The relationship between wealth and use of health services in the private sector: A literature review and secondary data analysis focusing on family planning and common childhood illness

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Executive Summary

In order to understand if and how well the poor are being served at health facilities, social franchises and other service providers have begun to systematically assess the wealth of their clients. Understanding whether or not the relatively poor are seeking health services at a particular type of facility is only moderately helpful without associated context. If the poor are not coming to one type of facility, are they instead seeking care at another facility type? Does the wealth profile of clients differ based upon the type of service being sought?

While this analysis found some information in the published literature to describe this relationship, analyses did not differentiate between the variety of non-public sector facilities, or aggregated results from individual countries into regions. Studies made clear that there is variation in the use of the private sector by the relatively poor – regionally, and by reason for seeking care.

After investigating the available literature, this analysis focused on Family Planning and Integrated Management of Childhood Illness (IMCI) services, and looked at patterns of need and use of health services across 44 low- and middle-income countries. We found that modern contraceptive prevalence rates (mCPR) vary widely, from 4.6% in the Guinea to 72.9% in Colombia without an obvious relationship between modern contraceptive prevalence rates and use of the private sector. For the childhood illnesses of diarrhea, fever and acute respiratory infection (ARI), prevalence was remarkably similar across countries, and could not explain the variation in proportion of sick children for whom formal treatment was sought. For example, 31% of children with self-reported ARI symptoms sought treatment in Tanzania, compared to 65% of children in neighboring Kenya. The lack of a discernable pattern across countries for private sector use of FP and child health services led to a more in-depth analysis of 12 countries.

Data from Bangladesh, Cambodia, Democratic Republic of Congo, Dominican Republic, Ghana, Haiti, Kenya, Liberia, Mali, Nigeria, Senegal and Zambia was examined to understand the use of FP and child health services across different public and private sector facility types, and by wealth. The results are represented in a series of graphs, and indicate that there are distinct regional and country differences in the use of clinics versus pharmacies, care-seeking for a sick child, and use of the public versus private sector, across wealth quintiles.

The secondary analysis of DHS data revealed that in some countries, the public sector is favored for treatment for children, while in others, the private sector holds a large advantage. The same countries which favor the public sector for childhood illness do not necessarily favor it for family planning services. There is also not a clear relationship between use of services in one sector, and desirable outcomes. For example, greater use of services in one sector (public or private) does not correlate with higher contraceptive prevalence rates in countries. Consequently, generalizations cannot be made across countries with regard to use of private sector services. Rather, country and health area specific information is warranted.

There were also clear differences in where individuals from different wealth quintiles sought family planning services and care for children with diarrhea, fever, and ARI. In West African countries, family planning users are concentrated among the wealthy, and favor the private

sector, as compared to poor women. The same differential is not seen in the Asian or Caribbean countries, with similar proportions of women using family planning in all wealth quintiles. For children suffering from diarrhea, treatment in the private sector is favored among all wealth quintiles in Bangladesh, Cambodia and Nigeria, whereas the public sector is almost exclusively used for those who sought treatment in Senegal and Zambia. These differences are examined further, and are visible in the graphs presented.

In examining the contribution of social franchises, additional information is required. The DHS data cannot be disaggregated to demonstrate the contribution social franchises make to providing critical services. Country level assessments of care seeking by sector and wealth, further analysis of why the same household makes different choices in care-seeking, and comparing the wealth profile of franchised clients with others will further our understanding of the role of franchises in private sector health care, and country health systems more generally. For social franchises seeking to place their clients in a broader context, these results suggest that at minimum, national analyses of secondary data should be conducted in order to understand where the relatively poor and wealthy clients seek health services. More in-depth studies, such as proposed by Metrics for Management in Kenya following this review and analysis, can provide answers to why clients choose particular service providers. This in turn will help implementers and policy or financing decision makers to make more strategic decisions on policies and resource allocation.

Introduction

Many health programs in developing countries aim to serve the poor, often defined as the poorest 40% of the total population or as those living below $1.90/day. Equity in the utilization of healthcare services, as well as the differences in health outcomes based on socioeconomic status, is of interest to donor organizations, program leaders, researchers, and governments. Research shows us that poorer patients are more likely to go without healthcare than wealthier patients, and to spend proportionately more of their incomes on healthcare (1,2). Policy makers and program leaders need to understand differences in who is served by various health service outlets in the public and private sectors, including within social franchising services. There are trade-offs between access to care, quality of care provided, and costs that must be balanced (3), making it important to put program performance in context in order to make informed policy and program decisions.

While many social franchises aim to serve the poorest wealth quintiles, a systematic review by Beyeler *et al*. found that social franchises serve relatively higher income patients. Both household surveys and exit interviews in Pakistan showed that wealthier women were more likely to visit a social franchise clinic, while poorer women were more likely to use non-franchised services. While the same results were shown in Ethiopia, a single study in Myanmar showed that franchised clinics in urban areas served a higher proportion of poorer clients, although there was no difference in rural or national samples (4). A study on a Nepalese franchise reported pro-poor results, while work in Bihar did not demonstrate any statistically significant association between household income and use of franchised services (5). These mixed results point to the need for additional research to understand the relationship between a client's wealth and their use of health services. Some of the differences may be driven by the services being sought.

As social franchise organizations and other not-for-profit and for-profit service providers have begun to systematically assess equity by capturing the wealth profile of their clients, questions are emerging regarding what an optimal client wealth distribution should be, and how clients at one facility type compare to another facility type including public, private for profit, and not-for-profit institutions.

This paper presents a review of the published literature with regard to use of primary health services by source of care and client profile. It is supplemented with descriptive results from an array of recent Demographic and Health Surveys (DHS). The first section reviews the literature. The second section describes the data and methods used for the secondary analysis. The third section presents the results of these analyses, followed by a conclusion. These analyses support the planned research study in Kenya to systematically assess client wealth across multiple types of health facilities.

Section 1: Public versus private care

Private providers deliver a significant portion of healthcare services in low- and middle-income countries (LMICs) in both rural and urban areas, for low socioeconomic groups and for the wealthy (1). Most literature uses large-scale surveys such as the Demographic and Health Surveys as the source of data, and consequently uses wealth quintile as the measure of socio-economic status. The wealth quintile is constructed from DHS data using an index of assets, and divides the population into five equal groups. While the precise levels of private provider provision, especially for differing wealth quintiles and service types, is not well understood, important differences in private sector use by individuals of different socioeconomic status have been recorded. For example, there is high use and high variation in use of the private sector for treatment of fever, diarrhea, and for family planning services (estimates ranging from 5-90% of services delivered by the private sector). There is less variation in antenatal care and delivery services, where globally, an average of 40% of women use the private sector for these services. Use of the private sector varies by region and service type, highlighting the need to better understand where individuals from different wealth quintiles seek healthcare (6).

We see large regional variance in use of the private sector. In sub-Saharan Africa, healthcare service delivery is nearly evenly divided between the public and private sector for all wealth quintiles. In Southeast Asia, approximately 65% of the lowest wealth quintile seeks care from the private sector, compared to approximately 80% of the highest wealth quintile, while the private sector provides nearly 80% of care across all quintiles in South Asia. And in Latin American and the Caribbean, the lowest wealth quintile receives approximately 22% of care from the private sector, while the highest wealth quintile receives 61% from the private sector (7).

However, research on the equity of private provision of health care is inconclusive (8). In high income countries, national surveys using income and health service utilization data have shown that access can become less equitable when a private sector option is available (9,10). Some analyses have shown that provision of care in the private sector is inherently inequitable, with significantly greater services accessed by the wealthy (2). Others have shown that strategies such as contracting out services to the private sector can improve equity, or minimally, that a growing private sector does not harm service delivery equity (11,12). While policymakers have often invested more in public sector service delivery, there is growing interest in how the private sector can complement the public sector (3).

Studies assessing the equity of social franchising as a service delivery strategy are limited, but indicate that franchises can serve poorer clients (3,4,13). For example, in Myanmar, a study of the Sun Quality Health franchises providing treatment for tuberculosis found that these clinics are treating patients who are poorer than the general population in urban areas (14). A 2011 study found that in Pakistan the costs per client and the proportion of clients in the lowest wealth quintile did not differ between franchised and non-franchised private clinics. However, in Ethiopia, franchised clinics had higher costs and saw a smaller proportion of clients in the lowest wealth quintile (3). It is important to look more closely at the variety of private providers, alongside public providers, and the populations they serve in low- and middle-income countries. Large-scale household surveys such as the DHS offer

some details on the type of private sector care sought, but not whether or not it was a franchise. It is also important to examine different patterns of use by the type of health service needed, as the private sector is not used to the same extent for all service needs. This review examines services for family planning and childhood illness, specifically diarrhea, fever and ARI, in more detail. These services were chosen because they are included in DHS surveys, and are provided by social franchises.

Family planning services

While public providers are the primary source of family planning services, for-profit private sector providers are responsible for a large portion of family planning services in Asia and Africa, and nongovernmental organizations (NGOs) provide a large portion of family planning services in Latin America (6). The recent reinvigoration of family planning funding through the FP2020 movement has led to an increase in research on the effectiveness of private sector family planning programs. For example, one comprehensive meta-analysis of DHS data from 57 LMICs systematically looks at use of family planning by sector, by type of private sector source, and by characteristics of the respondents, including wealth, education, and method chosen (15). These interesting results, summarized below, are supplemented by other smaller studies that investigate why women choose one sector over another in various countries.

Campbell and colleagues (2015) find that while overall contraceptive prevalence is much lower in Sub-Saharan Africa as compared to other regions, the private sector share of family planning is remarkably similar (37-39% across all regions) (15). Additionally, use of the private sector for family planning increases by wealth and is greater in urban as compared to rural areas. There are, again, limited differences between regions among users of family planning. Between 15% and 25% of family planning users in the poorest quintile use the private sector across all regions (Sub-Saharan Africa, Middle East/Europe, Asia, Latin America), and between 45% and 50% of those in the wealthiest quintile use the private sector.

The private sector is not a homogeneous entity. It contains different types of providers, ranging from formal medical clinics, to registered pharmacies, drug sellers, general retailers, faith based and non-governmental organizations, and can be for profit or non-profit. The study is based on self-reported data, with its inherent problems of recall bias, poor respondent knowledge of facility types, and awkward and inconsistent categorizations of source of care in the DHS studies (16). Yet, as authors note, an in-depth look at who uses the private sector for family planning is a significant addition to our knowledge base (15). Private retailers, often selling condoms and OCs, are a more significant source of care in Sub-Saharan Africa (>10% of the private sector) as compared to the other regions (<5% of the private sector). Sources classified as a private NGO are more important in Latin America, although it comprises less than 5% of private sector provision of family planning. The majority of private sector sources are either medical, or specialized drug sellers (pharmacies, chemists). Private medical sources account for 30% (Sub-Saharan Africa) to 60% (Asia) of private FP provision, and provide more care in rural areas as compared to urban ones, across all regions. Interestingly, the proportion of women with no or primary only education seeking care from

the private medical sector is greater than those with higher education, among those using the private sector (15).

