Chapter 14: An Application of the RTM Framework to Understand Primary Health Care (PHC) in Nigeria

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Key Messages

- **This framework provides a conceptually coherent approach to understanding how well (or poorly) resources are being generated and converted into medical and public health services, ideally with a strong emphasis on serving the poor.**
- **Applying this framework to the overall picture of health care financing in Nigeria suggests considerable challenges and room for improvement**.
    - *Resource mobilization:* Government health spending as a share of total government spending is only 5% and government health spending as a share of total health spending is 13%. As a consequence, private out-of-pocket spending constitutes 75% of total health expenditure (THE).
    - *Resource allocation:* Hospitals and health administration capture a very large share of government health expenditure, 48% for hospitals and 44% for health system administration and financing, which leaves little for ambulatory and preventive care. Local governments are largely responsible for paying for PHC.
    - Resource utilization: As in many countries, capital budgets are chronically underutilized. Recurrent budgets are generally spent since most recurrent costs are consumed by salaries and in fact, a large part of government health spending is consumed by salary costs.
    - *Resource productivity:* Resource productivity is quite low in Nigeria as evidenced by the low rate of consultation at PHC levels. What is notable is that overall levels of human resources in Nigeria are close to WHO norms. The picture is one where low levels of government financing force PHC facilities to impose user fees on clients, lowering consultations. Providers at the PHC level end up seeing very few patients. The low level of public financing also impacts resource productivity in other ways, through absenteeism, drug and equipment shortages, and low levels of provider knowledge.
    - *Resource targeting:* Resource targeting is poor for several reasons. First, government health spending is focused on hospitals and administration, which predominantly benefit the urban and wealthy. Second, the defacto policy of allowing user fees at the primary level means that poor and rural populations have to pay for care, which few do as they choose instead to not seek care or seek care in the private sector. In either case, public spending does not benefit the poor.
- **The analysis from an application of the RTM framework suggests some promising reforms such as greater demand-side financing, strengthening fiscal policy, health financing pilots that reward results, and induce shifts in financing across tertiary, secondary, and primary care levels.**

Policy relevance of RTM framework for Primary Health Care in Nigeria

Nigeria is the largest country in Africa by population size with approximately 195 million inhabitants in 2018 (World Bank Data Bank 2019). Poverty is high as is the burden of disease. Nigeria is a high priority

for donors and is the second largest recipient of ODA in Africa (OECD ODA, 2019). While Nigeria has many poor people, it has a per capita GDP of $2,563 (constant 2010 $US), which puts Nigeria into the lower middle-income classification according to World Bank criteria, (World Bank Data Bank, 2019).

Nigeria did not meet health targets for the Millennium Development goals on indicators such as under 5 mortality and maternal mortality. Moreover, coverage rates for key maternal and child health interventions such as antenatal care, births attended by skilled provider, and delivery in a health facility have been largely stagnant since 1990, as measured by the Demographic and Health Survey. These persistent health challenges in the context of a large country favored by donors and economic growth make the application of the RMT framework a highly valuable exercise to better understand the translation of economic resources into medical and public health services and ultimately on population health.

Resource Mobilization in Nigeria

Per capita GDP (constant 2010 $US) is approximately $2,563. However, while total health spending was moderately high for Sub-Saharan Africa at $79 per capita in 2016 (current $US), public spending on health is very low from several perspectives. Government health spending as a share of general government expenditure was very low at 5% in 2016. Even as a share of total health expenditure, domestic government expenditure only accounts for 13% in 2016. This implies that other sources of financing, largely private, account for the remaining 87% of health expenditure. And in fact, out-of-pocket expenditure accounts for 75% of total health expenditure in 2016. (World Bank World Development Indicators, 2019; WHO NHA, 2019)

Reference to several international benchmarks for health spending serves to interpret the severity of the pattern of low levels of government financing for health and high levels of private out-of-pocket (OOP) spending. One common reference point is the Abuja target that government spending on health as a percentage of total domestic government expenditure should exceed 15%. As noted above, Nigeria spends about 5% of general government expenditure on health, so it falls short of the Abuja benchmark.

Another more recent series of benchmarks for health spending were established by the Lancet Commission on Investing in Health that, “Countries should commit to a target of OOP payments to represent less than 20% of total health expenditures, to a target of government health expenditure (GHE) to represent at least 5% of Gross National Product (GNP), and to a target of government health expenditures per capita (GHEpc) to be at minimum $86 whenever possible.” The table below shows that relative to the Lancet Commission on Investing in Health recommendations, Nigeria falls short on every benchmark (Table 1).

