methods provided at each facility. Direct labor costs included the cost of group counseling, clinical consultation and clinical service provision (specific to each method), and they account for the type of clinical provider performing these services at the respective facility, their salary per minute, the average number of women per group (for group counseling), and the total minutes required for each service component at the respective facility. Facilities were asked about costs related to all FP methods they provided and associated clinical supplies, including short acting methods (male condoms, oral contraceptive pills (OCPs), emergency contraceptive pills (ECPs), injectables), long-acting methods (implants and intrauterine devices (IUDs)), and permanent methods (male and female).

Indirect costs were calculated per visit for *any* type of facility visit, taking the total indirect costs for the facility and dividing by the total visits (for all services, not just the costed services). Thus, a single indirect cost per visit was applied to all visits at a single facility regardless of visit type. In some cases when data were not available, such as the unit price paid for certain drug and supply assumptions, global normative estimates taken from Guttmacher Institute’s *Adding It Up: Investing in Sexual and Reproductive Health 2019 – Methodology Report* to inform model inputs.⁸

Table 1. Simplified Costing Approach by Component of Unit Cost

Component of Unit Cost	Costing Approach (Simplified)
Direct Costs (Service Specific)	
Drugs/Commodities	% receiving x # units x unit cost

¹ Facilities were asked about the prices they pay for drugs and supplies. Donated drugs and supplies were valued at the prices paid by the institution providing the commodities (e.g., the Ministry of Health). In some instances, prices collected by facilities were supplemented with prices collected from pharmacies and wholesalers.

Supplies	% receiving x # units x unit cost
Direct labor	Minutes per visit x avg salary per minute
Indirect Costs (Not Service Specific)	
General salaries (non-clinical staff)	Total annual salary spend / annualized visits
Furniture and equipment	Total annual costs / annualized visits
Maintenance and utilities	Total annual cost / annualized visits

The qualitative component included key informant interviews with government stakeholders and key informants from healthcare facilities in the costing study, as well as some additional facilities that did not provide costing data. Data collectors used interview guides that included questions about opportunities for and barriers to utilizing the private sector to provide FP/MH services. The number of interviews conducted ranged from five in Tanzania, nine in the DRC, and 13 in Nigeria.

KEY RESULTS: KINSHASA, DRC

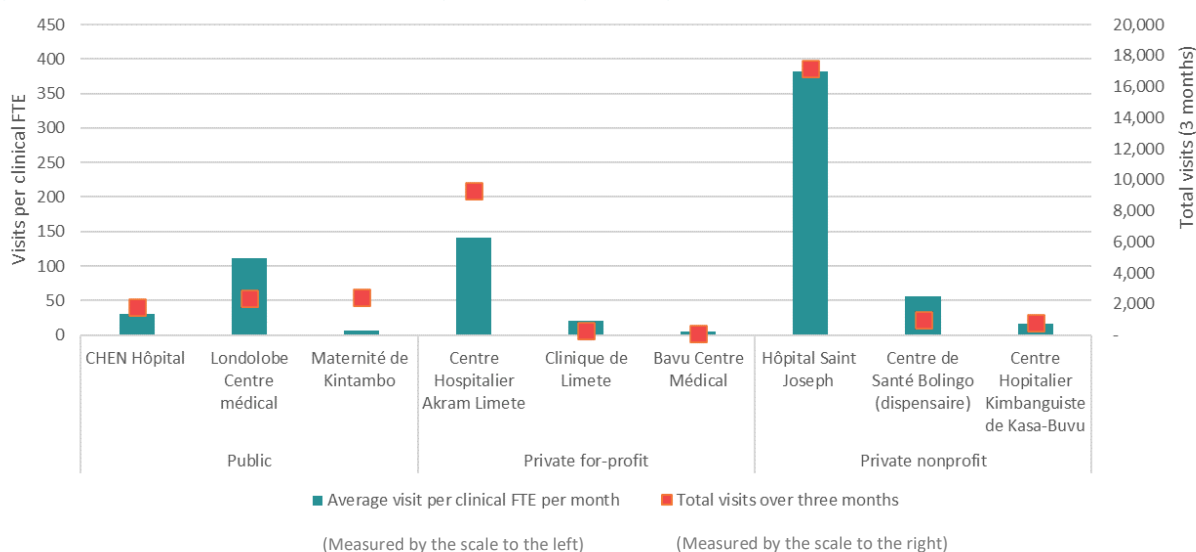
Maternal mortality remains high in the DRC⁹ and contraceptive use is low with just 16% of women using a modern contraceptive method in 2021.¹⁰ Private shops and pharmacies are the main source of contraceptives, with women primarily relying on OCPs and condoms.¹¹ The private sector is already recognized by the DRC’s government as a key partner in several MoH strategic planning documents. However, identifying ways to increasingly engage the clinical private sector (both for-profit and nonprofit) in the delivery of FP/MH services remains a challenge in the DRC due to health system weaknesses and competing priorities, such as ongoing decentralization efforts.¹² Knowing the costs of delivering services through private providers is critical for this engagement, but data on these costs are limited. A broad 2018 assessment of the potential for the private sector to contribute to improved health outcomes encouraged an expansion of strategic purchasing of private health services, indicating that private sector cost data could immediately be useful in constructing contracting mechanisms.¹³

We chose Kinshasa as our study locality in the DRC due to the larger presence of private providers and lower travel costs. We costed FP/MH services at nine facilities (three public, three private for-profit and three private nonprofit). Costs and patient flow data were collected for the period from June to August 2021.

FACILITY STAFFING AND VISITS

The analysis found large variation in the number of clinical and non-clinical staff as well as the number of client visits at each of the surveyed facilities. The average number of monthly client visits per clinical full time equivalent (FTE) was calculated for each facility (Figure 2); values ranged from 382 at Hôpital Saint Joseph (a private nonprofit facility) to only six at Maternité de Kintambo (a public facility) and five at Bavu Centre Médical (a private for-profit facility). No clear pattern is seen in either client visit volume or the ratio of visits per clinical FTE by facility ownership.

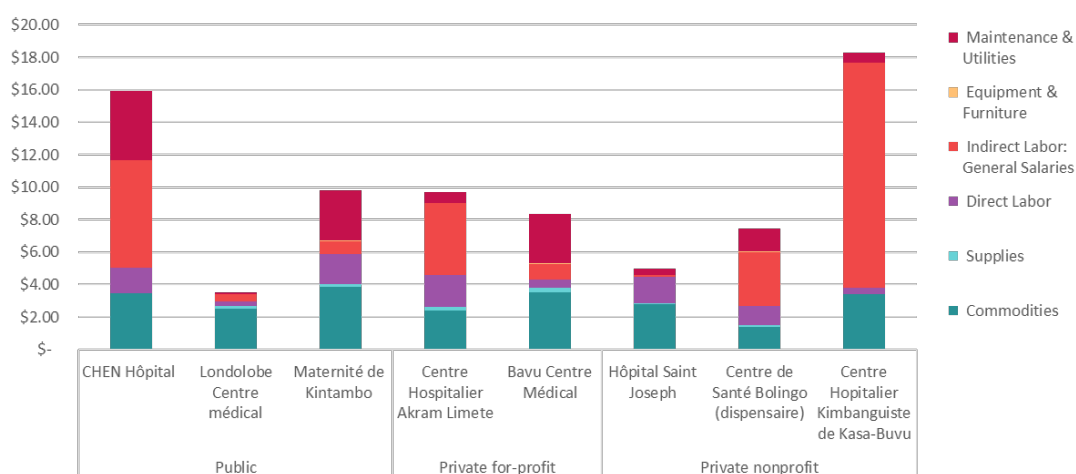
Figure 2. Total Staff and Number of Visits per Month by Facility



UNIT COSTS BY SERVICE: FP

Estimated unit costs per FP visit in the sampled public and private sector facilities are shown in Figure 3 below. Unit costs ranged considerably across facilities, largely driven by differences in indirect costs. The total direct costs tended to be consistent across facilities, ranging from around \$3 to \$5 within public, private for-profit and private nonprofit facilities. Among direct costs, drugs accounted for the largest share of costs across all facilities, though the share of costs from drugs ranged considerably from 51% to 91%. Indirect costs accounted for a particularly large share of total costs at CHEN Hôpital (68%) and Centre Hospitalier Kimbanguiste de Kasa-Buvu (79%) due to higher costs at these facilities for general salaries (indirect labor) as well as higher maintenance and utility costs at CHEN Hôpital.