One can examine specific countries in more detail, to understand differences between the public and private sectors. Research in Kenya, Ghana and Tanzania finds that client satisfaction is greater in the private sector for family planning services, however differences in quality were small, or favored the public sector (17,18). In Ethiopia and Pakistan, public sector FP quality was found to be significantly higher than the private for-profit sector, but not greater than social franchises (3). In a study in India, consultation time in the private sector was significantly greater, as was privacy and cleanliness (19).

The cost of care is also a significant consideration in private sector provision. It is noted that private sector FP use increases with wealth (15). The public sector may benefit from donations of family planning commodities, allowing for provision of lower cost family planning services. In Nicaragua, the public sector provides free, 3-month injectables so poorer women and women choosing this method were more likely to seek care from the public sector (20). However, in Latin America, the private sector is losing dominance in many countries (21). This is problematic at a time when donor support for commodities is decreasing, and governments are not sufficiently funding contraceptive services (21).

Overall, the literature indicates that the private sector is an important source of family planning worldwide, with differences in use by wealth, as well as by method of choice. Evidence on improved quality in the private sector for FP is mixed, however client perception of quality is superior.

IMCI services

Acute Respiratory Infections (ARIs) and diarrhea are the most common childhood illnesses, both of which strongly contribute to child mortality (22). Integrated Management of Childhood Illnesses (IMCI) combines prevention with treatment to improve child health outcomes. Health seeking behavior and outcomes differ between the wealth quintiles, with wealthier households being more likely to seek care than poorer households (23). In a study of countries that showed improvements in child survival, and had completed at least two recent DHS, more than half of the countries showed an increasing gap in child mortality between the highest and lowest wealth quintiles (24).

Based on aggregate data from sub-Saharan African DHS, although the incidence of fever is high in all quintiles, incidence is higher in the poorest quintile (41%) as compared to the wealthiest quintile (32%). Controlling for other characteristics, this difference disappears, indicating that fever is not more common among one wealth group (23). If the rate of illness is similar, an equitable outcome would imply that the poor and wealthy seek care similarly also.

Globally, more than half of all care for children seeking treatment for diarrhea, fever, and cough is provided by private providers (6). In an analysis of DHS data, more than one-quarter of mothers of sick children sought care from multiple sectors, using a combination of public and private providers, although the private sector is the primary source of care for

fever/cough and diarrhea (6,25). In an analysis of 38 countries, Bustreo (2003) and colleagues found that between 37%-99% of children from the poorest wealth quintile who sought care for diarrhea or ARI went outside the public sector (26). In South Asia, approximately three quarters of children with acute respiratory infections from the poorest wealth quintile seek care from private providers (25). For example, in Bangladesh, nearly 90% of households visited a private provider for common childhood illnesses and more than 80% of children with dysentery sought care from private providers in India (6). Nevertheless, many parents do not seek treatment outside the home for their children (27).

In India, private providers were preferred for treatment of common childhood illnesses, such as acute respiratory infections and acute diarrheal diseases. Although nearly one-third of children with diarrhea or fever/cough did not receive any treatment, two-thirds of the children who did receive treatment sought care from the private sector. Although private providers are preferred across all wealth quintiles, women from the highest wealth quintiles were more likely to take their sick children to a private provider than women from the poorest quintiles (22).

In a study in sub-Saharan African countries, use of the private sector for treatment of childhood illnesses increased with wealth. In 60% of fever cases, children were taken to a modern medical provider such as a hospital, lower-level facility, private provider, pharmacy or shop, or a traditional healer. Only 6% of cases of fever in the lowest quintile sought care from a public hospital, while 18% of cases visited a public hospital in the highest wealth quintile. The highest wealth quintile was also more likely to use any source of care, public or private (23).

Across 26 African countries 45% of sick children seek care from either a formal or informal private provider (25). In Latin America, 37% of children with diarrhea sought care in the private sector (6). Another study that analyzed DHS data from 26 sub-Saharan African countries found that 28% of parents of children with diarrhea or acute respiratory tract infection sought care at a public facility, 22% at a private provider, and the remaining percent did not seek care outside the home. Of children in the lowest wealth quintile who sought care outside their homes, 51% went to the public sector and 45% went to the private sector (24). As with family planning, the literature reveals that the private sector is well utilized for care-seeking for childhood illness, even among those in the poorest quintiles. However, many childhood illnesses are not treated in the formal medical sector, revealing an 'unmet need' for care.

The review of literature on use of private sector health services by wealth lends itself to a number of follow-up inquiries. Although the Campbell et al analysis (2015) finds use of private sector FP is similar across regions, are there important within region differences? Do countries follow similar patterns of private sector use for both women's and children's health needs? In exploring the relationship between household wealth and health sector used, this paper examines the data in different ways to draw meaningful conclusions for social franchises. In section 2, we describe the data used for these analyses.

Section 2: Data

Two sources of DHS data were used for the secondary analyses, focusing on source of care for family planning and "IMCI" – specifically diarrhea, fever, and cough+rapid breathing, commonly associated with acute respiratory infection (ARI). First, aggregated data from all countries with a DHS conducted from 2010-2014 were downloaded from the Application Programming Interface (API). The API provides summary statistics, sub-categorized by wealth, urban/rural area, age and other select covariates in a standard format for all countries. Not all indicators are sub-categorized by each of the above covariates. From the API, data on contraceptive prevalence, source of family planning, diarrhea, fever and ARI prevalence and care sought was obtained. The API does not include data on where treatment was sought for childhood illnesses of diarrhea, fever and acute respiratory infection. It only includes information on whether care was sought from a health facility. Data from the Gabon was incomplete, and was dropped from the FP analyses. The countries, identified by their country codes in the analysis, are shown in Table 1.

Table 1. Countries, and country codes, used in analyses.

Armenia	AM	Gambia	GM	Niger	NI
Bangladesh	BD	Ghana	GH	Nigeria	NG
Benin	BJ	Guinea	GN	Pakistan	PK
Burkina Faso	BF	Haiti	HT	Peru	PE
Burundi	BU	Honduras	HN	Philippines	PH
Cambodia	KH	Indonesia	ID	Rwanda	RW
Cameroon	CM	Jordan	JO	Senegal	SN
Colombia	CO	Kenya	KE	Sierra Leone	SL
Comoros	KM	Kyrgyz Rep.	KY	Tajikistan	TJ
Congo (Brazzaville)	CG	Liberia	LB	Tanzania	TZ
Congo Dem. Rep.	CD	Malawi	MW	Togo	TG
Cote d'Ivoire	CI	Mali	ML	Uganda	UG
Dominican Rep.	DR	Mozambique	MZ	Yemen	YE
Ethiopia	ET	Namibia	NM	Zambia	ZM
Gabon	GA	Nepal	NP	Zimbabwe	ZW

Simple descriptive analyses were performed with this data.

Box 1: Detailed analysis:
Bangladesh (2014)
Cambodia (2014)
Dem. Rep. Congo (2013-2014)
Dominican Rep (2013)
Ghana (2014)
Haiti (2012)
Kenya (2014)
Liberia (2013)
Mali (2012-2013)
Nigeria (2013)
Senegal (2014)
Zambia (2013-2014)

Second, twelve countries (Box 1) were selected for a more detailed analysis of family planning and child health related health service use. All twelve had a DHS survey conducted between 2012-2014, and all have social franchises. USAID FP priority countries were given preference, but the final set of countries was selected to also have geographic diversity. The women's response file from the full DHS dataset was downloaded for the most recent survey from these countries. Analyses focused on current users of modern family planning, and their source of most recent resupply. There was no recoding of how DHS grouped source of family planning (DHS VI Standard Recode file). For IMCI, analyses

focused on the youngest child under aged 5 (the first child listed). Respondents are asked if the child had an episode of diarrhea in the previous two weeks, and the source of care, if any, for the child. Respondents are also asked if the child had a fever in the previous two weeks, and if the child has a cough. Children whose cough is accompanied by rapid breathing, and those with fever, are asked about source of care, if any. The source of care for these two illnesses is grouped together. Sources of care for diarrhea and fever/ARI are categorized in up to 24 country specific categories. These categories were recoded into 8 groups for all 12 countries, and are presented in the analyses as such. Children may seek care at more than one place for the same episode, so analyses presented allow for multiple responses. Weighted descriptive analyses were conducted for family planning, and unweighted country-specific analyses were conducted for diarrhea and fever/ARI. Covariates of interest were wealth quintile, urban/rural residence and respondent age (woman's age).

Section 3: Results

Analyses focus on patterns, in order to identify if there are any trends in use of private sector services, which services or providers within the private sector are more favored, and if it is possible to assess these data by wealth quintile.

Table 2 lists the modern contraceptive prevalence for each of the 12 countries assessed in depth, as well as the sample sizes for women and children. Columns 4 and 5 list the incidence of diarrhea and fever or ARI reported for the youngest child. Sample sizes vary greatly among countries, indicative of varying illness prevalence, as well as different survey requirements. For example, in Nigeria and Kenya, large samples were collected in order to have region and district specific estimates for key indicators. Analyses by multiple sub-categories are limited by small sample sizes in some instances. In other words, it is not feasible to assess use of pharmacies for diarrhea by wealth quintile, as sample sizes would be too small.

Table 2. Summary statistics.

Country	mCPR	mCPR Sample Size[1]	Diarrhea Incidence	ARI or Fever Incidence	Childhood illness sample size[2]
Bangladesh	51.0%	17863	5.1%	40.0%	6679
Cambodia	26.6%	17578	13.1%	28.4%	5799
Democratic Republic of Congo	7.7%	18827	20.1%	38.6%	10701
Dominican Republic	52.2%	9372	19.0%	31.5%	2895
Ghana	17.8%	9396	13.3%	19.4%	4170
Haiti	21.5%	14287	23.9%	49.2%	5176
Kenya	39.1%	31079	16.8%	33.8%	14537
Liberia	20.4%	9239	26.8%	38.5%	5072
Mali	9.6%	10424	10.6%	11.9%	6439
Nigeria	10.7%	38948	12.4%	16.1%	18997
Senegal	14.7%	8488	24.8%	15.5%	4348
Zambia	32.4%	16411	18.9%	27.0%	9038

1. Number of women surveyed
2. Number of children aged 0-5 (if woman has more than 1 child in this age range, only the youngest is included)

For each of the three health needs (family planning, diarrhea, ARI/Fever), we first examine country level patterns of use and need, and where or if care is sought. Second, we look at 12 countries in depth, and examine patterns of use by type of facility. Finally, we see if these patterns differ by wealth quintile. Data by wealth quintile is not as nuanced due to sample size limitations.