Table 1: Nigeria Health Spending Relative to Lancet Commission Recommendations

Indicator	Lancet Commission Recommendation	Nigeria Actuals, 2016
Out-of-pocket payment (OOP) as a share of THE	<20%	75%
Government health expenditure (GHE) as a % of GNP	≥5%	0.48%
Government health expenditures per capita (GHEpc)	≥$86	$10 ($US) $28 (PPP)

Source: [Lancet Commission on Investing for Health and WHO NHA Statistics]

Nigeria is a federal system where states and local government areas (LGAs) have the ability to levy taxes and generate resources for government. In addition, the federal government has a complicated system for revenue sharing amongst the states that we will explore later in this chapter. At the subnational level, government spending on health at the state level is also quite low. As the data below shows, several states are funding health at a level below the national average of $10 per capita (Table 3).

Table 2: Annual State Per Capita Expenditure on Health

State	Baseline GHEpc, 2010	Current GHEpc, 2012
Enugu	$9.1	$16.8
Jigawa	$6.4	$7.4
Kaduna	$3.0	$5.5
Kano	$9.3	$9.3
Lagos	$6.6	$6.7

Source: PATHS2 Annual Report, September 2012

A discussion of resource mobilization in Nigeria would be incomplete without some additional public finance data and perspectives. Nigeria has long relied on oil revenues to fund the government and generates very little from taxes. Tax revenue as a share of GDP was only 1.48% in 2013 (latest available) (World Bank Data Bank, 2019), while oil exports are estimated to account for 65% of government revenue. (Nigeria Extractive Industries Transparency Initiative, 2019)

From a resource mobilization perspective, it is clear that the Government of Nigeria captures very little of GDP in taxes and instead relies heavily on oil exports to fund the government and allocates very little government revenue for health. At the state level, low funding of health is seen as well. Consequently, financing for health relies heavily on OOP payment.

Resource Allocation

The table below shows the allocation of GHE as a percent of GHE to providers at various levels: total government, federal government, and LGA (Table 4). (Reem Hafez, 2018)

Table 3: Share of Government Health Expenditure by Provider in Millions of Naira and Percent (2014)

Provider	Total Govt	Federal	State	LGA
Hospitals	277,293 (48%)	177,200 (48%)	100,094 (61%)	
Providers of Ambulatory Care	41,812 (7%)	6,270 (2%)	1,373 (1%)	34,964 (82%)
Providers of Preventive Care	3,407 (1%)			2,649 (6%)
Providers of Health System administration and Financing	251,424 (44%)	181,114 (50%)	62,124 (38%)	5,186 (12%)
Total	573,936 (100%)	364,584 (100%)	163,591 (100%)	42,799 (100%)
GHE per capita in LCU and US$*	3,006 (LCU) US$8.35	1910 (LCU) US$5.31	857 (LCU) US$2.38	224 (LCU) US$0.62

* Population in Nigeria in 2017 was 190,886,311, according to World Bank Data Bank.

From a resource allocation perspective, the picture is one where most of GHE is spent on hospitals and administration. For total government, this figure is 92% of GHE. LGAs are largely responsible for PHC and the LGA share of ambulatory care is high at 82% reflecting the focus on curative PHC services. However, the level of funding is quite low, with total LGA GHE only 224 Naira per person or US$0.62 per person. And overall, the level of GHE per capita for all providers included is very low at 3006 Naira per person or US$8.35 per person.

From a World Bank Service Delivery Indicators survey, we have data that highlights some of the challenges associated with such low levels of funding for PHC. The data from the survey shows that 50% of PHC facilities receive no non-salary recurrent funding and 85% of PHC facilities receive less than US$100 per month, a figure that is estimated to be a minimum level to enable functionality (The US$100 per month figure was estimated by several PHC nurses during interviews in Nigeria). The picture is one where very little funding is received to support the actual service delivery activities. As a result, most PHC facilities resort to user fees and drug charges and the Service Delivery Indicators (SDI) data shows high levels of user fees and charges levied on consumers. Data from the 2016 National Health Facility Survey estimates that 74% of PHC facilities report charging user fees for drugs, delivery services, and antenatal care.

In addition to underfunding, budget execution is an issue. For example, the average capital budget utilization rate in the health sector is 61.5% from 2000 to 2011. Government funds were released too late in the year to spend, and therefore were returned to the central treasury. In Kaduna, the health budget in 2009 constituted about 12.8% of total state government revenue; however, only about 50% this budget was actually released.