Figure 3. Breakdown of Direct and Indirect Costs Per FP Visit, Kinshasa DRC²



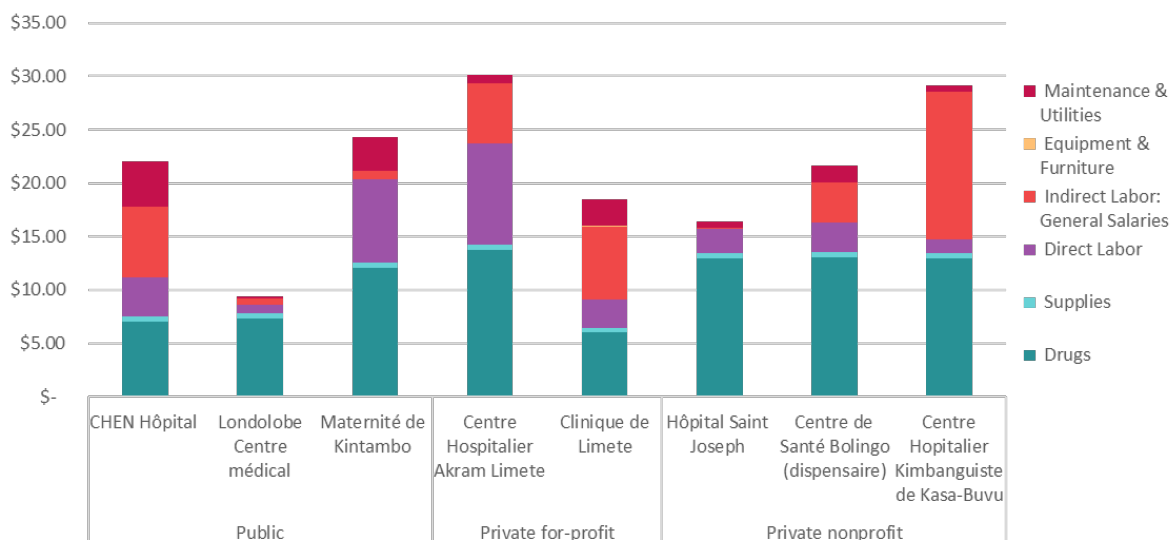
Note: Clinique de Limete not shown as it reported providing some FP counseling but no FP services.

² Please note: in all figures that break down the direct and indirect costs (e.g., Figures 3-6, 9-12, 15-18), the “Equipment & Furniture” category is substantially smaller than all other categories at all facilities, so it is not visible in some charts at this scale.

UNIT COSTS BY SERVICE: ANC

Estimated unit costs per ANC visit in the sampled public and private sector facilities are shown in Figure 4 below. Unit costs ranged from just under \$10 (at a public facility) to \$30 (at a private for-profit facility). Direct costs also ranged considerably, from around \$9 to \$24. Among direct costs, drugs accounted for the largest share of costs across all facilities (ranging from 58% to 88% of direct costs). Indirect costs accounted for between 4% and 51% of total costs across facilities.

Figure 4. Breakdown of Direct and Indirect Costs Per ANC Visit, Kinshasa DRC

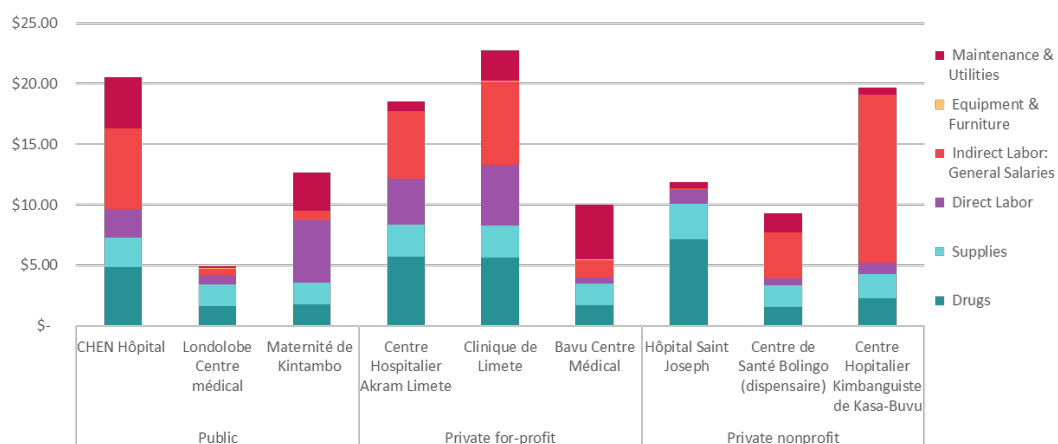


Note: Bavu Center Medical not shown as it reported not providing any ANC services.

UNIT COSTS BY SERVICE: L&D

Estimated unit costs per L&D visit in the sampled public and private sector facilities are shown in Figure 5 below. This graph shows the average cost per delivery at each facility, accounting for the mix of vaginal deliveries and cesarean sections. Cesarean sections were only available in four facilities (CHEN Hôpital, Centre Hospitalier Akram Limete, Hôpital Saint Joseph, and Centre de Santé Bolingo). In these facilities, cesarean sections were two to three times more expensive than vaginal deliveries. At some facilities, drugs accounted for the largest share of direct costs, while at others, direct labor accounted for the largest share. Indirect costs accounted for between 5% and 74% of total costs across facilities.

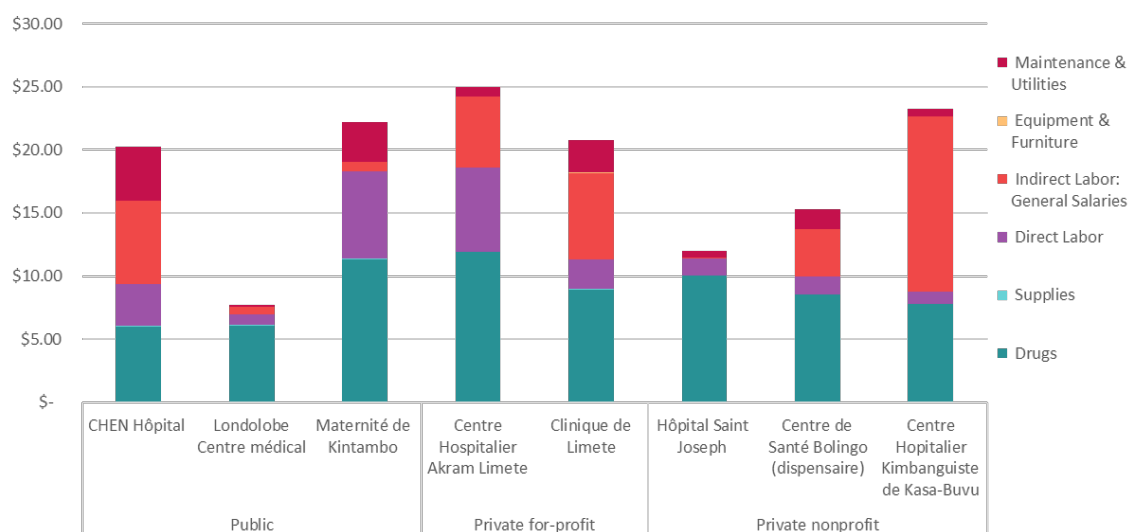
Figure 5. Breakdown of Direct and Indirect Costs Per L&D Visit, Kinshasa DRC



UNIT COSTS BY SERVICE: PNC

Estimated unit costs per PNC visit in the sampled public and private sector facilities are shown in Figure 6 below. Total unit costs ranged from nearly \$8 to \$25 across facilities; direct costs also ranged considerably from around \$7 to \$19. Among direct costs, drugs accounted for the largest share of costs (ranging from 62% to 88% of direct costs). Indirect costs accounted for between 5% and 62% of total costs across facilities.

Figure 6. Breakdown of Direct and Indirect Costs for PNC, Kinshasa DRC

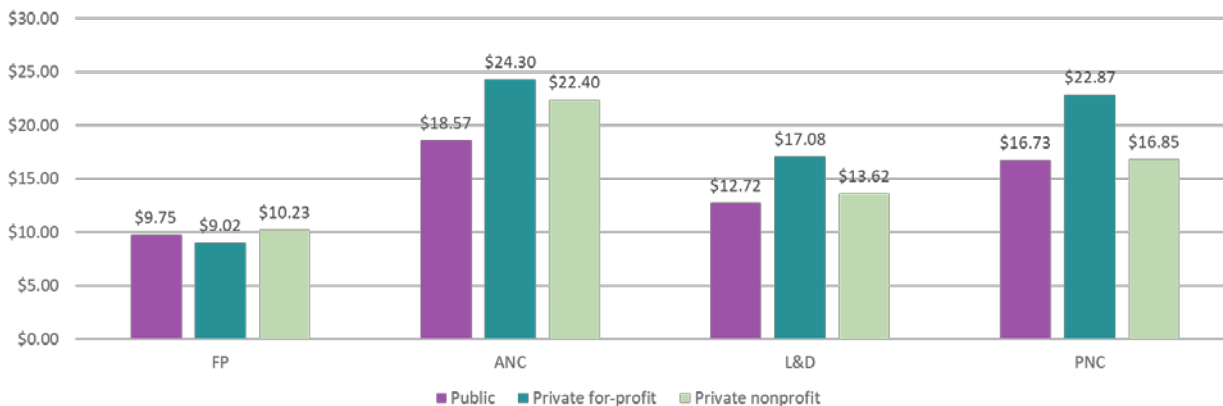


Note: Bavu Center Medical not shown as it reported not providing any PNC services.

OVERALL UNIT COSTS BY SECTOR

For three of the four services, ANC, PNC and L&D, costs were lower at the public sector facilities included in the study compared with the private for-profit and private nonprofit facilities (the exception was FP, for which the unit costs at public facilities were slightly higher than in at private for-profit facilities - Figure 7). It is worth noting, however, that the differences were relatively small. The costs shown below reflect the average costs among the public, private for-profit, and private nonprofit facilities surveyed. As shown above there was often wide variation across facilities, so these averages should be viewed in this context.