Family Planning

Looking across 44 low- and middle-income countries, we find that modern contraceptive prevalence rates (mCPR) vary widely, from 4.6% in the Guinea to 72.9% in Colombia (see appendix 1). As seen in this graph, there is not an obvious relationship between modern contraceptive prevalence rates and use of the private sector (figures 1). Increased mCPR does not correspond to increased use of the private sector across regions. For example, Mozambique (MZ) and Zimbabwe (ZW) have similar use of the private medical sector at 16.1% and 14.1% respectively. Yet the CPR among married women is 11.3% in Mozambique and 57.3% in Zimbabwe. We do tend to see an overall higher mCPR in in non-African countries than in sub-Saharan African countries (with notable exceptions of Kenya, Zimbabwe, and Namibia where the rates are above 50%).

The private medical sector in these graphs refers to clinics, hospitals and pharmacies, while the private non-medical sector refers to shops, churches, friends and relatives. Use of both the private medical and private non-medical sectors vary widely in sub-Saharan Africa, from 5.5% in Comoros (KM) to 77% in Cameroon (CM), yet these countries have remarkably similar mCPR rates among married women at 14.2% and 14.4%, respectively. We also see a moderately higher use of the private sector in middle-income countries than in low-income countries, yet mCPR rates do not vary in accordance with use of the private sector. Private sector use is approximately 40% in the middle-income countries of Kenya, Ghana, Peru, Colombia, and Honduras, yet mCPR rates range from 22.2% in Ghana up to 72.9% in Colombia among married women, despite similar profiles of private sector use (See annex).

Looking more in-depth at 12 comparison countries, we are able to further differentiate in the type of public and private sector sources used. Source of family planning services varies widely across countries, with the greatest use of private clinics in Bangladesh and Cambodia, high use of private pharmacies in the DRC and Nigeria (over 40%) and the public sector dominating in Senegal and Zambia (figure 2). Haiti is notable for its high use of shop/friend/other for services, as well as larger NGO use for FP, as compared to the other countries analyzed. Bangladesh and Mali both have a very high proportion of services provided by community health workers in the public sector, at 35% and 58%, respectively. Approximately two-thirds of services in Kenya are provided by government clinics, with nearly 30% provided by private clinics, pharmacies, or NGOs.

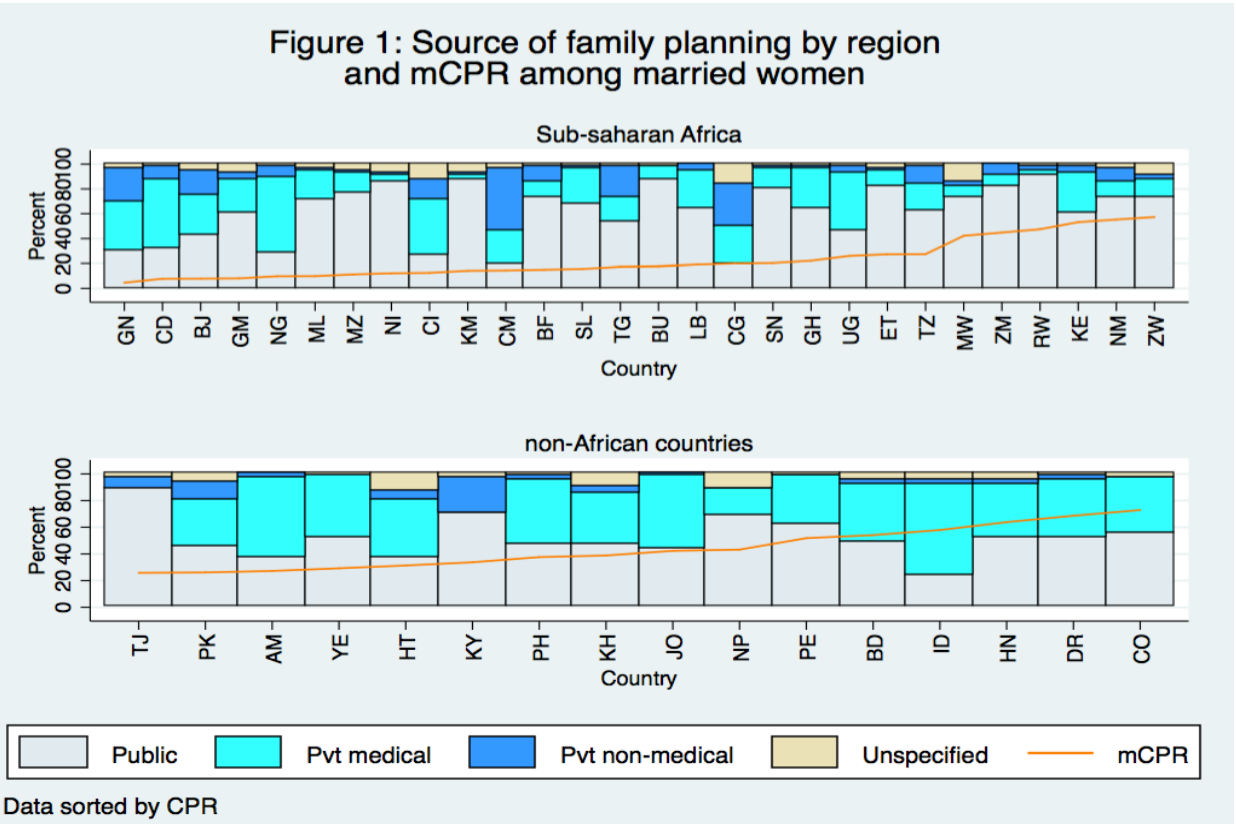


Figure 1: Source of family planning by region and mCPR among married women
Sub-saharan Africa
Percent
0 20 40 60 80 100
GN CD BJ GM NG ML MZ NI CI KM CM BF SL TG BU LB CG SN GH UG ET TZ MW ZM RW KE NM ZW
Country
non-African countries
Percent
0 20 40 60 80 100
TJ PK AM YE HT KY PH KH JO NP PE BD ID HN DR CO
Country
Public
Pvt medical
Pvt non-medical
Unspecified
mCPR
Data sorted by CPR

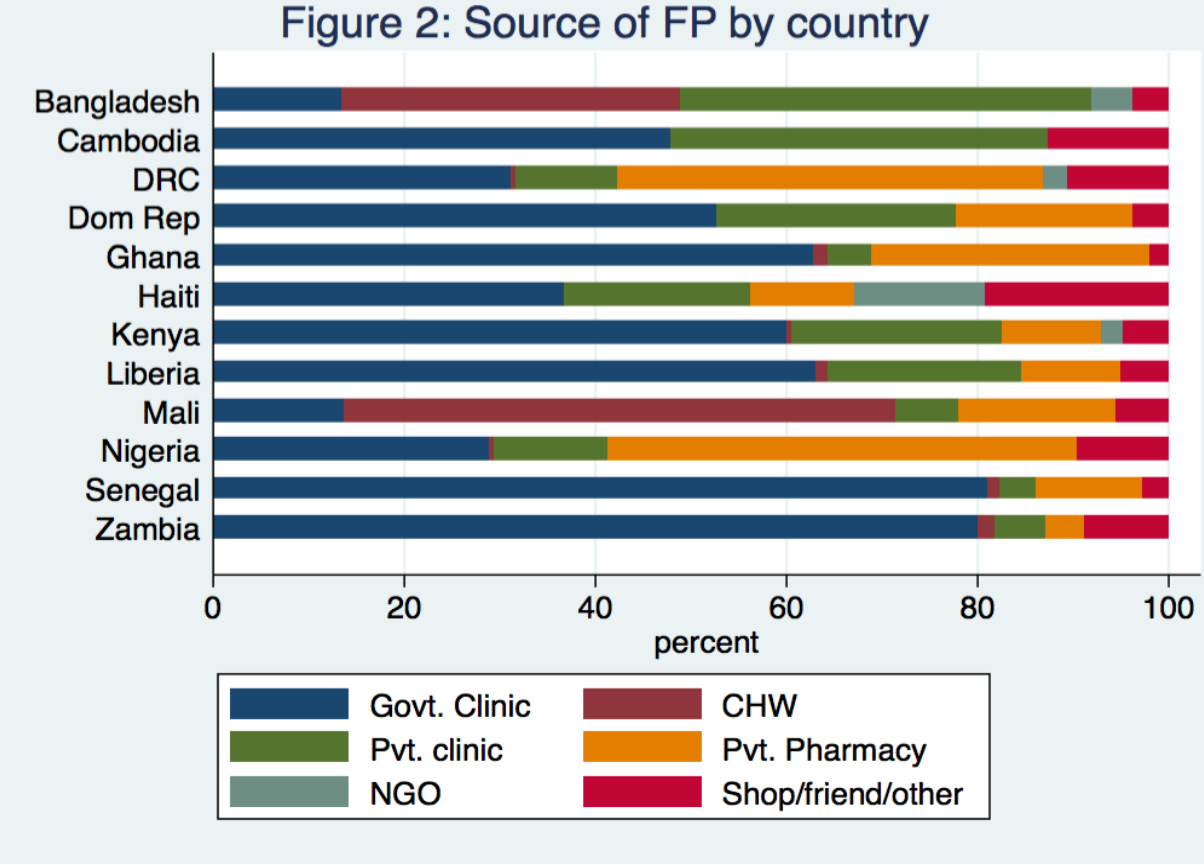


Figure 2: Source of FP by country
Bangladesh
Cambodia
DRC
Dom Rep
Ghana
Haiti
Kenya
Liberia
Mali
Nigeria
Senegal
Zambia
0
20
40
60
80
100
percent
Govt. Clinic
Pvt. clinic
NGO
CHW
Pvt. Pharmacy
Shop/friend/other

Patterns in the types of facilities used for family planning services remain similar across urban and rural divides, although private clinics are more often used in urban settings than in rural (see annex). We also see increased use of government clinics in rural Kenya than in urban, paired with decreased use of private clinics and private pharmacies.

Unlike other health needs, FP data can also be analyzed by the type of method sought. Although public sector clinics are not highly used by women in Bangladesh, women in Bangladesh were more likely to use the public sector for permanent and long-acting reversible contraceptives (LARCs), and a private sector clinic for short-term methods. In Senegal, women used a public sector clinic or pharmacy for all types of family planning methods (91% of permanent methods, 76% of short-term methods, and 93% of LARCs). Zambia was similar with 68% of women receiving permanent methods from a public sector clinic or pharmacy, 78% receiving short-term methods, and 95% receiving LARCs in the public sector. Across all 12 countries, women were more likely to use the public sector for permanent and LARC methods (see annex).