A myriad set of factors inherent in the structure of governance in Nigeria make public financing of PHC a challenge. LGAs have limited revenue generation prospects on their own. In principle they receive funds via the Federation account, but these are channeled via the state, which often does not flow funds down to the LGAs. PHC financing thus depends primarily on state government and the willingness of the state governor, and in part on the LGA Chairman, for allocating budget for health. The end result is very low funding for PHC at the LGA level.

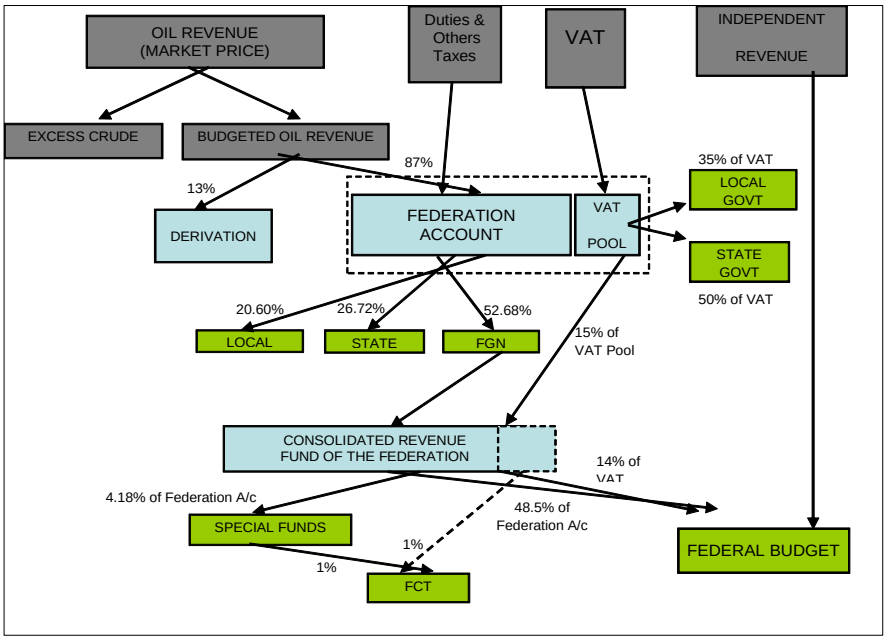
The federal government channels resources for health through the Federal Ministry of Health (FMoH), the states' Ministries of Health, and the Departments of Health at the LGA level. In contrast to the centralized systems for revenue collection, spending powers are completely decentralized. Revenues from the federal government are shared among the tiers of government on a monthly basis. Revenue flows to the states and LGAs as unconditional transfers and expenditure decisions are taken independently. The federal government does not have a constitutional mandate to compel other tiers of government to spend in accordance with its priorities.

State governments receive funds for health from the Federal Allocation, Internally Generated Revenues, VAT revenue, as well as grants from local and international partners. A diagram of the funds flow of federal resources is shown below (Figure 1). The Kaduna resource tracking study reported that contributions from the Federation Account were about 73% of total state government revenue in 2009. In Kaduna, the health budget in 2009 constituted about 12.8% of total state government revenues, and the actual amount of health funds released were about 6.7%. Actual release of funds for the health sector in Kaduna state hovers at 53% of planned budgetary allocations and has been on a decline since 2004. This weak execution of the health budget in Kaduna could be due to a number of reasons. There

may be low absorptive capacity in the state health system; this may also be the result of an ambitious planning process that does not correspond with the realities of the budget situation or possibly political over-promises on health spending.

The LGA system has been part of the Nigerian fiscal structure since 1976. The LGAs receive 20.60% of the Federation Account and are expected to play a leading role in the provision of basic services, such as PHC and primary education. However, the lack of capacity to manage resources at the LGA level raises concerns around the quality of local policymaking and implementation.

Figure 1: Federal Revenue Sharing in Nigeria



Federal funds allocated to the LGAs must first pass through the states. In many instances the flow of funds from the state to the LGA is limited, constraining local spending capabilities. Some argue that limiting the flow of funds is prudent considering the low capacity of LGAs to carry out their responsibilities. When the LGA is unable to manage its basic responsibilities, such as paying local government health workers, the states may attempt to take over the LGAs functions. Political motivations at the state level may also drive uncertainty in the flow of funds to LGAs. As a result, a large proportion of LGA revenue is captured at the state level and frequently does not find its way down to the LGA. Often, LGAs receive just enough funding to pay staff salaries. Because LGAs chairmen are installed by the state government, their ability to demand release of the allocated funds is limited. How to empower and increase capacity at the LGA level is an on-going topic of debate.