Figure 7. Total Unit Costs by Service and Sector, Kinshasa DRC



KEY RESULTS: EBONYI STATE, NIGERIA

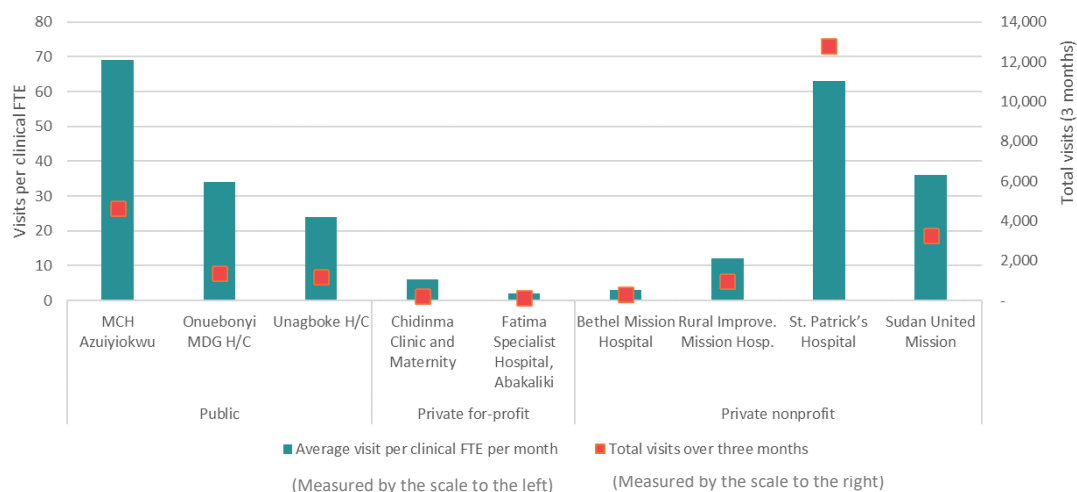
Nigeria has one of the highest maternal mortality rates in sub-Saharan Africa, poor health indices for reproductive and MH services, high unmet need for FP, and low ANC attendance.^{14,15,16} The Nigerian private health sector is dynamic and a key deliverer of essential health services. The recent Coalition Against COVID-19 (CACOVID) showed that the private health sector could be successfully engaged in delivering health initiatives at scale, with relative efficiency and coordination (Abubakar et al, 2022).¹⁷ Nigeria’s National Health Insurance Scheme (NHIS) currently engages with over 10,000 facilities through contractual arrangements; approximately 60% of these are private facilities.¹⁸ The NHIS pays providers via capitation and fee for service mechanisms, with rates determined by actuarial analysis carried out “from time to time.”¹⁹ However, this updated analysis has rarely been conducted. Also, as Nigeria’s different states are diverse and have their own unique contexts, the 2022 Lancet Nigeria Commission urged that solutions to health system challenges should be localized (Abubakar et al, 2022).²⁰

Subsequently, while Nigeria already has growing experience in contracting private sector providers, localized information, including costing analyses to inform local contracting mechanisms, is needed. The selection of Nigeria additionally provided a useful location to test the lean methodology as the country’s private sector, in comparison to that of the DRC, is well established, has active links to the public sector and subsequently may have different levels of cost and efficiency. The study was conducted in Ebonyi State in Nigeria, as USAID requested the study take place in a state in which another MOMENTUM-related project was working (e.g., the MOMENTUM Country and Global Leadership project). We costed FP/MH services at nine facilities in Ebonyi State (three public, two for-profit, and four nonprofit). The study evaluated direct and indirect costs of FP/MH at these nine facilities, determining a cost per visit at each of the facilities. Costs and patient flow data were collected for the period from August to October 2021.

FACILITY STAFFING AND VISITS

Large variation was found in the number of clinical and non-clinical staff as well as the number of client visits at each of the surveyed facilities. The average number of monthly client visits per FTE was calculated for each facility (Figure 8); values ranged from 69 at MCH Azuiyiokwu (a public facility) to only two at Fatima Specialist Hospital, Abakaliki (a private for-profit facility). The private for-profit facilities, as well as some of the private nonprofit facilities, saw very few clients over the three months before data was collected, but also had relatively high numbers of clinical FTEs leading to a very low ratio of visits to clinical FTE.

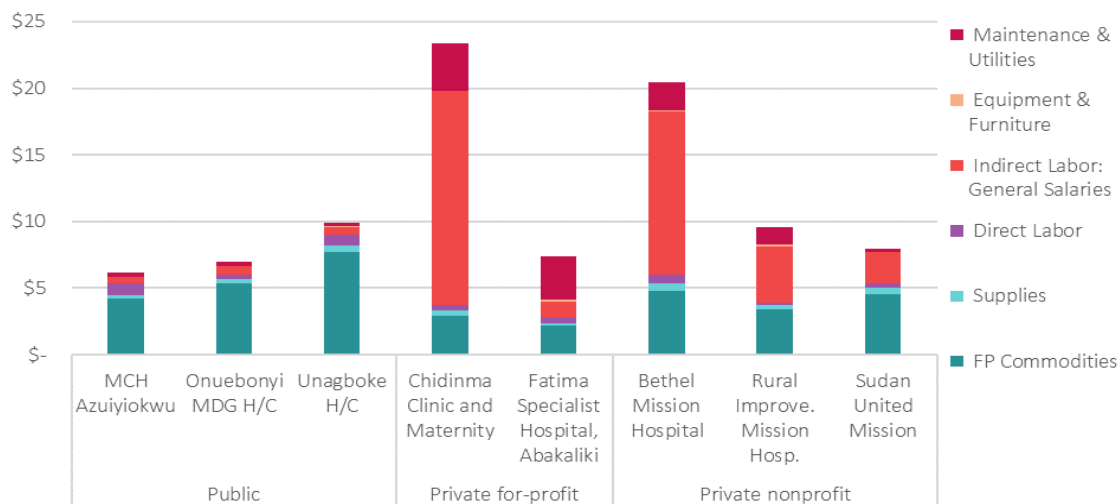
Figure 8. Total Staff and Number of Visits per Month by Facility



UNIT COSTS BY SERVICE: FP

Estimated unit costs per FP visit in the sampled public and private sector facilities are shown in Figure 9 below. Total unit costs ranged considerably across facilities, as did direct costs (from around \$3 to \$9). The public sector facilities had a higher direct FP cost, in part driven by a reported higher priced implant (\$8.50 in the public sector as compared to \$4.82 in the private for-profit and nonprofit sectors). Indirect costs accounted for a particularly large share of costs in private for-profit and nonprofit facilities, in particular Chidinma Clinic and Maternity (84% of total cost) and Bethel Mission Hospital (71% of total cost).

Figure 9. Breakdown of Direct and Indirect Costs Per FP Visit, Ebony State Nigeria

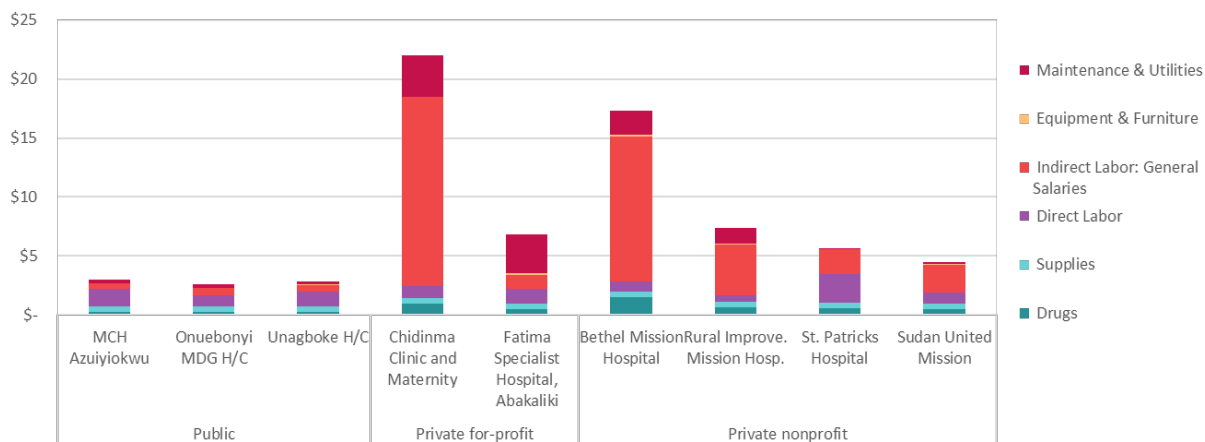


Note: St. Patrick's Hospital is not shown as it reported providing only FP counseling and not FP services.

UNIT COSTS BY SERVICE: ANC

Estimated unit costs per ANC visit in the sampled public and private sector facilities are shown in Figure 10 below. Unit costs ranged considerably from nearly \$3 to \$22. However, direct costs were more consistent across facilities with a cost of around \$2 to \$4 across public, private for-profit, and private nonprofit facilities. Drug costs were considerably lower in the three public sector facilities, accounting for less than 15% of direct costs. Indirect costs accounted for between 26% and 89% of total costs across facilities.

