Title:
Who, What, Where: an analysis of private sector family planning provision in 57 low- and middle-income countries

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Abstract

Background: Family-planning service delivery has been neglected; rigorous analyses of the patterns of contraceptive provision are needed to inform strategies to address this neglect.

Methods: We used 57 nationally-representative Demographic and Health Surveys in low- and middle-income countries (2000-2013) to estimate need for contraceptive services, and examine the sector of provision, by socioeconomic position. We also assessed method-mix and whether women were informed of side-effects.

Results: Modern contraceptive use among women in need was lowest in Sub-Saharan Africa (39%), with other regions ranging from 64-72%. The private-sector share of the family planning market was 37-39% of users across the regions and 37% overall, (median across countries: 41%). Private-sector users accessed medical providers (range across regions: 30-60%; overall mean: 54%; median across countries 23%), specialised drug sellers (range across regions: 31-52%; overall mean: 36%; median across countries: 43%), and retailers (range across regions: 3-14%; overall mean: 6%; median across countries: 6%). Private retailers played a more important role in Sub-Saharan Africa (14%) than in other regions (3-5%). NGOs and FBOs served a small percentage.

More privileged women (richest wealth-quintile, urban residents, or secondary/tertiary-level education) used private services more than the less privileged. Method-types with higher requirements (medical skills) for provision were less likely to be acquired from the private sector, while short-acting methods/injectables were more likely. The percentages of women informed of side-effects varied by method and provider sub-type, but within these, were higher among public medical compared to private medical providers for four of five methods assessed.

Conclusion: Given the importance of private-sector providers, we need to understand why women choose their services, what quality services the private sector provides and how it can be improved. However, when prioritising a relatively higher focus on one of the two sectors (public versus private), it is critical to consider the potential impact on contraceptive prevalence and equity of met need.

Introduction

Public and non-governmental family planning programmes have existed in many low- and middle-income countries since as early as the 1950s, but contraceptive provision has been relatively neglected for nearly two decades[1]. In 2012, reinvigorated commitment was made to address family planning coverage, with $2.6 billion pledged by donors at the London Summit on Family Planning[2]. Stakeholders expressed the need for a range of approaches for delivering family planning services across all sectors, with a key research priority being the "effect of engaging [the] private sector to increase the equity in access to – and utilization of – family planning products and services, by modalities such as franchising and social marketing"[3]. Describing the different public and private modalities currently contributing to family planning coverage, and comparing the equity and the content of services by provider type, is a fundamental first step in meeting this objective[4].

Family planning use across multiple countries has been described previously [5-18], but fewer studies have examined the sector in which women seek services. Using a search strategy published previously[19], we identified eight peer-reviewed papers[20-27] and twelve grey literature reports[28-39] that examine provision by sector across multiple countries. The characteristics and findings of these studies are described in Web Table 1. The studies use between one to three sub-categories of private-sector providers, employing a variety of provider categories and definitions, with non-governmental organisations and "others" in particular being grouped inconsistently. Six studies [20,26,28-31] use data entirely from before 2000, so their findings are dated. The remaining 14 studies include at least some data from 2000 onwards, with between 4 and 56 countries studied. Nine of these fourteen studies include fewer than 15 countries; the remaining five studies[24,34-36,38] are large (25-56 countries), but are primarily tabulations, with little analysis or interpretation, and all bar one[24] are grey literature. Thirteen studies assess socioeconomic inequalities by sector [20,21,25,27,29-31,33-38]: three proxy socioeconomic status using residence and education [29-31], while two added employment[20] or wealth[36] to residence and education. The remaining eight studies look only at wealth quintiles for at least one sector or one country, and three of these use inequality metrics such as concentration indices or high-to-low equity ratios or differences. None of the population-based studies reviewed compared quality of services received by sector, probably because survey programmes contain few measures with which to assess quality of provision. The literature reporting on technical-quality or client satisfaction differences is generally facility-based[40,41] or uses bespoke data collection instruments in a limited number of settings [42].