Resource Utilization

Nigeria has long faced challenges in implementing budgets, particularly capital budgets. (Uche Atuma, 2017) Recurrent budgets, which are largely comprised of funding for salaries, typically are fully implemented. We have several sources of data to provide insight into budget execution.
From a PATHS2 Public Expenditure Management Review in Kaduna state we have the following findings. In 2009, the health capital budget for the state was estimated around N7.9 billion, of which approximately 3.6 billion were released (about a 46% execution). For recurrent spending, the budget was around N4.4 billion, with an actual release of N2.9 billion (66% execution). In total, actual release of

funds for the health sector in Kaduna state was merely 53% of the planned budgetary allocations. At the LGA, level the findings show that recurrent budgets are typically fully expended and in fact some LGAs exceed their budgeted amounts.

Another Public Expenditure Management Review in Cross River finds similar results. (Marianne El-Khoury, et al. 2012)

> "*A significant portion of the SmoH's health budget is not actually spent.* According to data provided by the Budget Office and Office of the Accountant General in Cross River state, health spending by the SmoH ranged from 63% of the health budget in 2007 to 73% in 2010. This is not particular to the health sector – in fact, according to state figures, only 62.5% of the total budget of the state is actually spent. While recurrent spending averaged 86% of the budget from 2007 to 2010, capital spending averaged 42%. *Consistent with the trends observed at the state level, health spending at the LGA level averages approximately 59 % of the budget.* There is a wide variation in spending across LGAs. Actual spending in health ranges between a low of 14% of total budgeted funds (in Akampka) to a high of 100% (in Boki). This variation is seen at the level of both recurrent spending and capital spending. In some LGAs, such as Calabar Municipal, low budget execution is primarily driven by low capital spending, while in other LGAs, such as Yakurr and Yala, low spending is driven by the recurrent portion of the budget."

These findings are similar to what was found from an analysis of state budget execution in Yobe and Kano during a PRINN-MNCH Midterm review in 2010 where, Yobe state only spent about 11% of its approved 2010 budget for health. Several other states only got to 50%. Other issues were noted as well such as "Ghost" health workers. In Yobe, 432 Nurse-Midwives draw a salary but PRRINN-MNCH could only find 97 actually at post. (C. Bradford and S. Dobson, 2011)

Resource Productivity:
One bright spot in Nigeria is the relatively high levels of human resources in the health sector. Relative to other countries in Africa, Nigeria has much more abundant human resources for health. The staffing levels in Nigeria even come close to WHO recommended staffing norms.

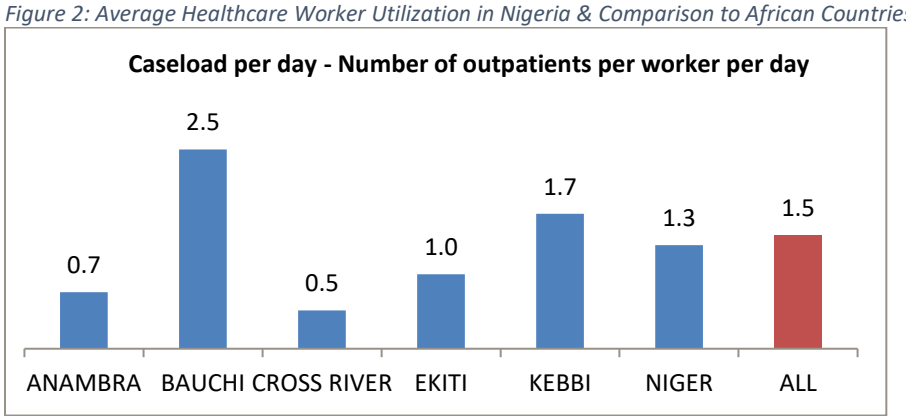
Table 4: Human Resources for Health

	Doctors, Nurses and Midwives per 10,000 population
WHO recommended level	23
Nigeria	20
Kenya	13
Rwanda	5
Ethiopia	3

Despite the relative abundance of human resources for health, productivity in the health sector is quite low. Other factors affecting resource productivity are that: absenteeism is high, knowledge of staff is low, equipment is missing or not working, and drugs and needed supplies are lacking. The data to support these assessments comes from the World Bank Nigeria Service Delivery Survey referenced earlier. The SDI data was collected in 2013 from a sample of public primary care facilities in 6 states (Figure 2). From these data we can learn about a variety of factors that affect performance at the actual

facility level. There are basically four items that need to come together for a successful health interaction to occur: an knowledgeable and present provider, working infrastructure, the commodity/medicine being available and finally the patient. We examine resource utilization generally looking at utilization of facilities as measured by caseload, the number of outpatients per health worker per day. Then we will cover the main issues that can thwart the production of a successful outpatient visit: ie provider absenteeism and knowledge, unavailability of basic equipment and drug stock outs, and prices charged to patients.