Figure 10. Breakdown of Direct and Indirect Costs Per ANC Visit, Ebony State Nigeria

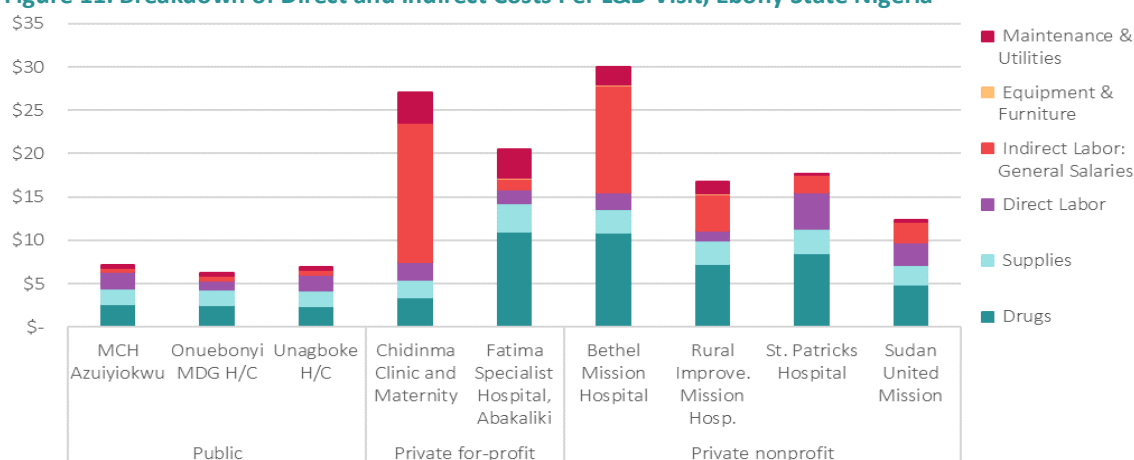


UNIT COSTS BY SERVICE: L&D

Estimated unit costs per L&D visit in the sampled public and private sector facilities are shown in Figure 11 below. This figure shows the average cost per delivery at each facility, accounting for the mix of vaginal deliveries and cesarean sections. Only one of the three public facilities surveyed provided cesarean sections, whereas all five of the private facilities offered them. Direct costs for cesarean sections were four to six times higher than vaginal deliveries, with this difference largely driven by the cost of drugs.

Overall L&D unit costs were lowest at public facilities, all around \$6 to \$7. In the private sector, the unit cost ranged from \$21 to \$27 at private for-profit facilities, and from \$12 to \$30 in the private nonprofit facilities. Drugs and supplies were the driver of direct costs at all facilities; accounting from 40% to 70% of direct costs across facilities. Indirect costs accounted for between 11% and 72% of total costs across facilities.

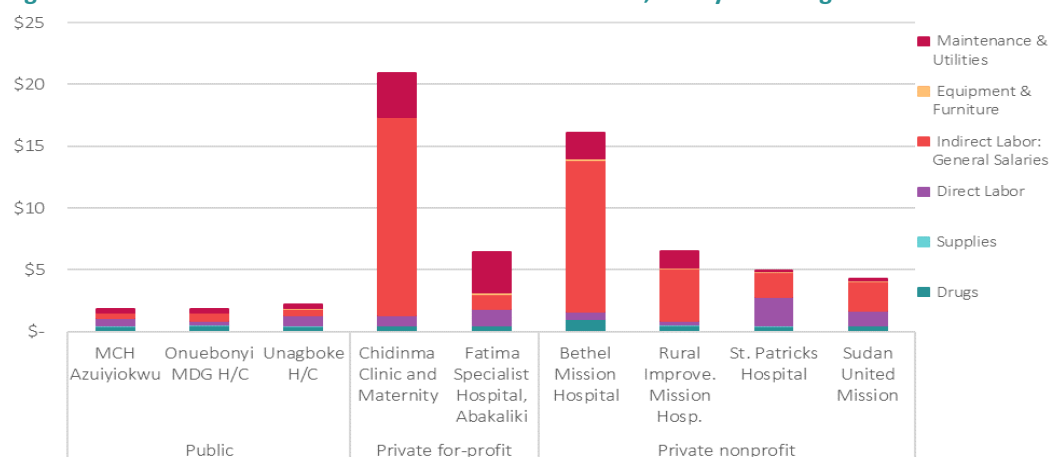
Figure 11. Breakdown of Direct and Indirect Costs Per L&D Visit, Ebony State Nigeria



UNIT COSTS BY SERVICE: PNC

Estimated unit costs per PNC visit in the sampled public and private sector facilities are shown in Figure 12 below. Unit costs ranged considerably from nearly \$2 to just over \$20. Direct costs were more consistent across facilities with a cost of around \$1 to \$3 across public, private for-profit, and private nonprofit facilities. In six of the nine facilities, direct labor costs accounted for the largest direct cost, with drugs accounting for the largest direct cost in the remaining three facilities. Indirect costs accounted for between 39% and 94% of total costs across facilities.

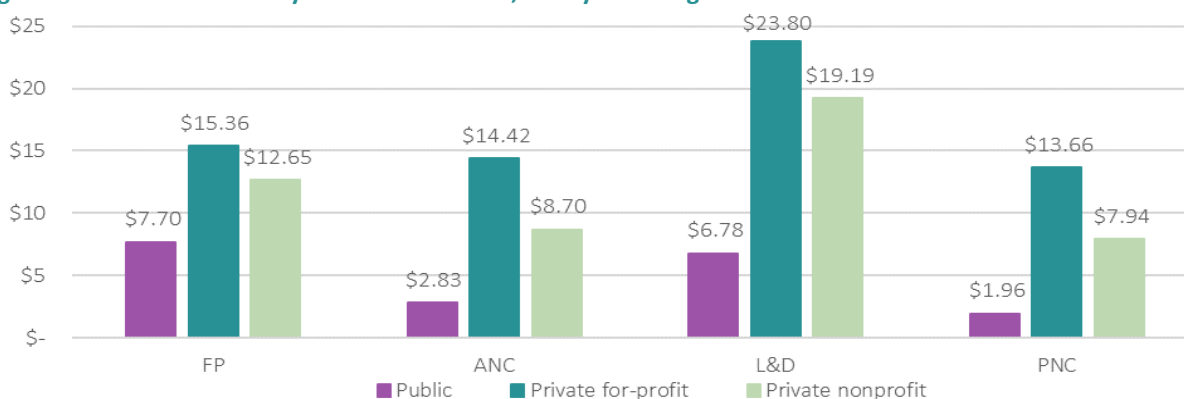
Figure 12. Breakdown of Direct and Indirect Costs for PNC, Ebony State Nigeria



OVERALL UNIT COSTS BY SECTOR

For each of the four services, costs were lower at the public sector facilities included in the study than at the for-profit and nonprofit sector facilities - Figure 13). The differences in the data collected were largest for L&D, where the unit cost was nearly triple at for-profit and nonprofit facilities relative to the public sector, although we note that in the public sector only one facility offered cesarean sections. In addition, indirect costs were higher at the private for-profit and private nonprofit facilities as compared to the public sector facilities. In some cases, the vast majority of the overall unit cost was made up of up of these indirect costs. The costs shown below reflect the average costs among the public, private for-profit, and private nonprofit facilities surveyed. As shown above there was often wide variation across facilities, so these averages should be viewed in this context.

Figure 13. Total Unit Costs by Service and Sector, Ebony State Nigeria



KEY RESULTS: DAR ES SALAAM, TANZANIA

Despite recent gains in coverage for key maternal and reproductive health services, maternal and under-five mortality remain high in Tanzania.²¹ One in ten women in Tanzania are aged 15-24 and have an unmet need for modern contraception.²² Like Nigeria, Tanzania has growing experience in strategic purchasing of select nonprofit and for-profit private sector health services and therefore offers a study location that may also present different levels of cost and efficiency.²³ There are three larger publicly financed insurance schemes in

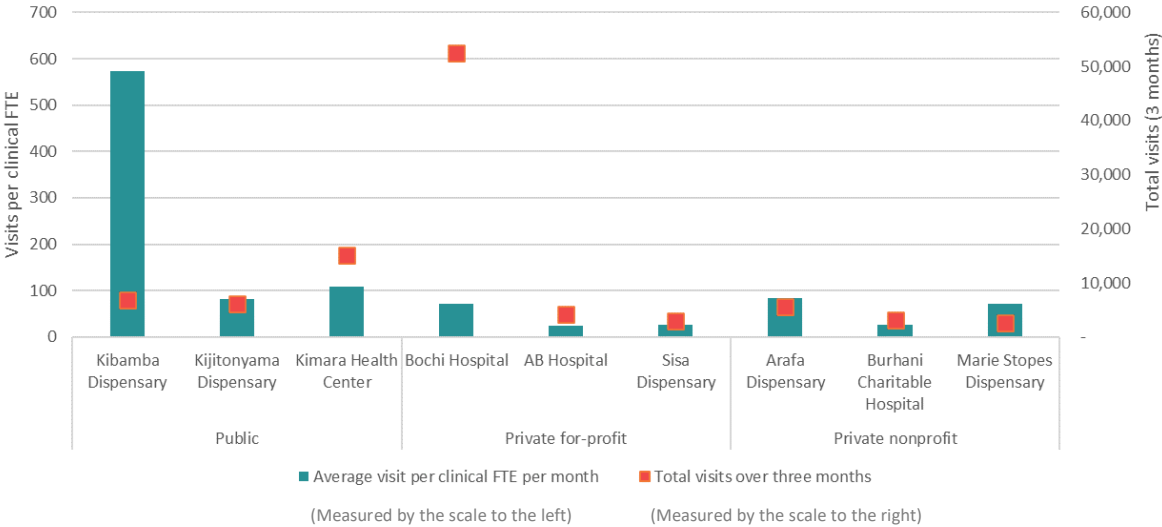
the country; two of them (the National Health Insurance Fund and the Social Health Insurance Benefit) have formal contracting arrangements in place with private health providers, and these include requirements for meeting accreditation and quality standards. However, the resources needed to deliver the broad benefits packages under these schemes do not often match what is allocated for overall budgets and for provider payments.²⁴ Conducting a rapid costing study using the MOMENTUM methodology could better inform resource planning to cover private contractor costs and improve the accuracy of national budgets.