In this paper, we used the Demographic and Health Survey (DHS) to describe family planning use in 57 low- and middle-income countries in detail, with a focus on the relative roles of the public and private sectors. Results are presented in total and by socioeconomic group (wealth quintile, urban/rural residence, and education), and by world region and country. We went beyond previous literature to describe where women obtained contraception by sector (distinguishing between seven sub-types of public and private providers) as well as the types of contraceptive methods used. We also described whether women were informed of side-effects as proxies for content and quality of care. This paper links to a Series on private-sector provision of family planning and maternal/newborn services, including an overview comparing provision across the different services[19], two in-depth papers on antenatal[43] and delivery care[44], and an exploration of methodological issues[45].

Methods

Data
The DHS are cross-sectional, nationally-representative household surveys[46]. Respondents are women of reproductive age (15-49 years), with men also interviewed in many surveys. The DHS measure household and individual characteristics, fertility and family planning, and maternal and child health and healthcare use. We used the most recent DHS (from 2000 to mid-2013); since 2000, the DHS improved how it captured sources of provision, particularly private provision.

Populations and women in need of healthcare services
We looked at three populations of women[19]: 1) all those surveyed; 2) those "in need" of family planning, and 3) those who used an "appropriate service type", termed women with "met need". Need and appropriate service types are defined below and in Table 1.

In eight countries, surveyed women were "ever-married" rather than "all women" of reproductive age (Web Table 2). We categorised women "in need" of family planning according to a recently-updated consensus definition[47]. Women not in need of family planning methods were those not using any modern methods (defined in Table 1) who either desired a birth within two years or were not at risk of pregnancy (have never had sex, are not having sex [not married/no sex within the last 30 days], or were infecund or menopausal). The remainder were women who needed family planning. These were further stratified into those who used traditional methods (defined in Table 1), used modern methods or were not using any method.

We considered women to have received an appropriate service (i.e., have met need for an appropriate family planning service) if they used a method broadly understood to be effective, though this does not imply that the actual quality-of-care received was appropriate or that the method was used correctly. All studies in our literature review defined family planning as use of modern contraceptive methods, irrespective of where they were obtained. We adopted this convention, as well as one that groups women using lactational amenorrhea method (LAM) or fertility awareness methods with users of traditional methods, even if they obtained/learned of the method from a provider. Women using LAM, fertility awareness and traditional methods, together with women not using any method, were consequently deemed to have unmet need for modern contraception (Table 1).

Categorisation of source and sector of provision
We classified the most recent source and sector of family planning provision as described in Table 1 and previously [19,45]. Across the 57 countries, when we collated all response options and removed duplicates, the surveys included 141 unique family planning provider types: 49 that were in the public sector, 64 in the private-sector and 28 that could not be classified, namely women obtaining methods from husbands/relatives/friends, "other sources", providers abroad, or with a missing source. In the public sector, providers were differentiated into public medical and public non-medical. In the private sector, they were differentiated into: private medical, private specialised drug seller, private retailer, faith-based organisation (FBO), and non-governmental organisation (NGO). The first three private-sector provider categories were assumed to be commercial.

Content and quality: categorisation of types of methods and assessing advice on side-effects
The DHS contain few questions with which to assess content or quality-of-care of family planning provision. We examined the types of contraceptive methods provided (method mix) and advice given on side-effects as proxies for assessing quality-of-care, by provider category, sector and method.

We sought expert advice from Marie Stopes International (who train providers and provide a complete range of contraceptives in many countries) on the skill-level and amount of training required to provide different contraceptives, and the actual time (excluding counselling) needed to dispense/give each method to users. Using this information, we grouped contraceptives into method types: 1) "easy" (no clinical skills required), 2) "medium" (some clinical skill required) and 3) "intensive" (clinical skill required) (Web Table 3). These also largely matched the categorisation of 1) "short-acting", 2) "long-acting reversible", and 3) "permanent" methods [34,48] (Web Table 3), differing only in the classification of injectables, which were in our 2) "medium" category but in the other classification's 1) "short-acting" category. We ultimately decided on four sub-categories, so that injectables could be viewed separately and considered with either "short-acting reversible" or with "medium" (some clinical skill required) methods.