Figure 2: Average Healthcare Worker Utilization in Nigeria & Comparison to African Countries

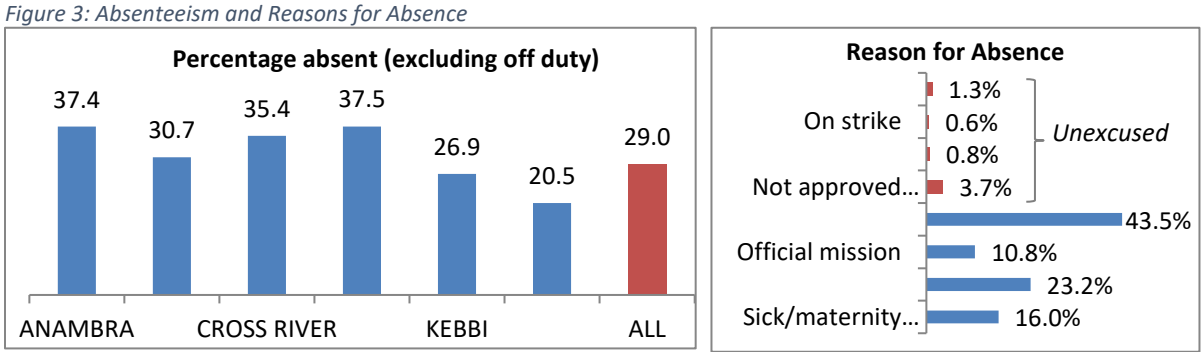


Caseload per Day	
Kenya	8.7
Uganda	10.0

Source: Service Delivery Indicators (SDI)

Starting with the provider, we have seen previously that at a high level that there does seem to be an adequate number to service the necessary population (accepting that there may be regional variation so that some areas are underserved). Provider absenteeism, however, is an important factor that can reduce the availability of those providers and deter clients from seeking care. The two graphs below show the extent of absenteeism and the reason for being absent (Figure 3). The absence rate was 29% for the sample of facilities, suggesting that 29% of the providers who were supposed to be at post were actually absent. The reason is largely a management issue as most of the providers were on excused absence. However, regardless of the reason, the impact for clients is negative if providers are not available or wait times are long.

Figure 3: Absenteeism and Reasons for Absence

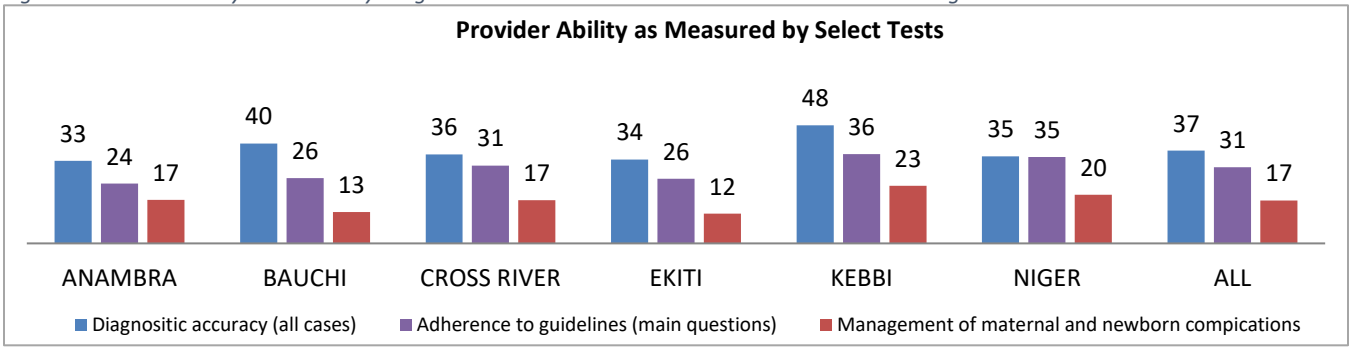


Source: Ibid

Provider knowledge and ability is an important determinant of quality of care and overall efficiency of care. Provider ability was measured using clinical vignettes, which are validated clinical cases that are designed to test provider knowledge for how to treat certain common conditions associated with primary care (Figure 4). Clinical vignettes were done on 7 conditions: 1) Diarrhea in a 13-year-old boy, 2)

pneumonia in 5 year old girl, 3) adult diabetes, 4) adult TB (presumptive, persistent cough and fever), 5) malaria + anemia in 5 year old boy, 6) post-partum hemorrhage in 26 year old woman who recently delivered, and 7) acute respiratory distress in a newborn. The low scores for provider ability in Nigeria raise questions about the quality of care at the primary level.