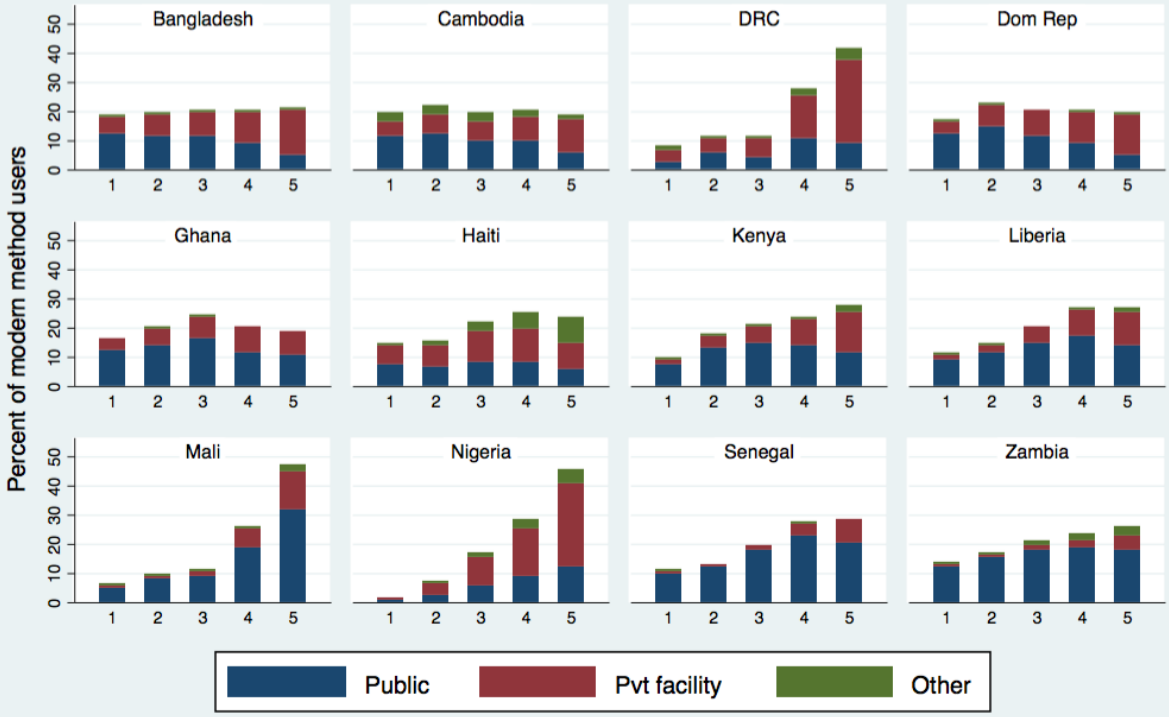
Across the 12 in-depth comparison countries, mCPR generally increases from the lowest to the highest wealth quintiles, with the interesting exceptions of the Dominic Republic and Ghana where the reverse trend is seen with higher use of modern contraceptive methods in the lowest two wealth quintiles (Table 3). Kenya's wealth quintiles all fall around 40% use, with the exception of the lowest wealth quintile with only 23.5% of all women using modern contraceptive methods.

Table 3. Percentage use of modern contraceptive methods among mWRA by wealth quintile.

Country	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5
Bangladesh	50.8	52.2	52.0	50.0	50.2
Cambodia	29.1	31.0	26.8	26.3	21.1
Democratic Republic of Congo	3.4	4.7	4.8	10.8	13.2
Dominican Republic	55.7	59.9	51.9	48.1	47.3
Ghana	17.7	20.3	20.8	16.1	14.8
Haiti	20.8	20.3	24.3	23.3	19.1
Kenya	23.5	40.0	42.9	44.3	40.6
Liberia	13.5	16.5	21.8	25.1	22.8
Mali	3.1	4.8	5.8	12.3	19.4
Nigeria	0.9	4.2	9.8	14.7	21.3
Senegal	9.7	11.1	14.5	19.2	17.0
Zambia	24.8	31.6	35.8	35.0	33.0

As seen in figure 3, the private sector is a more significant source of family planning for women in quintiles 4 and 5, as compared to poorer wealth quintiles. While table 3 shows the contraceptive prevalence in each quintile, figure 3 shows what proportion of FP users are in each quintile, and where they went the last time they needed FP. In general, use of the private sector increases by wealth quintile. Even in countries where a similar percentage of women in each wealth quintile use FP, wealthier women seek their services from the private sector more frequently. A country level analysis shows that regional categorizations, as provided by Campbell, mask differences (15).

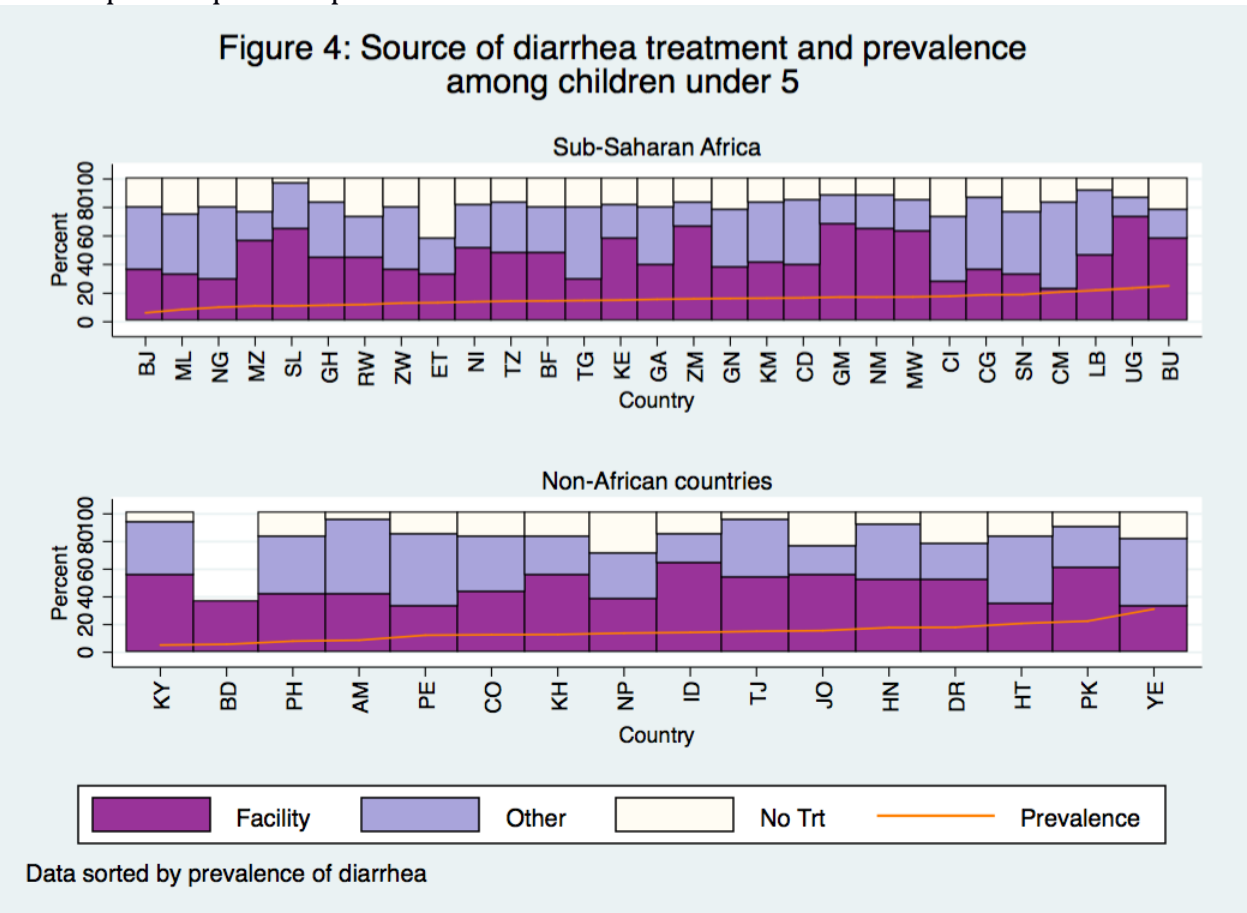
Figure 3: Source of FP by wealth quintile



1 = Poorest and 5 = Wealthiest
Other=shop, friend, other

Diarrhea

Worldwide, treatment patterns for diarrhea vary, despite limited variation in the prevalence rate for diarrhea. Similar proportions of children under five reported diarrhea in the two weeks preceding the survey, however children are twice as likely to be taken to a facility in Gambia, Malawi, Namibia, Sierra Leone or Zambia than they are in Cameroon, Cote d'Ivoire, Nigeria or Togo. Figure 4 shows this variation by country, as well as variation in the proportion of children who receive no treatment at all, a crude measure of 'unmet need'. The data used for Figure 4 cannot differentiate by facility type (i.e. hospital or pharmacy), sector (public or private), or severity of diarrhea. Children seeking treatment at "other" have gone to a shop or unqualified provider.