In each country, questions on whether women were advised on side-effects differed in the range of methods inquired about, and in the time elapsed since initiation of the method. We created a data-set of 46 countries which maximized the number of countries available for analyses of side-effect advice, while retaining comparable data (Web Table 2). These 46 countries all asked women who were currently using pills, injectables, implants, IUDs, or sterilisation, where they first obtained their current method, and whether at the time of first use, they were informed of side-effects or problems they might experience with the method, with yes or no response-options. Many countries restricted these questions to women who had initiated their current methods in the five years preceding the survey, so we applied this five-year cut-off to the entire sub-set of countries. We then categorised the first source of current method by sector and provider sub-type as shown in Table 1 and explored information about counselling by method, by source, and by method within provider sub-types with >1,000 users for each of the five methods, while recognising that these responses may not reflect the women's most recent source of provision and may reflect practices up to five years previously.

Missing data

The DHS generally have below 1% missing data, but the Turkish survey only collected fertility preferences (which are required to classify unmet-need status) on a random sub-sample of women. We assumed non-sampled women were missing data completely at random and imputed their fertility preferences, applying the same response distribution as those who were sampled, within each wealth quintile. In all other surveys, missing data on need were negligible and classed as "don't use, don't know need status", a category which was excluded when examining the subset of "women in need". There were no missing data on use of family planning among women in need. Users of modern methods whose provider was missing, or whose sector of provision was unclassifiable, were shown separately (Table 1). Users missing information on side-effect advice (2% of analysis sample) were excluded from the denominator.

Categorisation of socioeconomic position

We stratified our data by three measures of socioeconomic position: wealth quintiles derived by DHS using principal component analysis [49,50], urban/rural residence, and level of education. We used DHS classifications for wealth (except for Nicaragua and Peru where we constructed our own)[19], women's highest achieved level of education ("no education", "primary", "secondary", and "higher") and urban/ rural residence.

Categorisation of geographic regions and overall summary measures

Women in each DHS survey have individual sample-weights used to calculate country-level population-representative summary statistics. We grouped countries into regions as previously described[19], adopting an approach used by others [51] . For simplicity, we refer to the regions as Sub-Saharan Africa, Middle East/Europe, Asia, and Latin America. We recognise that this categorisation is to some degree arbitrary, that there is considerable variation within regions, and that other possible groupings could have been used. In particular, the Middle East region, and to a lesser extent the Latin America & Caribbean region, include very diverse countries. We also show data by individual country to enable others to generate alternative groupings (Web Table 4). We calculated region-level and overall (combining the 57 countries or 46 countries for analysis of side-effect advice) summary statistics by applying weights that accounted for both the country-specific survey design and the country population (using 2008 UN Population Estimates[52]), to ensure that estimates represented the entire population residing in the study countries. Regional and overall summaries were thus weighted averages of country summaries. Non-parametric summary measures (medians and ranges across included countries) are also presented to describe the variability in country profiles. The countries are listed in Web Table 2. Countries without DHS data were excluded from the regional weighting. Analyses were conducted in Stata/SE v13.

Ethical approval

The DHS receive government permission, use informed consent and assure respondents of confidentiality. The Research Ethics Committee of the London School of Hygiene and Tropical Medicine approved our analyses.

Results

We obtained data on 865,547 women aged 15-49 years from 57 countries, representing a total population of 3 billion people (46 countries, and 1.2 billion for advice given on side-effects). The numbers of countries and the proportions of the regions represented are in Table 2.

Patterns

Need among all women: Figure 1.a illustrates need and family-planning use status among all women, for each geographic region. Figures 1.b-1.d show the same results by wealth quintile, educational level, and urban/rural residence. The percentages of women of reproductive age needing contraception were substantial, with 39% of women surveyed being in need in Sub-Saharan Africa, compared to roughly 60% in the other three regions (Middle East/Europe 63%, Asia 58%, and Latin America 60%). In Sub-Saharan Africa, 26% wanted a child in the next two years, compared to 11% in Middle East/Europe, 14% in Asia, and 6% in Latin America; the overall mean was 16% and the median across countries was 13%. These data and the range across countries are also in Table 3; the remainder of women not in need were not at risk of pregnancy, either because they were not sexually active or because they were infecund/menopausal.