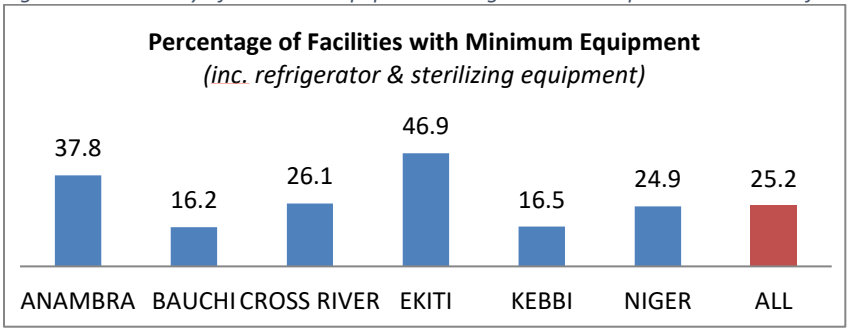
Figure 4: Provider Ability to Accurately Diagnose and Treat Common Conditions at PHC Level in Nigeria



Source: IBID

Second, a minimum set of equipment and infrastructure is necessary for service delivery by the Ministry of Health (MOH). This includes things like sterilizers, refrigerator (if applicable), stethoscopes, blood pressure cuffs, etc. The equipment that the MOH deems every PHC facility should have is taken as a reference. The graphs below show the availability of the minimum set of medical equipment by state. Only 25.2% of facilities have all the required minimum equipment (Figure 5). Essential drugs and vaccines are also critical inputs into the provision of health services. The graph below shows the percentage of health facilities with the required essential drugs and vaccines in stock. Vaccine availability, overall, is better than for essential drugs but far from universally available.

Figure 5: Availability of Minimum Equipment in Nigeria and Comparison to Other African Countries

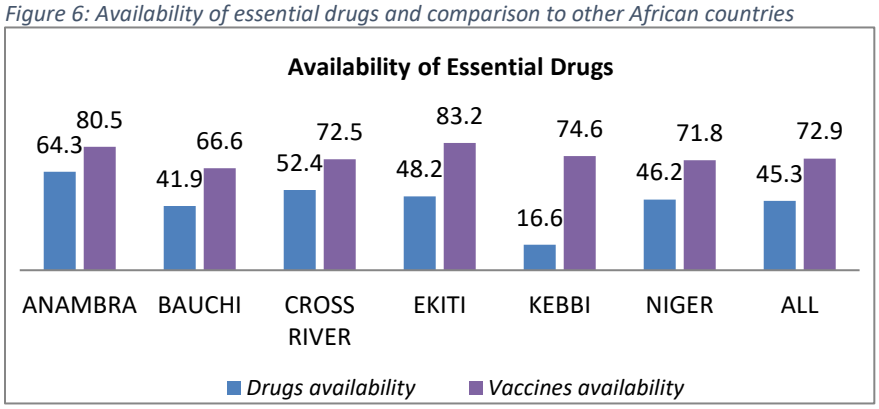


Percentage of Facilities with Minimum Equipment	
Kenya	77%
Senegal	53%
Tanzania	78%
Uganda	18%

Source: IBID

The next issue to be examined is the availability and quality of drugs, where quality is measured as drugs not past their date of expiry. As seen below, vaccine availability is fairly high, but drug availability shows considerable room for improvement (Figure 6). Data on drug expiry is not shown.

Figure 6: Availability of essential drugs and comparison to other African countries



Percentage of Facilities with Minimum Essential Drugs	
Kenya	52%
Senegal	78%
Tanzania	76%
Uganda	40%

Source: IBID

The last graph shows a summary of the SDI data for Nigeria compared to the values found in the other countries where SDI surveys have been conducted (Figure 7). This enables a comparison of Nigeria relative to other countries in Africa. The functionality of primary care is not as high as one would like across the board in these five countries, but Nigeria stands out in terms of the low caseload, the lack of minimum infrastructure and equipment, and some of the lowest scores on provider ability.