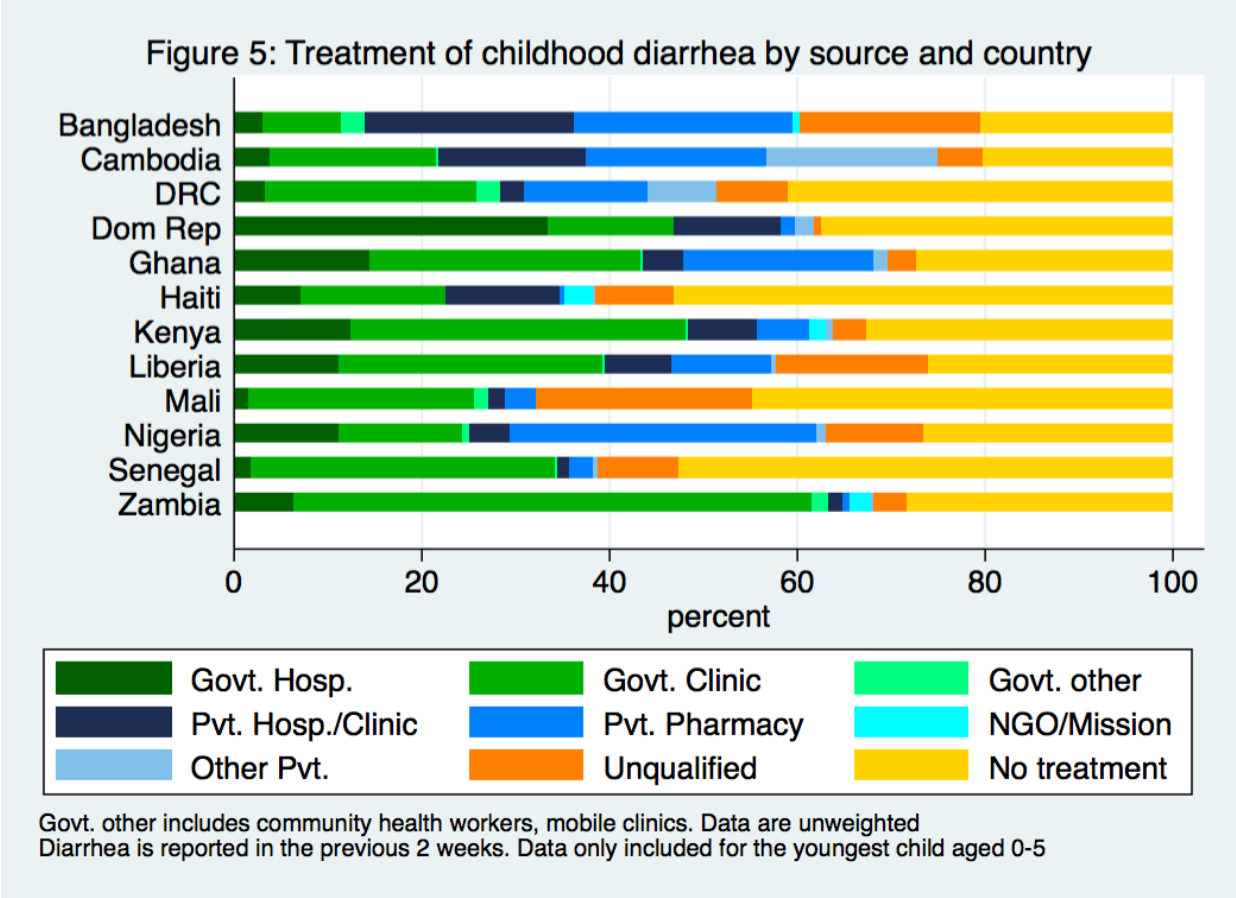


Focusing on the 12 comparison countries, we find that prevalence of diarrhea in the previous two weeks varies from 5.1% in Bangladesh to 26.8% in Liberia (see Table 4). Across the comparison countries, over half of all cases of diarrhea occurred in the lowest two quintiles versus just over one-quarter of cases in the highest two wealth quintiles, and two-thirds of cases occurred in rural locations (data not shown).

Table 4. Prevalence of diarrhea in children under 5 by wealth quintile.

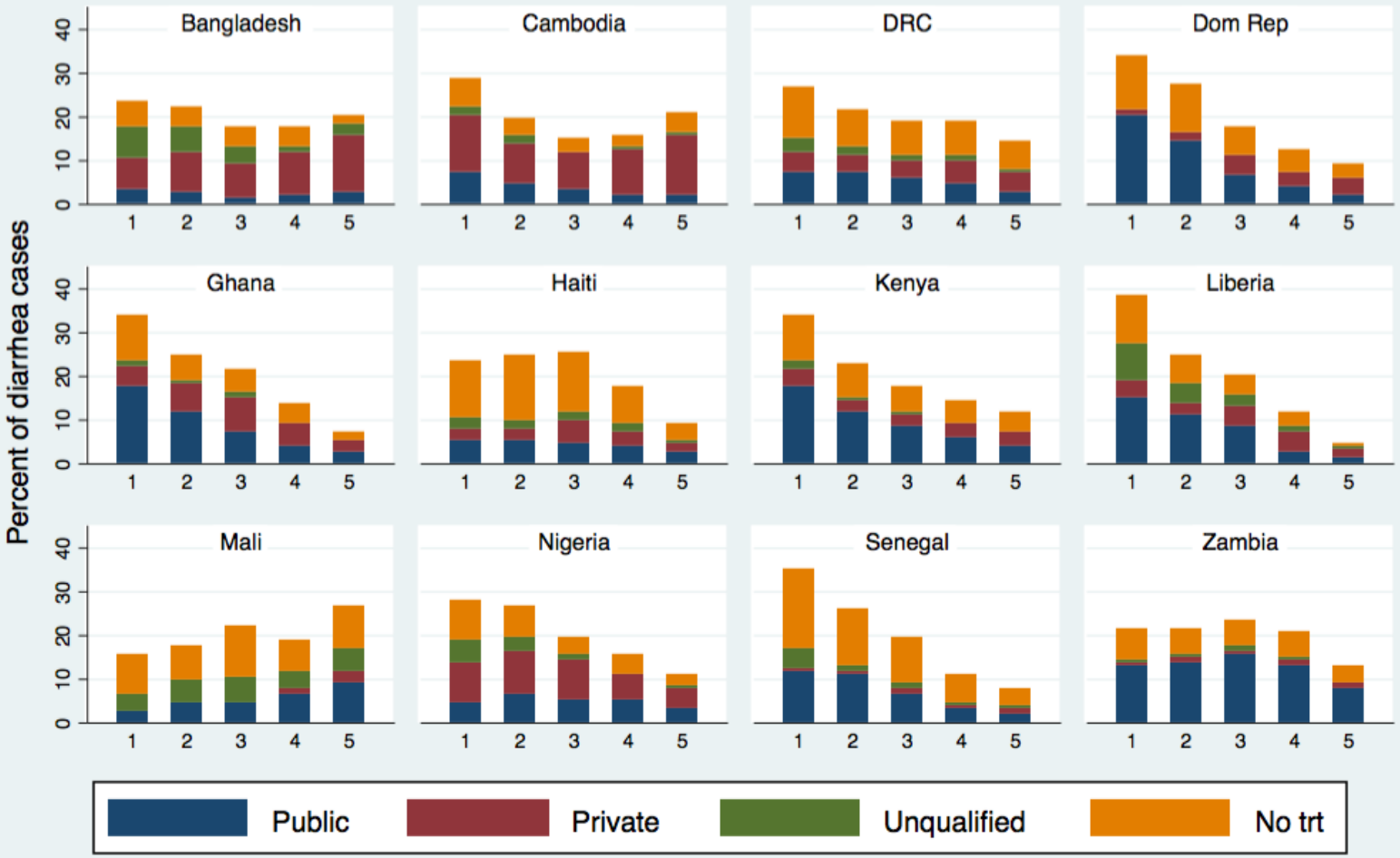
Country	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5
Bangladesh	5.68	6.00	4.53	4.27	5.02
Cambodia	17.07	13.52	12.23	11.55	10.86
Democratic Republic of Congo	20.21	19.54	18.94	21.81	20.69
Dominican Republic	22.86	22.32	16.85	14.59	13.37
Ghana	14.55	15.57	15.03	11.11	7.02
Haiti	21.97	27.10	26.44	23.64	17.78
Kenya	18.92	19.15	16.61	14.42	12.53
Liberia	31.53	25.04	25.40	25.68	18.06
Mali	8.63	9.28	11.92	10.30	12.41
Nigeria	16.00	14.76	11.84	10.18	8.00
Senegal	27.47	24.00	24.09	21.72	23.60
Zambia	18.33	18.35	19.34	21.00	17.17

Between 22.2% (Cambodia) and 55.9% (Senegal) of children do not receive treatment for diarrhea, with Kenya falling in the middle at 32.5% of children who do not receive treatment (Figure 5). Of all children who seek treatment, 55.6% sought care from the public sector and 35.6% seek care from the private sector. In Kenya, 48.8% of children with diarrhea visited the public sector, compared with 17.7% who visited the private sector. Government hospitals and clinics are widely used, although clinics are more often visited than hospitals. The Dominic Republic presents the exception, where 48% of children who sought care visited a government hospital and another 16% visited a government clinic. Across the 12 comparison countries, 36% of children did not seek treatment for diarrhea; with the lowest percent of children seeking care in Senegal (44% sought care) followed closely by Haiti (46% sought care). Unqualified providers were used in 8% of cases. Children in Mali visited an unqualified provider in 23% of cases, but in the Dominican Republic unqualified providers were visited in less than 1% of cases.



Looking at differences by wealth, there is significant variation across countries. The lowest wealth quintile in Kenya was more likely to use public services than private (57% versus 10%, respectively), with 29% of children who did not seek treatment (see figure 6). The highest wealth quintile was also more likely to use public services, but the difference was smaller (35% used public services, 26% private), with 39% of children who did not seek treatment. In Cambodia, where nearly 80% of children across all wealth quintiles seek treatment for diarrhea, this trend for use of public or private services is reversed. All wealth quintiles were more likely to use private rather than public services (56% versus 22%, respectively), although the highest wealth quintile is more likely to use private services (65%) than the lowest wealth quintile (51%). In Senegal, 56% of children did not seek care for diarrhea, and both the lowest and highest wealth quintiles used public services in about one-third of cases, while only 2% of cases in the lowest wealth quintiles visited a private provider compared to 12% in the highest wealth quintile.