We chose Dar es Salaam as our study locality in Tanzania due to the larger presence of private providers and lower travel costs. The study evaluated costs for FP/MH services at nine facilities (three public, three for-profit and three nonprofit); costs and patient flow data were collected from March to May 2021.

FACILITY STAFFING AND VISITS

Some variation was found in the number of clinical and non-clinical staff as well as the number of client visits at each of the surveyed facilities. The average number of monthly client visits per FTE was calculated for each facility (Figure 14); values ranged from 573 at Kibamba Dispensary (a public facility) to only 24 at AB Hospital (a private for-profit facility). Aside from Kibamba Dispensary, little variation was seen in the ratio of client visits to clinical FTEs across the remaining public, private for-profit and private nonprofit facilities.

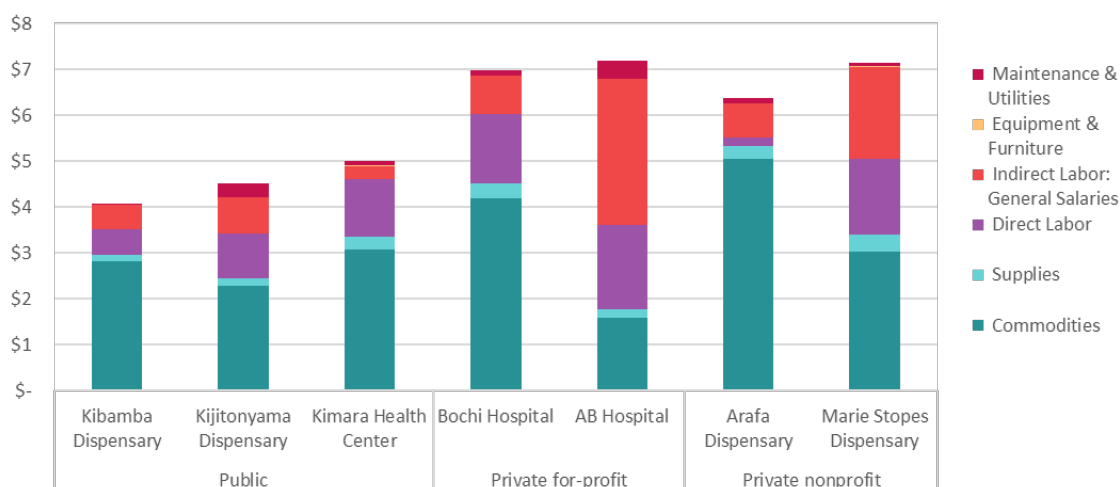
Figure 14. Total Staff and Number of Visits per Month by Facility



UNIT COSTS BY SERVICE: FP

Estimated unit costs per FP visit in the sampled public and private sector facilities are shown in Figure 15 below. Unit costs ranged from just over \$4 to just over \$7 across facilities. Costs were lowest in the three public facilities. Among direct costs, drugs accounted for the largest share of costs across all facilities, though the share of costs from drugs ranged considerably from 44% to 92%. Indirect costs accounted for a particularly large share of total costs at AB Hospital (50%).

Figure 15. Breakdown of Direct and Indirect Costs Per FP Visit, Dar es Salaam Tanzania

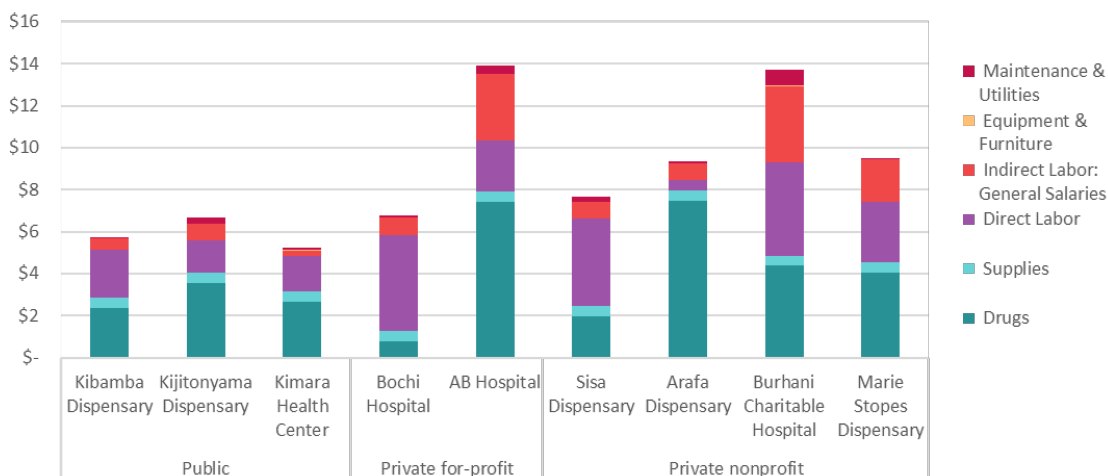


Note: Sisa Dispensary and Burhani Charitable Hospital are not shown as they reported not providing any FP counseling or services.

UNIT COSTS BY SERVICE: ANC

Estimated unit costs per ANC visit in the sampled public and private sector facilities are shown in Figure 16 below. Unit costs ranged from just over \$5 (at a public facility) to nearly \$14 (at a private for-profit and a nonprofit facility). Direct costs varied across facilities; at some, drugs were the largest direct costs whereas at others direct labor was the largest direct cost. At Burhani Charitable Hospital, a private nonprofit facility, drugs and direct labor costs were similar, both at around \$4.50.

Figure 16. Breakdown of Direct and Indirect Costs Per ANC Visit, Dar es Salaam, Tanzania

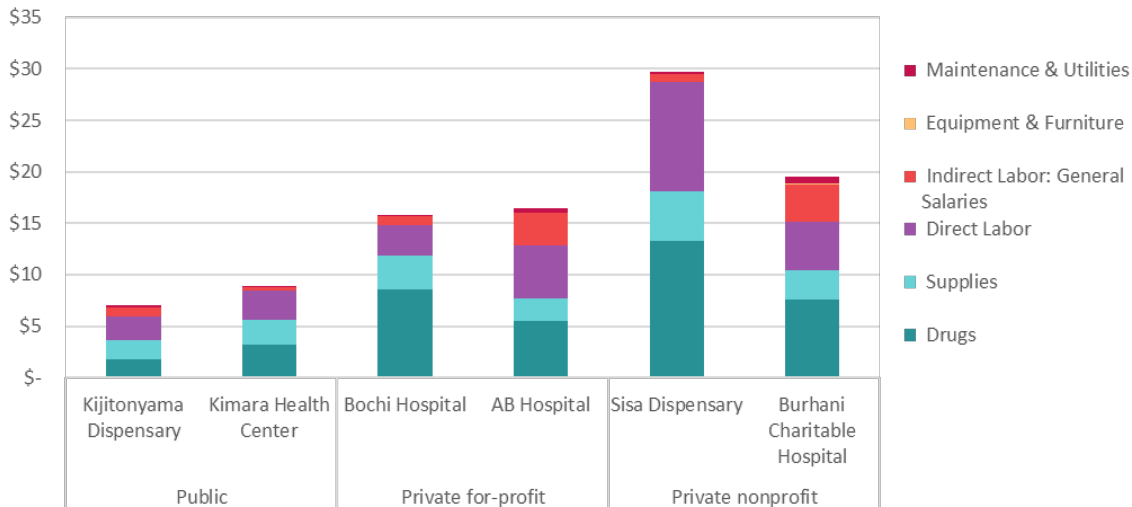


UNIT COSTS BY SERVICE: L&D

Estimated unit costs per L&D visit in the sampled public and private sector facilities are shown in Figure 17 below. This graph shows the average cost per delivery at each facility, accounting for the mix of vaginal deliveries and cesarean sections. Of the six facilities reporting any L&D services, all but Kijitonyama Dispensary (a public facility) reported providing cesarean sections, with Sisa Dispensary (a private nonprofit facility) offering only cesarean sections. Among facilities with both types of deliveries, cesarean sections were

1.8 to 2.9 times more expensive than vaginal deliveries. In all facilities, drugs and supplies accounted for the largest share of direct costs, ranging from 60% to 80% of direct costs. Indirect costs accounted for a minimal share of costs, ranging from 2% to 22% across facilities.