Figure 7: Comparison of Key PHC Facility Indicator Across Select African Countries

	Nigeria	Kenya	Senegal	Tanzania	Uganda
INPUTS					
Minimum infrastructure	18%	39%	39%	19%	47%
Minimum equipment	25%	77%	53%[a]	78%[a]	18%
Drugs availability	45%	52%	78%[b]	76%[b]	40%
Drugs availability – children	47%	69%	--	--	34%
Drugs availability – mothers	44%	41%	--	--	23%
Vaccines availability	73%	83%	--	--	58%
EFFORT					
Absence rate	29%	29%	20%	21%	47%
Caseload per day	1.5	8.7	--	--	10.0
Time spent with patients			39 min	29min	
ABILITY (*Share of providers able to…*)					
Correctly diagnose common conditions[c]	36%	74%	34%	57	58%
Adhere to clinical treatment guidelines[c]	31%	43%	22%	35%	35%
Correctly manage maternal and neonatal complications[d]	17%	44%	--	--	20%

Notes: Public Facilities Only
[a] Only 3 items were considered: weighing scale, thermometer and stethoscope as opposed to 2 additional items in the other countries: refrigerator and sterilizing equipment.
[b] Only 15 drugs were considered as opposed to 10 priority drugs for children and 16 priority drugs for mothers.
[a] Acute diarrhea with dehydration, Malaria with anemia, Pneumonia, Tuberculosis, and Diabetes.
[b] Post-partum hemorrhage, and Neonatal asphyxia.

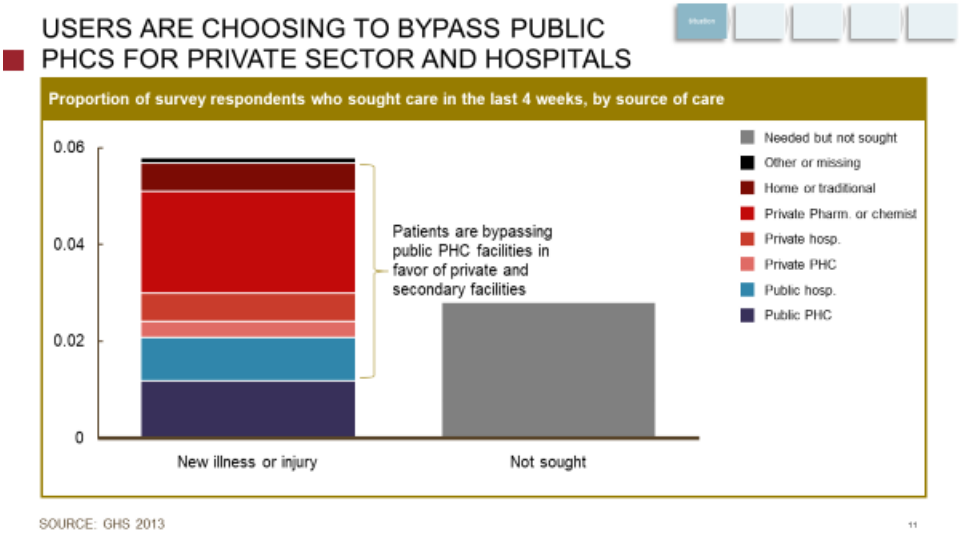
Resource Targeting

Two key questions to be answered in an analysis of resource targeting are the following: Are inputs reaching the intended individuals and populations? Is public spending pro-poor? We have several data points we can rely on to answer these questions.

We know already from data shown that resources do not get to the PHC level. Moreover, we have seen that utilization of PHC services as measured by caseload is very low, suggesting that the public benefits little from the low levels of public expenditure. This can be seen in sharper relief by looking at where people go for care generally. Data from the Nigeria General Health Survey in 2013 show that many patients choose not to seek care but that of those who do seek care, by far the majority seek care at

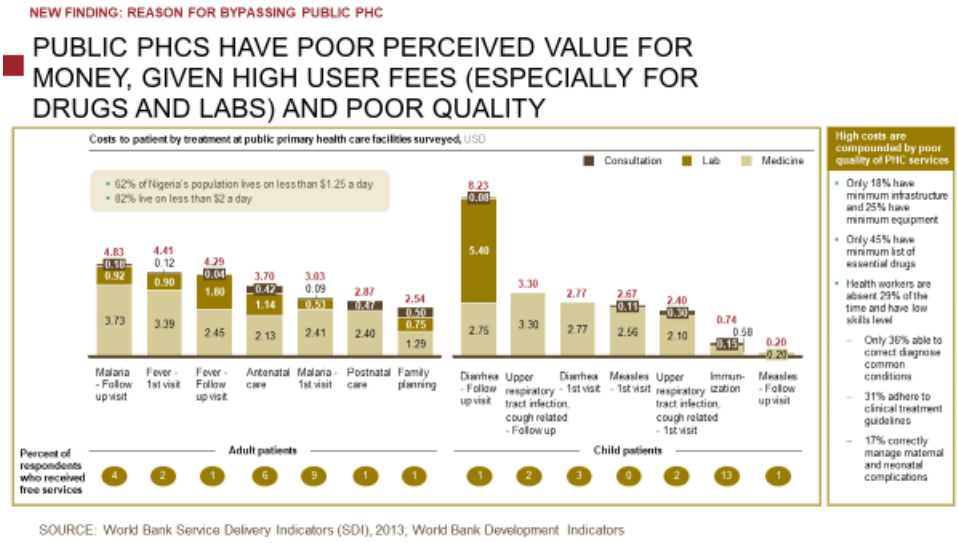
sources other than public PHC facilities with two most common choices being private pharmacies and public hospitals (Figure 8).