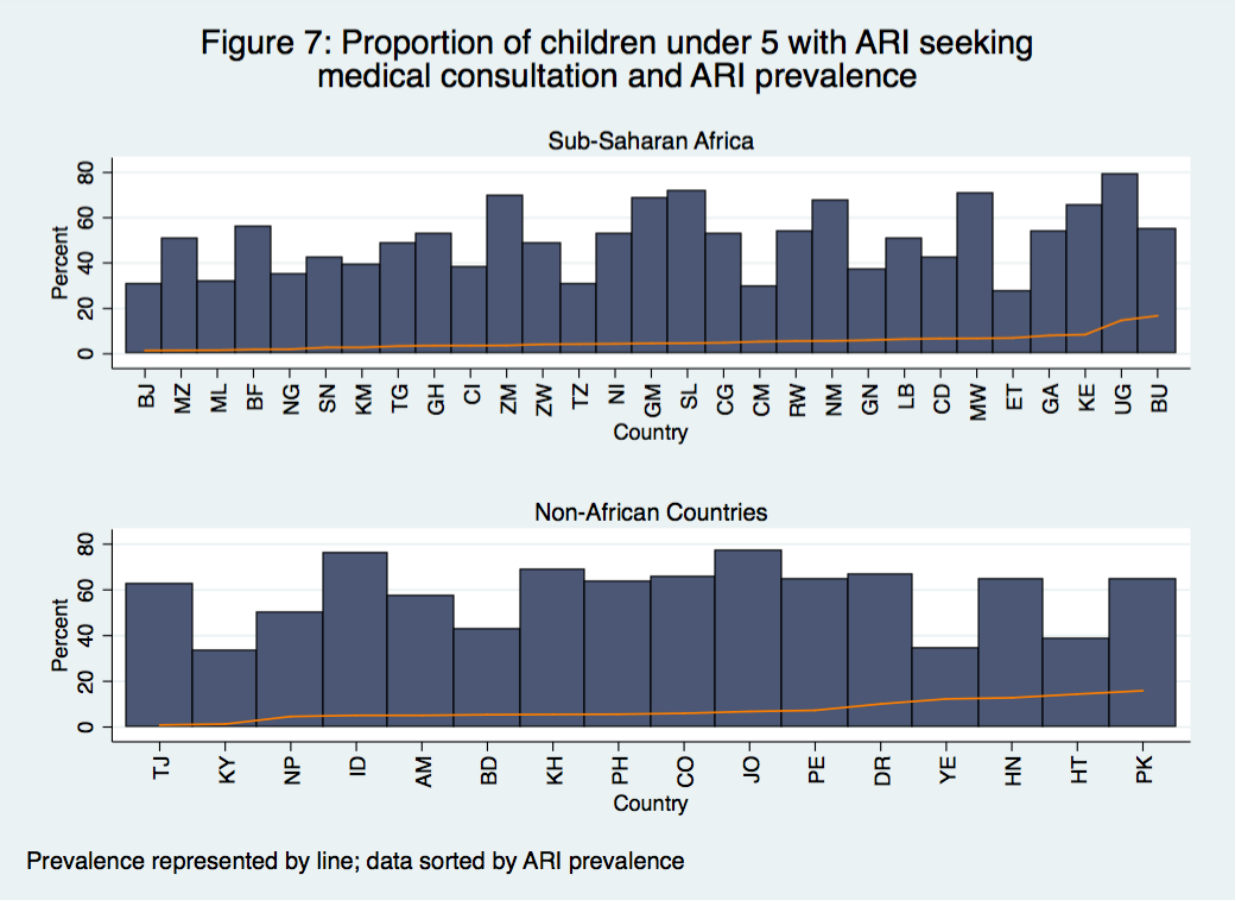
Figure 6: Source of Diarrhea treatment by wealth quintile

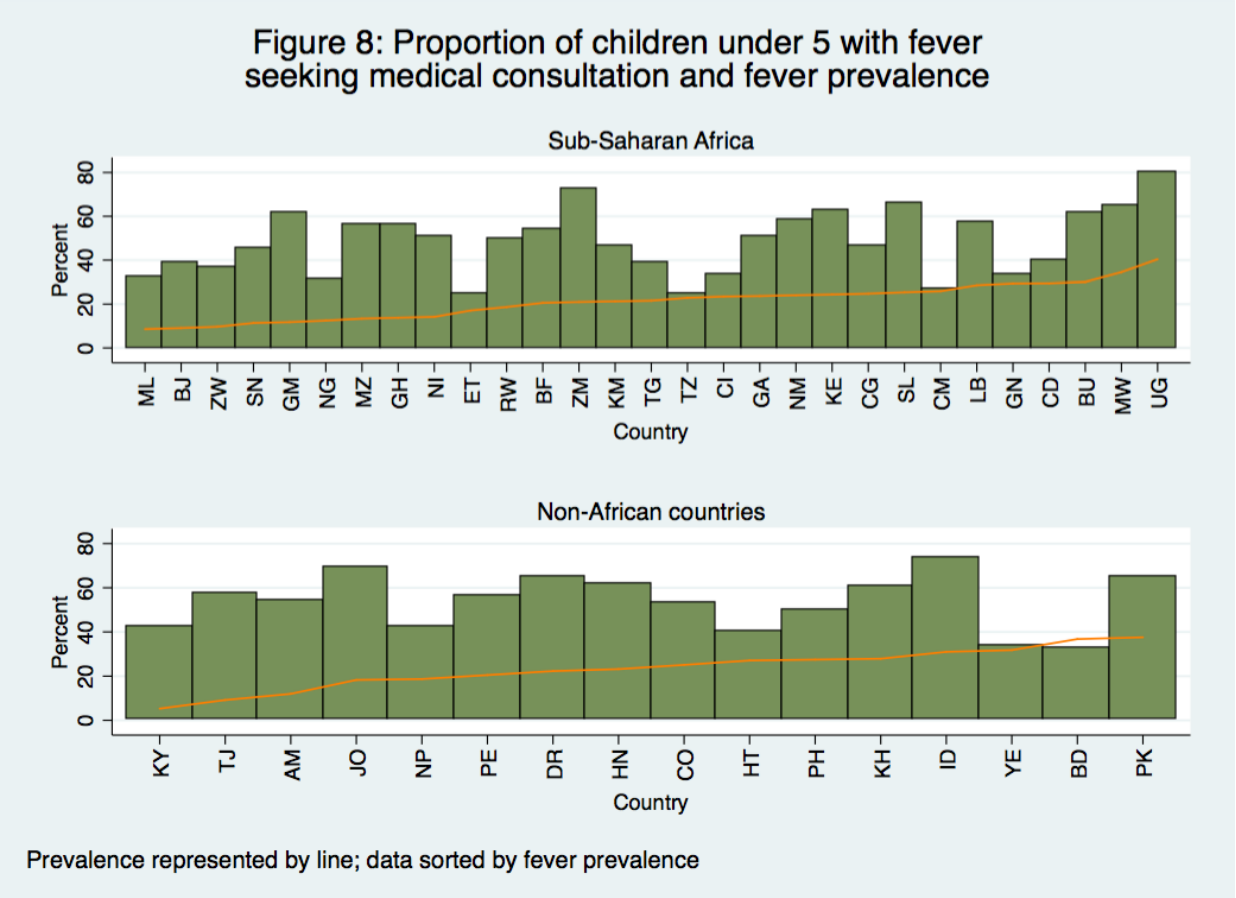


1 = Poorest and 5 = Wealthiest; Private=Clinic, pharmacy, NGO
Size of bar does not reflect prevalence

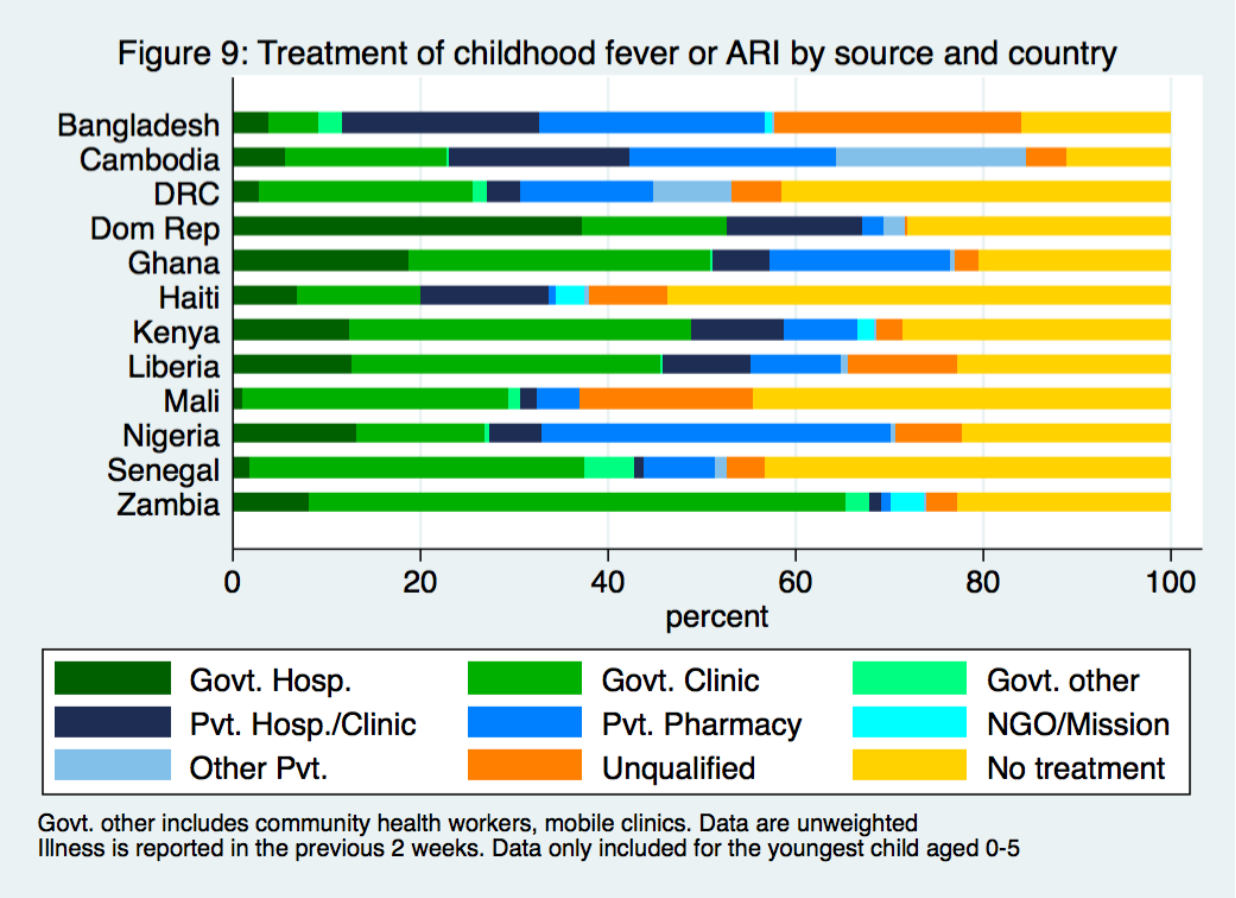
Fever/ARI

For both ARI and fever, there is no clear relationship between prevalence of the condition and treatment seeking behavior. Overall prevalence of ARI is significantly lower than fever in all countries for which data is shown in figures 7 and 8. Uganda (UG) and Zambia (ZM) display a consistently high use of treatment seeking for all three childhood illnesses, while Ethiopia (ET) and Cameroon (CM) have low levels of treatment seeking. Outside of Africa, the differences between Yemen and Pakistan for ARI treatment seeking, or Yemen, Bangladesh and Pakistan for fever cases, is particularly striking. In both instances, prevalence of ARI or fever is similar, but the proportion of children for whom formal treatment is sought is nearly double in Pakistan as compared to Yemen and Bangladesh. While Yemen may have a health facility shortage, the same explanation cannot be considered for Bangladesh, and further contextual factors would need to be explored.