Figure 17. Breakdown of Direct and Indirect Costs Per L&D Visit, Dar es Salaam Tanzania

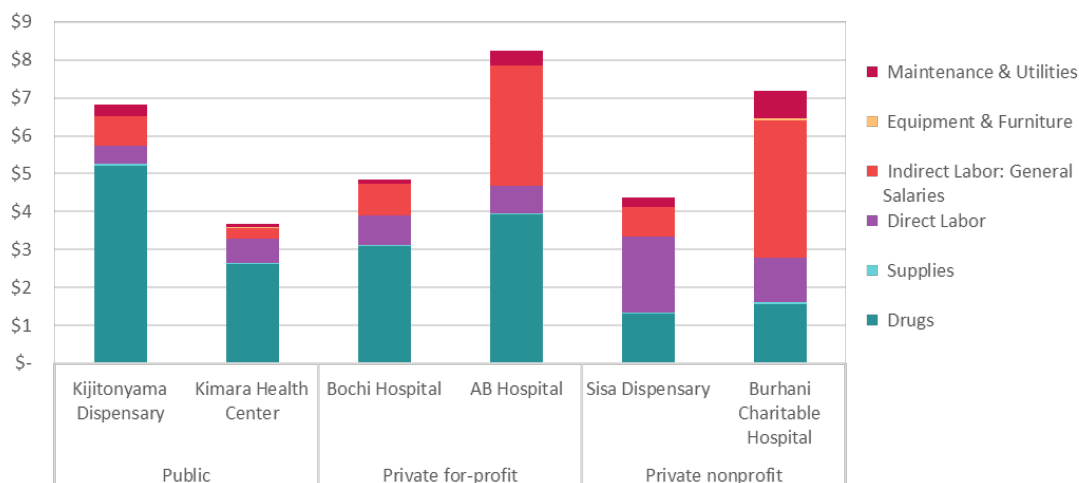


Note: Kibamba Dispensary, Arafa Dispensary and Marie Stopes Dispensary are not shown as they reported not providing any L&D services.

UNIT COSTS BY SERVICE: PNC

Estimated unit costs per PNC visit in the sampled public and private sector facilities are shown in Figure 18 below. Total unit costs ranged from nearly \$4 to just over \$8 across facilities; direct costs ranged from nearly \$2 to nearly \$6 across all facilities. Among direct costs, drugs accounted for the largest share of costs in all but one facility (ranging from 39% to 91% of direct costs). Indirect costs accounted for between 5% and 62% of total costs across facilities.

Figure 18. Breakdown of Direct and Indirect Costs for PNC, Dar es Salaam, Tanzania

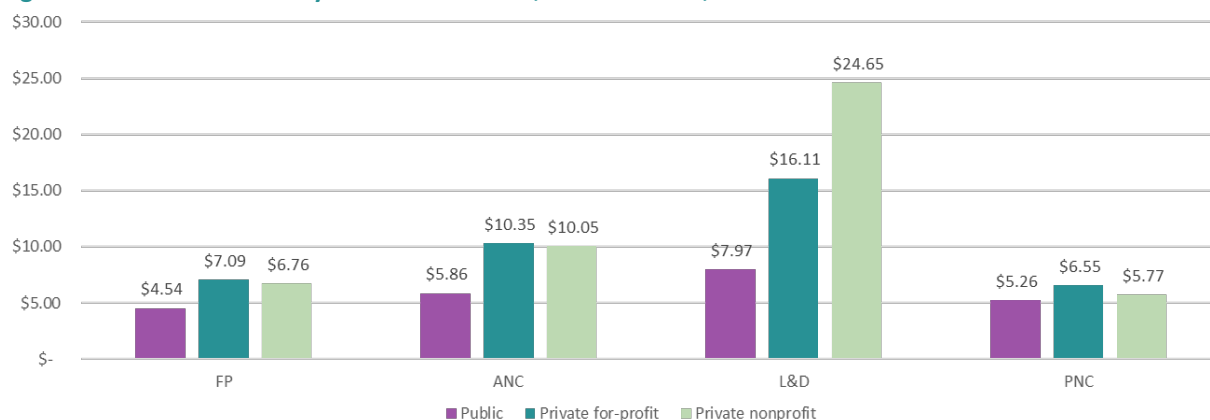


Note: Kibamba Dispensary, Arafa Dispensary and Marie Stopes Dispensary are not shown they reported not providing any PNC services.

OVERALL UNIT COSTS BY SECTOR

For all four services, unit costs were lower in the public sector facilities included in the study, as compared both the private for-profit and private nonprofit sector facilities (Figure 19). Differences were relatively small, especially for FP and PNC. The costs shown below reflect the average costs among the public, private for-profit, and private nonprofit facilities surveyed. As shown above there was often wide variation across facilities, so these averages should be viewed in this context.

Figure 19. Total Unit Costs by Service and Sector, Dar es Salaam, Tanzania



DISCUSSION

While costing results differed across the countries, some common findings and key implications raised by the three study sites may be applicable across different settings. Results from the qualitative work in each country provided additional context and nuance to explain the quantitative findings.

First, across countries and services, commodities, drugs, and supplies accounted for a significant share of direct costs. This finding is not unexpected, as established resources such as country-level FP Costed Implementation Plans demonstrate that commodity security is often a significant, if not the largest, share of a national FP program's budget.²⁵ Considering that private providers are often small businesses operating on thin margins, how these commodities and supplies are financed therefore plays an important role in determining facility costs and, ultimately, the unit cost per service. In some contexts, including in Nigeria and Tanzania, public sector health stewards have established public-private commodity partnerships for select services, permitting private providers to access drugs and commodities through public sector supply chains.²⁶ In other cases, such as in the DRC, these products were sourced by both public and private providers from local markets – sometimes at much higher prices.

When asked about their views on greater use of the private sector to deliver FP/MH services in their country, qualitative interviewees had concerns about affordability and equity of service delivery. For example, in Tanzania, stakeholders echoed the common refrain that private facilities charge more, and thus are mainly attended by those with higher incomes who can afford to pay. Nevertheless, respondents across countries expressed support for increased engagement of the private sector to expand availability of and access to FP and MH services. For example, in Nigeria, stakeholders suggested including private sector staff in government-supported training and capacity strengthening efforts to ensure alignment between providers' skill sets across sectors. Similarly, in the DRC, interviewees viewed private sector provision of FP services as a partnership with the government.

While the findings in this analysis are not generalizable or comparable across countries due to the sample size, there were interesting nuances observed across the different sites in the three locations:

DRC SITES

The pilot revealed relatively small variations in overall costs between the public, private for-profit, and private nonprofit sites, which was not seen in Nigeria or Tanzania. In three of the four health areas assessed, private for-profit facilities were the most expensive, though, uniquely, for FP services, private for-profit facilities in our sample were the least expensive and the public sector sites were the most expensive. From our findings, the private nonprofit facilities appear to be more busy than public facilities or private for-profit facilities, which is also a finding unique to the DRC in our study. In an average month, a clinical staff member in a private nonprofit facility may see more than 150 clients, where the public sector saw nearly one-third this level (50 clients per month per clinical staff member) – some qualitative interviews indicated this may be due to client demand being affected by ongoing issues like stock-outs and staff attrition. It was beyond the scope of this analysis to assess if the quality of the services was reduced due to the larger client volume per nonprofit clinician; however, qualitative interviewees indicated that many clients prefer the private sector (including nonprofit facilities) because of perceived advantages in terms of quality.

*“Staff turnover, regular commodities stock-out, often for more than three months”
(Public facility, DRC)*

NIGERIA SITES

At our sampled sites, FP/MH services consistently cost more at private health facilities than at public health facilities. For-profit facilities cost twice as much for public FP services, but nearly seven times more for PNC services at the public sites. The for-profit facilities also appeared to be less busy than the public facilities. In an average month, the public facilities saw 12 times more clients than for-profit facilities, including 24 times more FP clients. While only vaginal births took place at the public facilities, they saw nearly eight times more births than private for-profit facilities. The public facilities in our sample also had a wider mix of FP methods available at the time of the survey, indicating that FP clients may have had broader choice at these sites than at private facilities, where four of the five sites had only one or two methods available. Qualitative respondents indicated that many clients prefer the private sector because of perceived advantages such as quality and availability of clinical providers, efficiency and level of service provision, and availability of drugs, supplies, and equipment. The higher costs of private for-profit FP/MH services raise questions about whether the client is bearing these higher costs through higher prices, though this was out of scope for MOMENTUM’s analysis.

*“Private sector is a world of its own”
(Ebonyi State MoH, Nigeria)*

TANZANIA SITES

Within our sample, the private health services consistently cost more than those at public health facilities, particularly for ANC and L&D. Like the sites in Nigeria, the for-profit facilities sampled in Tanzania appear to be generally less busy than the public facilities. In an average month, a clinical staff member at a for-profit facility would see between 24 and 72 FP/MH patients, whereas in the public sector this ranged between 82 and 573. This may not be an unexpected finding for both Tanzania and Nigeria, as private for-profit providers often see greater client volumes for curative services rather than for preventative services such as FP and ANC. However, given the significantly high level of staffing relative to FP/MH client volumes and to the public sites, it appears that the sampled private facilities have capacity to absorb additional FP/MH clients from the Tanzanian public sector. Whether this shift would affect the quality and equity of services is again outside the scope of this analysis.

“I think they are doing the best and are helping the public health facilities to reduce the burden”
(Registered Nurse, Public health facility, Tanzania)

LIMITATIONS AND LESSONS LEARNED

Overall, this costing approach shows promise in identifying different service delivery costs in the public and private sectors. Similar methodologies could be used at a central level to inform planning and policy discussions or at a facility level to inform management decisions, such as improving efficiency or sourcing more affordable drugs and supplies.

The study was designed as an initial exploration into the different cost drivers across different country sites and types of facilities to test the costing approach. As a pilot, the sample size was deliberately limited, and it was not possible to know whether seasonality or the three-month timeframe in which cost and service data were collected influenced estimates of annual costs. Since direct observation of FP/MH services was not conducted as part of this study, the range in unit costs might not only reflect differences across facilities but also differences in responses received related to time required to perform these services. A costing analysis of different facility business models or the costs required to reach different populations (e.g., vulnerable or hard-to-reach clients) was not included. Also, because of limited COVID-19-related lockdowns in the selected study countries, any changes in costs are likely to have been temporary, and the study will not have accounted for this. Last, as mentioned above, the study focused on costs of providing FP/MH services, but not the costs of a service to the end client.