Figure 8: Bypassing of Public PHC Facilities in Nigeria



The low utilization of public PHC facilities results from several factors. Quality is clearly a factor as discussed above in terms of basic equipment, drug stockouts, provider knowledge, and absenteeism. Prices charged in public facilities are also very high and can act as a deterrent. Again, data from the SDI survey shows that prices are quite high in public PHC facilities (Figure 9).

Figure 9: Prices in Public PHC Facilities in Nigeria



Moreover, it is typically the case that in urban areas, private providers and drug sellers like Private Patent Medical Vendors (PPMVs) are abundant and oftentimes less expensive that a consultation at a public PHC facility.

A benefit incidence analysis (BIA) of priority public health services was done in 2012 that had several interesting findings. (Onwujekwe et al. 2012) First, the study found that relatively few individuals consumed wholly free services (14.8%) despite official government policy being that the services in question be free. Second, despite this, poorer quintiles and rural residents received more benefits, though only for males and not females. It should be noted that this BIA study focused only on priority health services that are supposed to be free in Nigeria and not on total health spending, which covers a great deal of hospital care as well.

Policy Implications of RTM Framework Analysis in Nigeria

The application of the RTM framework helps to understand how finances impact on health. Implicit in the framework is the idea that if adequate resources are mobilized, allocated, utilized, put to productive use, and targeted appropriately towards the poor, then financing can have a large positive impact on health. The reality in many countries is that leakages or loss of value can occur at each of these points in the framework. This framework provides a conceptually coherent approach to understanding how well (or poorly) resources are being generated and converted into medical and public health services, ideally with a strong emphasis on serving the poor.

Applying this framework to the overall picture of health care financing in Nigeria suggests considerable room for improvement. Government resource mobilization for health is very low (13% of THE) with a very high level of private out-of-pocket financing (75% of THE). Government funding is low historically as Nigeria has relied primarily on oil revenues and raises little via domestic tax collection. Allocations to the health sector are also low. Fiscal Federalism for the health sector in Nigeria means that the federal government is largely responsible for teaching hospitals, medical education, and the mandate of the FMoH. State governments are responsible for tertiary and secondary hospitals with local governments in charge of PHCs. Nigeria's system of defined revenue sharing combined with the split of responsibilities for care across federal, state, and LGA government tends to result in very low levels of funding at the LGA, and thus PHC level, and very high levels of hospital financing at federal and state levels. The low levels of government financing mean that health facilities are forced to levy user fees, further exacerbating the high levels of out-of-pocket spending. The little funding actually received is largely focused on salaries with negative consequences for the availability of drugs, other medical equipment, and maintenance. Faced with high costs of care even in the public sector, consumers opt to seek out and use care in the private sector, which also drives up private out-of-pocket spending. With care seeking low in public PHCs, productivity is low as well. Drug and equipment shortages as well as gaps in provider competence exacerbate the low levels of utilization.

Health care financing in Nigeria, as in many countries, is complicated and views may differ significantly on which are the most promising policies. However, the analysis from an application of the RTM framework suggests some promising reforms. Demand-side financing efforts need to increase to shift funding from supply-side inputs to cover a basic benefit package for defined populations, free of charge. Ideally, this package could be made available not only in the public sector but also in the private sector where private providers could be reimbursed for care provided. The output-based financing pilots implemented with support and financial assistance of the World Bank are another promising demand-side approach. Consistently tracking and then increasing funding flows to the LGA level for PHC is another priority. Building better fiscal capacity to levy taxes and capture a larger share of the growth in GDP that has been a major benefit for Nigeria's economy has to be a major priority as well. Eventually, pilots should be implemented that pay for results in an integrated way for tertiary, secondary, and primary level care. The experience in the US under the Affordable Care Act has been that a strong result-based outcome combined with a hard budget constraint will encourage an allocation of resources and

effort towards lower cost and more effective primary care level. Keeping these levels and their funding siloed will prevent reallocations that would be efficiency enhancing and create more health for the naira.

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