Looking at the 12 comparison countries, an average of 29.5% of children did not seek care for fever/ARI, ranging from 11.7% who did not seek care in Cambodia to 53.1% of children who did not seek care in Haiti (Figure 9). Since data are combined for the two conditions, it is difficult to determine if treatment seeking for one illness is markedly different from the other. Of children who sought care for fever/ARI across all 12 countries, 49% visited the public sector, while 42% used private services. In Kenya, more children visited the public sector (68% of children who sought care) compared to the private sector (31% of children who sought care). The private sector dominates care in Bangladesh, Cambodia and Nigeria, while providing a very small proportion of care in Senegal, Zambia and Mali. These patterns are similar to care-seeking for diarrhea, and provide insight into use of the private sector for childhood illness worldwide.

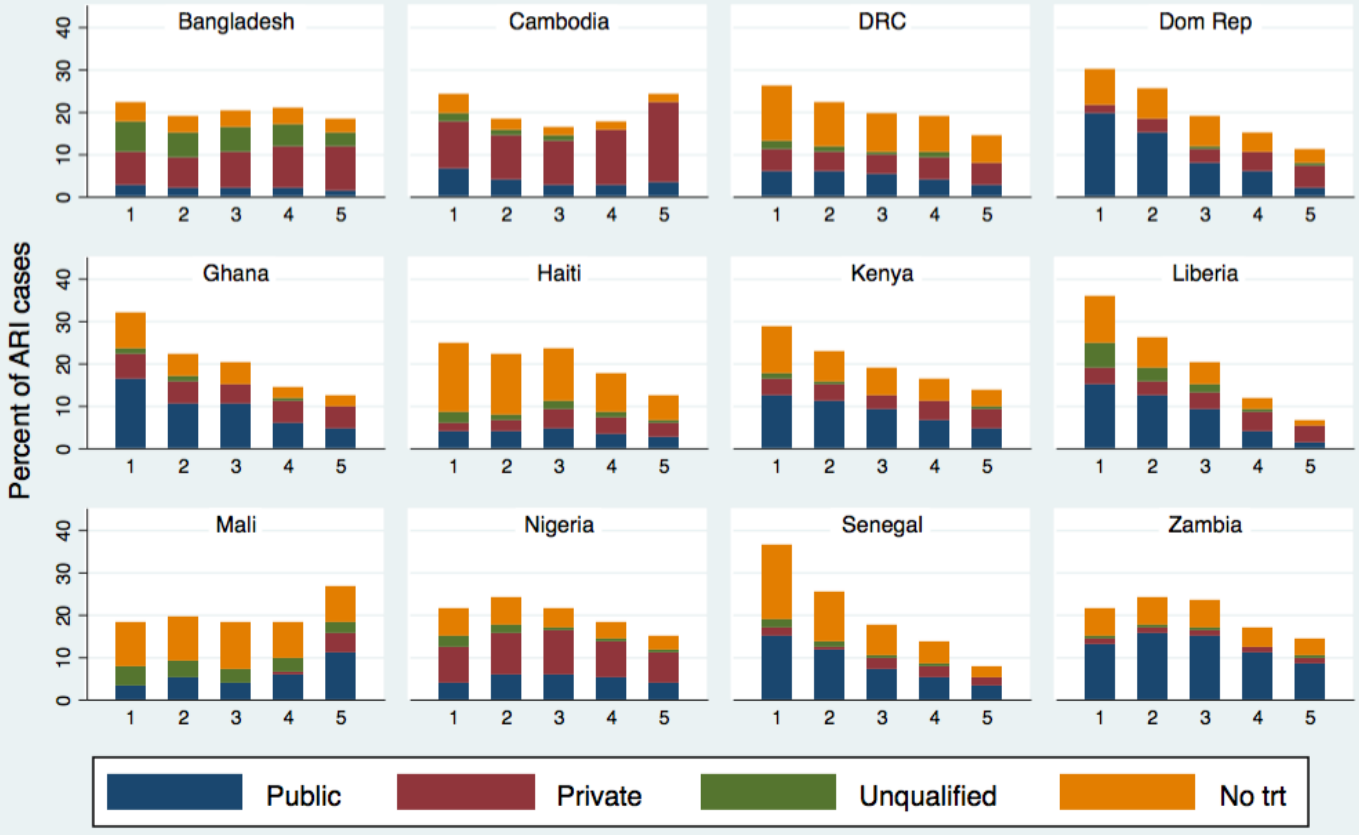


Differences in illness prevalence and care-seeking by wealth is also a consideration. Nearly half of all fever or ARI cases occur in the lowest two wealth quintiles, with less than one-third of cases occurring in the highest two wealth quintiles. For example, in Kenya, 53% of fever/ARI cases occur in the lowest two wealth quintiles and 29% in the highest two wealth quintiles (table 5). The proportion of children who receive no treatment for fever/ARI is strongly correlated with wealth status in DRC, Haiti, Liberia, Mali and Senegal. For example, 45% of children with ARI/fever in the poorest quintile in DRC received no treatment, as compared to 31% in the richest quintile. Use of private sector clinics is also correlated with wealth, with only 6% of sick children in the poorest quintile visiting a private clinic in Kenya, Haiti and Liberia, compared with 25%-37% of those in the richest quintile in those same countries. Use of private sector pharmacies, by contrast, is much more equitable, especially in the Dominican Republic, Ghana, Kenya and Nigeria.
Figure 10 indicates how cases of ARI or fever are distributed across wealth quintiles. Of all cases of ARI or fever in Senegal, 36% are found in households in the poorest quintile, while 7% are in the wealthiest households. A large proportion of those in the poorest quintile receive no treatment, and those who do seek their treatment in the public sector. In contrast, in Nigeria, cases of ARI are fairly evenly distributed across wealth quintiles, as is seeking private sector care.

Table 5. Prevalence of fever/ARI in children under 5 by wealth quintile.

Country	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5
Bangladesh	42.7	40.9	42.3	39.9	34.4
Cambodia	31.7	27.5	28.4	27.9	26.6
Democratic Republic of Congo	39.3	39.2	37.0	42.6	33.6
Dominican Republic	34.6	33.6	29.8	29.4	26.5
Ghana	20.5	20.8	20.6	15.5	17.4
Haiti	49.7	50.7	51.0	47.4	44.8
Kenya	32.7	39.3	35.6	33.2	27.4
Liberia	41.9	36.8	38.2	36.2	33.9
Mali	12.3	12.4	11.0	11.7	12.0
Nigeria	17.4	18.1	17.7	14.7	11.6
Senegal	17.7	14.5	13.3	16.3	14.9
Zambia	29.1	30.5	26.4	24.4	22.7

Figure 10: Source of ARI treatment by wealth quintile



1 = Poorest and 5 = Wealthiest; Private=Clinic, pharmacy, NGO
Size of bar does not reflect prevalence

Limitations of data

It is important to note the following limitations when using DHS or other household data. All data is self-report, and in the case of family planning services, the recall time may be quite long. Women may mis-specify the source of care for themselves or their children. Second, for childhood illness episodes, research indicates that care may be sought at more than one location, and that the reason for seeking care at multiple locations is important (24). The DHS does not capture the order of care-seeking, nor the reason for seeking care at a particular site.

Nevertheless, data shown indicates that the private sector can be an important source of care for both family planning and IMCI services. In particular, children who do not receive treatment from a qualified provider, like women with an unmet need for family planning, can be considered in the realm of potential demand. Additional information on the severity of illness may be required to understand if all cases where treatment was not sought are in need of medical advice.

Summary

A review of the literature regarding use of health services by sector and wealth reveals that services must be looked at separately. Although a country may be labeled as having a strong private sector, reflective of the number of qualified private sector providers available and the dispersion of the facilities beyond urban centers, this does not immediately correlate to higher private sector use for all health needs. This review and analysis looked first at the published literature on differences in use of public versus private sector care in LMIC. These differences may be attributed to wealth, geographic location, or health service sought.

There is substantial variation in care seeking through the private sector across countries (7,15,24). For the treatment of childhood illnesses, we often see higher use of the private sector in Asia than in Africa. Similarly, for family planning services, public clinics are highly favored in African countries. Nevertheless, Mali relies heavily on community health workers and Nigeria has high utilization of private pharmacies.

Despite the relatively similar aggregate results found by Campbell et al, source of care for family planning varies significantly across countries when looking in depth (15). Government facilities are used by less than 20% of women in Bangladesh, and more than 80% of women in Senegal and Zambia. In Bangladesh and Cambodia, private clinics provide over 40% of FP services, and more than 50% of services in Nigeria are reported as provided through private pharmacies. NGO services account for a limited amount of family planning service delivery across the six types of care sources providing less than 4% of care in most countries, with the exception of nearly 20% of rural care in Haiti. NGOs generally provided small percentage (less than 15% in all countries) of short-term family

planning methods or, in Bangladesh, Democratic Republic of Congo, Haiti, and Kenya, a small percentage (less than 4%) of LARCs (see annex).

Some of the low reported use of NGOs as a source of care likely has to do with a limitation of self-reported data. Women may not know how to classify the facility they visit, and facilities such as wholly owned Marie Stopes International (MSI) clinics may not be considered an "NGO facility" by a client. When considering how the results from this review can be applied to social franchises, it is important to consider how franchises are 'classified' by the target population, versus how they may be classified in health facility surveys (16). Although significant literature on this subject does not exist, it is conceivable that a franchised provider may self-identify as a member of a larger NGO entity, or that visible branding may lead the franchise to be classified as such. Future research should understand how clients of different health service providers classify them, and if this affects conclusions drawn from sector based analyses of DHS data.

While the idea of unmet need for family planning is well established and studied, the same concept does not have as much traction for childhood illness. Yet, across the 12 comparison countries, more than one-third of all children did not receive treatment for diarrhea. Over 50% of children in Haiti and Mali receive no treatment, or treatment from an unqualified source, for fever/ARI. Investigating care-seeking patterns and use of the private sector by socio-economic status provides insight into whether the private sector is a viable source of care for those not currently seeking treatment.

In most countries, prevalence of diarrhea, ARI and fever is greater in poorer wealth quintiles, or in rural areas. Yet need in urban areas, where more private sector providers are located, persists. Between 16% (Bangladesh) and 58% (Senegal) of children with diarrhea in urban areas received no treatment in our analysis (data not shown).

Interestingly, parents appear to choose the private sector more for ARI/Fever than for diarrhea. For example, in Cambodia, DRC, Dominican Republic, Ghana, Haiti, Kenya, Mali and Nigeria, use of both private clinics and pharmacies is greater in urban areas for ARI/fever than for diarrhea. Reasons would have to be explored, but present opportunity for increasing use of the same facilities for diarrhea treatment, as well as among those seeking no treatment.