Below, lessons learned on the costing approach, costing tools, and additional modifications are summarized; these do not necessarily only apply to this costing approach, and may apply to any costing methodology. Additional details on initial suggested changes and lessons from the pilot that can be applied to replication of the approach can be found in Appendix A; the list of drugs/commodities and associated supplies that were examined in this study are found in Appendix B.

COSTING APPROACH

- **Working with a local consultant** who had existing relationships at the project sites, who could provide contextual knowledge about the area, and who could facilitate positive relationships with the selected data collection sites was vital. A single local consultant conducted all of the data collection in each

country, which improved consistency; when scaling, standardized data collection tools and robust training will be important to ensure consistency when data is collected by multiple data collectors.

- The facilities selected for data collection must be **willing to be transparent** in sharing cost data necessary for the study, including salary data. Further, while the sample size for this pilot in each country was small, future studies with a **larger sample size** reflecting geographic diversity and other facility types might allow for comparisons and further analyses, including by ownership and client volume, which is particularly important given the variations seen.
- It was necessary to **build in adequate time to return to or consult again with facilities** to re-check data collected and ask additional questions as the data were being analyzed. Additional and **more thorough training of data collectors** than expected was needed (e.g., in distinguishing service statistics versus visits, to facilitate more probing on the typical services performed as part of ANC, L&D, and PNC). Due to the COVID-19 pandemic, all support to local consultants was provided remotely in each setting; an in-person training and joint data collection at a minimum of one site would have been preferable.
- It would have been useful to tailor and **conduct the qualitative interviews after the analysis of quantitative data**, to better focus the questions on the observed results and to answer key questions identified during the analysis. However, in countries requiring Institutional Review Board (IRB) approval, this sequencing may require an additional protocol modification step.

COSTING TOOLS

- **More specificity was needed in the data collection tools.** Upon reflection, it may have been beneficial to ask about one service at a time, so that the data collection tools could be automatically populated based on responses related to a previous service.
- **Piloting the data collection form and analysis at one facility** before replicating at others would have allowed for modifications to the data collection template prior to the rest of data collection to ensure that there was minimal confusion about the costing information that was necessary to gather so that return visits to facilities were not necessary.
- The costing instruments included several **open-ended questions** which created some confusion in the way the questions were interpreted and resulted in differences in responses from one site to the next. Not having standard response options or prompts for example on the items used as part of ANC or PNC, and instead relying on the respondent to identify all of the items used as part of the delivery of these services, relied heavily on the recall of the respondents. As such, it may be preferable to identify all items possibly used (e.g., list all of drugs that might be used in L&D or provided as part of ANC) and vet this list at a pilot facility or with in-country experts prior to data collection to ensure that it is appropriate for the setting. This approach may have improved consistency in reporting across facilities from the outset.

ADDITIONAL MODIFICATIONS

- The data collection template used as part of this pilot attempted to quantify ‘unused’ time to uncover the indirect costs of FP and MH provision, but this proved to be challenging. In the future, we recommend a **refinement in how indirect costs are measured**. For example, the questionnaire could be expanded to include time spent on activities like updating medical charts or preparing rooms for ANC or FP services.
- The data collection template **replicated how unit costs are calculated in the OneHealth Tool²⁷ to [estimate an average cost per case](#)** using the percent receiving the service, units of drugs and commodities per dose, times per day, and days per case. However, for certain services (e.g., FP

commodities, L&D) this way of collecting cost data did not provide the level of specificity needed. For example, this approach successfully captured the cost of drugs required for ANC, PNC, and FP services, but was not successful in identifying all of the supplies associated with delivering these services. For L&D (especially cesarean section), the drugs and supplies collected were much broader using this approach, which required using several assumptions from the Guttmacher Institute's *Adding It Up* methodology. If this costing approach is replicated, it will be necessary to revisit how these questions are asked to better arrive at a unit cost.

- For FP commodities in particular, the data collection template should be modified to ask questions about the **average number of pill cycles and condoms given at each visit**, as assumptions were used in the pilot that may not be representative of the situation at each facility.
- Information provided from certain facilities revealed that clients were sometimes asked to purchase the necessary FP/MH drugs and commodities themselves. In the future, we recommend that the tool **clarify how to account for costs that are not borne directly by the facility**.
- Additional information on each site's hours of operation, the number of hours per day worked by full-time staff, and benefits that full-time staff receive (e.g., days off) should also be collected. Further, it would be beneficial to have information about **funding and revenue streams at certain facilities** to better understand indirect costs at facilities where they were particularly high.

CONCLUSION

Overall, this three-country pilot provided useful, if varied, insights into potential cost drivers for FP/MH services in public, private nonprofit, and private for-profit facilities. Although the results from the pilot should not be generalized more broadly, similar themes that emerged across sites suggest opportunities for future inquiry. For example, before concluding that private sector costs per client may be too high for public sector purchasing, our analysis identified that a site's efficiency should be examined, as it is an important determinant in a facility's unit costs per service. Findings in Nigeria and Tanzania, as well as anecdotes from the local consultants, suggest that the for-profit facilities in those countries' samples may be underutilized; a comparatively low volume of service visits relative to higher staffing levels at for-profit as compared to public and nonprofit facilities in these countries contributed to significantly higher unit costs per service. Meanwhile, qualitative interviews in Nigeria confirmed that provider availability was one of the main challenges in FP/MH service provision in the public sector. Similarly, qualitative respondents in Tanzania stated that the public sector is severely overburdened, which may indicate that low public sector unit costs could reflect poor quality. In contrast, in the DRC we observed a wide range in client volume across sites within all three sectors in our sample, suggesting potential underutilization of some sites, regardless of sector. Efforts to increase utilization and efficiency of existing facilities could help to expand access to services and ensure efficient use of resources, though concurrently ensuring quality, equity and affordability would need targeted discussion and planning.

Future costing studies that include larger samples of facilities would allow for quantitative comparisons of costs across facilities in different sectors and could provide additional insight into how and why costs vary by facility characteristics, such as facility type, client volumes, and others. Overall, we found that the private for-profit sector generally had higher unit costs per service, driven by higher direct and indirect costs, including higher commodity and drug costs; larger maintenance and utility costs; and the number, type, and salaries of clinical and non-clinical staff. Additional data collection could also provide insight into the drivers of client volume and identify opportunities for efficiency gains in these other areas. A better understanding of these cost differences could help to ensure efficient healthcare utilization across a range of health providers in a country, including whether to purchase or subsidize private sector FP/MH services.

Additionally, the perennially important role of commodity and drug costs emerged in multiple settings, confirming that access to affordable, high-quality products for providers and clients is a critical cost determinant, whether these costs are financed through donated product or made affordable through market forces. In the qualitative interviews in Nigeria, for example, stakeholders identified consumables as one of the significant drivers of cost in the private sector, especially for FP commodities, which were often procured without the consumables required to deliver them. In the DRC, frequent stock-outs were noted as a significant challenge across facilities, but several stakeholders recommended that subnational partnerships for certain FP commodities and related training could help incentivize the private sector. Ensuring that any purchasing mechanisms provide reliable access to affordable and high-quality drugs and supplies would be an important component of sustaining access to FP and MH services.

Understanding the costs and cost drivers of service provision in the public and private sectors is an important early step in weighing whether and how to engage the private sector under publicly financed initiatives. While this analysis was conducted as a pilot, the approach shows promise in more affordably capturing granular and comparable site data to identify primary cost drivers for FP/MH services. Findings can help sector stakeholders identify areas for efficiency gains at the health system level; at the site level, findings may also help individual providers make more informed management decisions to improve efficiency. With low- and middle-income country health systems perpetually facing tight budgets and limited fiscal space,²⁸ ensuring data-driven budget allocation decisions is key to making scarce resources stretch as far and as equitably as possible.

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APPENDIX A: CONSIDERATIONS FOR REPLICATION

The tables below provide details on the process and data collection from the pilot with considerations for replication of the approach in other contexts. This information is being used to inform an updated set of tools (including a protocol, data collection tools and an analysis tool) that will be made available by MOMENTUM as a global good to allow the approach can be easily replicated in other settings.

Table 2. Key Areas for Costing: What was Conducted by the Pilot, and Considerations for Replication

	Conducted by the pilot	Considerations for replication
Partnership	Engaged local consultant in each country	Consider engaging a local research institute, especially if larger scale
IRB approval	Institutional Review Board (IRB) exemption (Tanzania) IRB approval (DRC, Nigeria)	Depending on setting, consider if the study may be eligible for exemption or require full approval
Site selection	Three public, three private non-profit, and three private for-profit sites selected (in Nigeria, data was only able to be collected from 2 for-profit facilities; an additional nonprofit facility was included).	Consider a larger number of sites to allow for better understanding of differences; consideration is also needed for the type of site (e.g., hospital vs clinic)
Health areas	FP (by FP method) ANC Labor and delivery (vaginal & c-section) PNC	Consider focusing on smaller set of health areas to facilitate more in-depth assessment
Data collection	Data collection tool developed in Word document. <i>(See table below for details on data collected)</i>	Consider refinement to data collection tools to add specificity and improve responses. Consider creating Excel-based data collection tools to streamline data entry.
Data analysis	Bespoke analysis tool built for one country then adapted for the other two countries	Consider aligning the analysis template with data collection tools, to allow for more seamless analysis.