In comparing patterns of use by quintile and sector, there are clear similarities between treatment seeking for diarrhea and ARI/fever by country (figures 6 and 10, or figures 4, 7 and 8). Bangladesh, Cambodia and Nigeria have relatively high use of the private sector across all quintiles, as well as limited differentiation in the number of cases by quintile. Higher rates of no treatment in Senegal and Haiti are consistent for both diarrhea and ARI. Across all LMIC with data available, countries with higher proportions of care seeking are similar for fever, ARI and diarrhea. A greater understanding of why households in some countries seek medical advice at a much higher rate than others, even among regional

neighbors, would improve care-seeking insight. For example, care-seeking for sick Zambian children is consistently higher than for Tanzanian ones, for diarrhea, ARI and fever.

Finally, there was little correlation between use of the private sector for childhood illness, and use of the private sector for family planning in the same household (between a woman and her child). This is partly because the population does not overlap well – a large percentage of family planning users did not have a sick child in the preceding two weeks. Nevertheless, patterns of use of the private sector are not always similar across wealth quintiles for family planning versus ARI or diarrhea (figure 3, 6 and 10). For example, women in Haiti and the Dominican Republic use the private sector across all quintiles for FP, but not for ARI. In Bangladesh and Cambodia, the public sector is rarely used for childhood illness treatment, but provides about half of services for FP. Understanding their use of care more broadly speaking would provide greater insight into household choices.

As Davidson Gwatkin wrote in a 2006 review of IMCI, "an intervention cannot help the poor unless it gets to them" (1). We see from the secondary analysis of DHS data that there are clear differences in where individuals from different wealth quintiles seek family planning services and care for children with diarrhea, fever, and ARI. In some countries, the public sector is favored for treatment for children, while in others, the private sector holds a large advantage. The same countries which favor the public sector for childhood illness do not necessarily favor it for family planning services. There is also not a clear relationship between use of services in one sector, and desirable outcomes. For example, greater use of services in one sector (public or private) does not correlate with higher contraceptive prevalence rates in countries. Consequently, generalizations cannot be made across countries with regard to use of private sector services. Rather, country and health area specific information is warranted. In examining the contribution of social franchises, additional information is required. None of the DHS data is able to disaggregate results to demonstrate the contribution social franchises make to providing critical services. Country level assessments of care seeking by sector and wealth, further analysis of why the same household makes different choices in care-seeking, and comparing the wealth profile of franchised clients with others will further our understanding of the role of franchises in private sector health care, and country health systems more generally.

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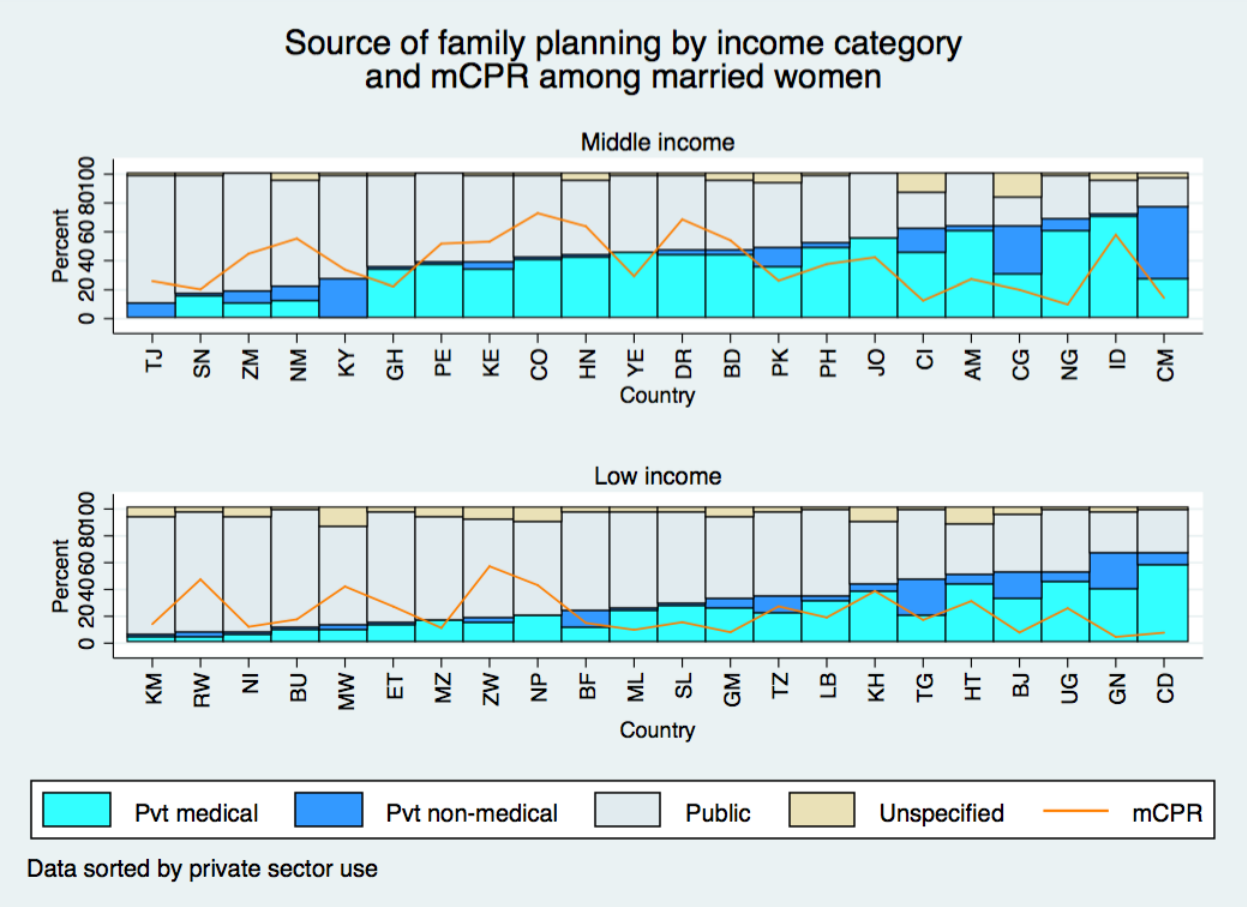
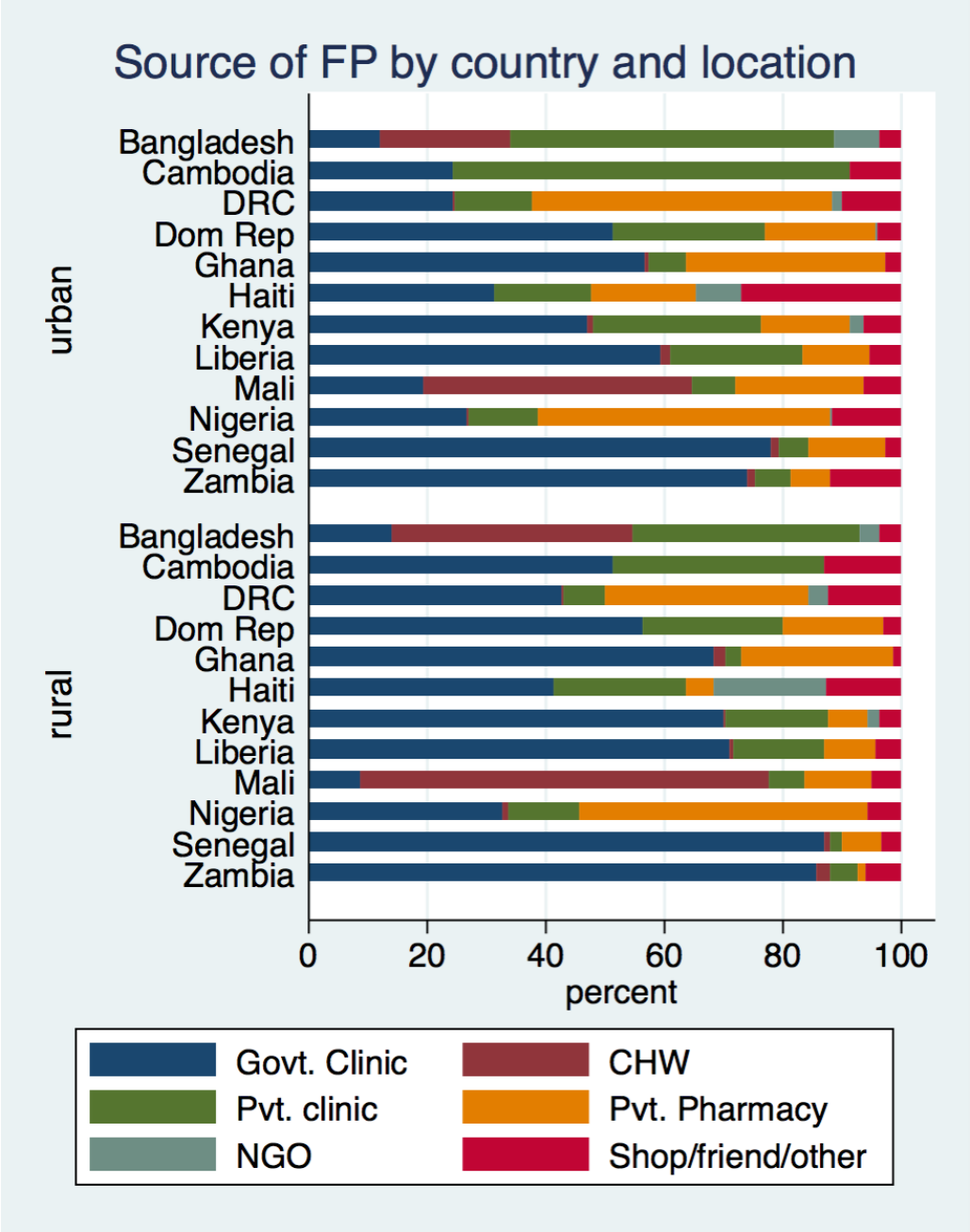
Annex

Additional data for family planning is shown here. Family planning data is more rich, allowing for a larger number of sub-analyses which are relevant for social franchises. The first graph uses the same data seen in figure 1, but arranged in a different way. Countries are sorted by income status and use of the private sector, to see if there is any relationship between a country's income level, private sector use of FP and contraceptive prevalence. Middle income countries tend to have a higher CPR than low-income countries, but there is no apparent relationship between income status and use of the private sector for FP, or between CPR and use of the private sector.



The next two graphs look at the 12 countries in depth to see if there are differences in sectors used for FP by region (urban versus rural) and by method. In many countries, private clinics and pharmacies are used more in urban areas.



Finally, the public sector provides the majority of permanent methods in all 12 countries, and private pharmacies are a more important source of short term methods in DRC and Nigeria than other countries. The high reported use of CHWs in Mali and Bangladesh may

require further investigation, especially since they are reported to provide LARCs and permanent methods.