Table 3. Details on Data Collection

Type of data	Details	Notes/challenges
Data related to staffing		
Clinical staff (separated by permanent vs contract)	Number staff by position Salary & benefits by position Share of time on 'costed' services	Some staff did not work full time; this needed to be captured explicitly. Some staff were 'volunteers' and not fully compensated; this needed to be captured explicitly. Asking staff to estimate time on costed services was challenging; consider alternative approaches (such as distributing relative to visits by service).
Non-clinical staff	Number by position Salary by position	Similar challenges as above.

(separated by permanent vs contract)		
Data related to service provision		
Service statistics	Three months of data on: client visits, laboratory tests (e.g., urine tests for protein, etc.), and services provided (e.g., tetanus vaccinations to pregnant women, deworming during ANC, births, cesarean sections, etc.).	<p>Not all service statistics data were available; some additional data were requested after the fact. Recommend refining template to match required data for analysis.</p> <p>There was some confusion among respondents about the difference between “clients” and “visits”. Not all providers collected both statistics. For example, in Nigeria, some facilities collected data on the number of visits, which was used along with the average number of visits per client for ANC or PNC services to estimate the number of ANC and PNC clients.</p>
Drugs	Unit cost Standard dosing per service	<p>Should have provided a more informed list of specific drugs available in-country and used for particular services through review of treatment guidelines prior to interviews, rather than open-ended questions using a generic drug list.</p> <p>Dosing information was often confusing; recommend providing more specificity and instructions that are more clearly linked to detailed service steps.</p> <p>Drug prices were sometimes unavailable; in these cases, the study used market prices or UNICEF/UNFPA list prices.</p>
Supplies	Unit cost Standard amount used per service	<p>Needed to provide specific supply list rather than open ended questions with a probe.</p> <p>Some costs unknown; utilized global normative assumptions on supply costs and use.</p>
Task-patient flow estimates	Who attends each step Number of minutes spent on each step	<p>Difficult to capture (1) multiple providers attending a stage, and (2) mix of types of providers attending a stage. In some cases, respondents said whoever is available does the task (could be a nurse, midwife, doctor, etc.).</p> <p>Needed to ask about steps in more detail (e.g., for ANC: registration of client, taking history, clinical examination, vaccination, etc.); consider activity-based costing and management (ABC/M) mapping approach to ensure all steps are captured.</p>

Facility data		
Equipment and furniture	Type of equipment & quantity Year received Capital cost (at time of purchase)	Data was often sparse; recommend probing further to better understand if this was due to limited equipment or challenges in answering questions. Sometimes cost was unclear (for 1 piece or <i>all</i> pieces when multiple items); recommend improving specificity.
Maintenance and utilities	Annual cost of maintenance	Limited data available; study utilized a technique based on estimated building size. Recommend including building measurement in the data collection.

APPENDIX B – DRUGS AND SUPPLIES INCLUDED IN THE STUDY

FAMILY PLANNING

PROVISION OF	DRUGS/METHODS	SUPPLIES
IUD	Copper T IUD Hormonal IUD	Gloves, surgeon's, latex, disposable, sterile, pair
Implant	Jadelle Implanon	Gloves, exam, latex, disposable, pair Lidocaine HCl (in dextrose 7.5%), ampoule 2ml Syringe, needle + swab Povidone iodine, solution, 10%, ml
Injectable	Three monthly injectable (note that no facilities reported providing DMPA-SC) Monthly injectable	Gloves, exam, latex, disposable, pair Syringe, Autodisable SoloShot IX Povidone iodine, solution, 10%, ml
OCPs	Combined OCPs Progestin- only OCPs	N/A
ECPs	Progestin-only ECPs Estro-progestin ECPs Ulipristal acetate ECPs	N/A
Condoms	Male condom Female condom	N/A
Other	Cycle beads Fertility awareness	N/A

ANTENATAL CARE

DRUGS	SUPPLIES
<p>Malaria: Sulphadoxine Pyrimethamine (malaria) Fansidar</p> <p>Anemia: Folic acid</p>	<p>Basic ANC - Full coverage (8 visits) Basic ANC - First visit only Tetanus toxoid immunization Syphilis screening Anemia screening Ultrasound before 24 weeks gestation</p>

<p>Fesolate</p> <p>Vitamins:</p> <p>Vitamin C</p> <p>B Complex</p> <p>Calcium</p> <p>Tetanus diphtheria vaccination</p>	<p>Tuberculosis (TB) screening: Verbal screening and X-ray for screen positives</p>
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VAGINAL DELIVERY

PROCEDURE	DRUGS	SUPPLIES
Routine Vaginal Delivery	Chlorhexidine surgical scrub, 5 ml	<p>Drawsheet, plastic, 90 x 180 cm</p> <p>Gloves, exam, latex, disposable, pair</p> <p>Cotton swab</p> <p>Partograph</p> <p>Delivery record</p> <p>ID bracelet</p>
Episiotomy	<p>Lidocaine HCl (in dextrose 7.5%), ampoule 2ml</p> <p>Paracetamol, tablet, 500 mg</p>	<p>Syringe, needle + swab</p> <p>Suture, catgut, chromic, 0, needle</p> <p>Gauze pad, 10 x 10 cm, sterile</p>
Active management of third stage of labor	Oxytocin, injection, 10 IU in 1 ml ampoule	Syringe, needle + swab
Induction of labor	Misoprostol, tablet, 200 mcg	N/A
Prolonged labor care	<p>Oxytocin, injection, 10 IU in 1 ml ampoule</p> <p>Sodium chloride, injectable solution, 0.9%, 500 ml, with giving set</p>	Gloves, exam, latex, disposable, pair
Infection treatment	<p>Sodium chloride, injectable solution, 0.9%, 500 ml, with giving set</p> <p>Ampicillin, powder for injection, 500 mg, vial</p> <p>Gentamicin, injection, 40 mg/ml in 2ml vial</p>	<p>Cannula, IV, 18G, sterile, disposable</p> <p>Water for injection, 10 ml ampoule</p>

Immediate newborn care	Chlorhexidine surgical scrub, 5 ml Tetracycline eye ointment, 1%, tube 5 mg Vitamin K, injection, 10 mg/ml, 1 ml	Gloves, exam, latex, disposable, pair Cotton swab Syringe, needle + swab ID bracelet Cotton wrap for newborn Umbilical cord clamp Blade, surgical, no. 22, sterile, disposable
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CESAREAN SECTION

<i>PROCEDURE</i>	<i>DRUGS</i>	<i>SUPPLIES</i>
Monitoring of labor		Gloves, exam, latex, disposable, pair Delivery record ID bracelet
Spinal anesthesia	Sodium lactate injection (Ringer's), 500 ml, with giving set Lidocaine HCl (in dextrose 7.5%), ampoule 2ml Epinephrine, ampoule, 1mg/ml Ephedrine HCl 30 mg/ml, injection 1 ml	Syringe, needle + swab
General anesthesia	Ketamine, 10 ml vial, 50 mg/ml Sodium lactate injection (Ringer's), 500 ml, with giving set Atropine sulphate, injection, 1 mg in 1-ml ampoule	Syringe, needle + swab
Prophylactic antibiotics and antiseptic	Cefazolin, ampoule, 500 mg Povidone iodine solution 10%, 500 ml	Syringe, needle + swab
Other		Foley catheter Urine collecting bag, 2000 ml
Procedure	Chlorhexidine surgical scrub, 5 ml	Cotton swab Blade, surgical, no. 22, sterile, disposable Suture, catgut, chromic, 0, needle Suture, non-absorbable, synthetic, 3/0, curved needle

		Gauze pad, 10 x 10 cm, sterile
If signs of infection	<p>Sodium chloride, injectable solution, 0.9%, 500 ml, with giving set</p> <p>Ampicillin, powder for injection, 500 mg, vial</p> <p>Gentamicin, injection, 40 mg/ml in 2ml vial</p> <p>Metronidazole, injection, 500 mg in 100 ml vial</p>	Water for injection, 10 ml ampoule
After delivery	<p>Pethidine, 50 mg/ml, 2ml ampoule</p> <p>Sodium lactate injection (Ringer's), 500 ml, with giving set</p> <p>Oxytocin, injection, 10 IU in 1 ml ampoule</p> <p>Paracetamol, tablet, 500 mg</p>	Syringe, needle + swab
Immediate newborn care	<p>Chlorhexidine surgical scrub, 5 ml</p> <p>Tetracycline eye ointment, 1%, tube 5 mg</p> <p>Vitamin K, injection, 10 mg/ml, 1 ml</p>	<p>Gloves, exam, latex, disposable, pair</p> <p>Cotton swab</p> <p>Blade, surgical, no. 22, sterile, disposable</p> <p>Syringe, needle + swab</p> <p>ID bracelet</p> <p>Cotton wrap for newborn</p> <p>Umbilical cord clamp</p>

POSTNATAL CARE

DRUGS	SUPPLIES
<p>Anemia:</p> <p>Folic acid</p> <p>Fesolate</p> <p>Vitamins:</p> <p>Vitamin C</p> <p>B Complex</p> <p>Calcium</p>	Preventive postpartum care