Use among all women and met need (use among women who need services): The percentages of all surveyed women using modern contraception were: Sub-Saharan Africa 15%, Middle East/Europe 40%, Asia 39%, and Latin America 43%, and 34% overall (median across countries: 23%). The percentages of women in need using modern contraception were: Sub-Saharan Africa 39%, Middle East/Europe 64%, Asia 67%, and Latin America 72%, and 63% overall (median across countries: 46%). Unmet need (100% minus the percentage of met need) for family planning was thus highest in Sub-Saharan Africa (61%).

Private sector use among women in need: Figures 2.a-2.d show family planning by sector among women in need, for each region in total, and by measures of socioeconomic position. The private sector served 14% of women in need of contraception in Sub-Saharan Africa compared to about 25% in the other three regions (Middle East/Europe, 23%, Asia, 24%, and Latin America, 27%, and 22% overall; median across countries: 16%).

Private use among classifiable service users: Figures 3.a-3.d show the type of service provider among women using modern methods, for each of the four regions in total, and by socioeconomic position. Among users of modern methods of contraception from classifiable sources, the percentages using private providers were: Sub-Saharan Africa 38%, Middle East/Europe 37%, Asia 37%, Latin America 39%, and overall 37%; median across countries: 41%.

Types of providers within the public and private sectors: Among women obtaining their methods from the public sector, nearly all obtained them from the public medical sector, with only <1% of women in Sub-Saharan Africa, Middle East/Europe or Latin America, and 5% in Asia obtaining them from public-sector non-medical providers (Table 3). Figures 4.a-4.d show provider sub-types among women using private providers to obtain modern contraception, for each of the four regions in total, and by socioeconomic-position. Among women obtaining their modern contraceptives from private-sector providers, the percentage using private medical providers was: Sub-Saharan Africa 30%, Middle East/Europe 41%, Asia 60%, Latin America 45%, and overall 54%; median across countries: 23%. Commercial sources (private medical, private specialised drug sellers and private retailers combined) dominated private-sector provision: Sub-Saharan Africa 91%, Middle East/Europe, 97%, Asia 96% and Latin America 96% (overall mean: 96%; median across countries: 99%).

Inequalities
Inequalities in risk of pregnancy, wanting children in the next two years, and needing contraception among all women and inequalities in use (met need and private-sector use among women in need) by wealth quintile are shown in Figures 1.b-3.b. In brief, there was a very slight gradient in need by wealth quintile in Sub-Saharan Africa and in Middle East/Europe, whereby the richest expressed the greatest need. In Asia, the gradient was nearly flat, while in Latin America, the gradient was reversed, with the richest least in need of contraception (Figure 1.b). Richer women were less likely to want a child soon, and less likely to be at risk of pregnancy, mostly because they were more likely to be sexually inactive (22% among the richest versus 13% among the poorest). Gradients of met need by wealth were seen in all settings, with the richest women having the highest met need. The gradient was steepest in Sub-Saharan Africa (Figure 2.b). In all regions, the gradients in private-sector provision of modern contraception by wealth quintile among women in need were in the same direction as those for overall use, but steeper. This indicates the public sector compensated to some degree for the inequalities in private provision, favouring the poor (Figure 3.b). The exception was Sub-Saharan Africa, where the overall service use and the private-sector use gradients were equally steep. Some of these findings have been described previously [19].

The patterns of association between wealth and need or use were echoed in the patterns seen for education and residence, with more privileged groups behaving in similar ways across the three measures of socioeconomic position. The exceptions were first, that patterns of need among all women by educational level were erratic in Middle East/Europe, Asia and Latin America (Figure 1.c). Second, that the pattern in met need was flat in Middle East/Europe and Asia by education level and residence (Figure 2.c and 2.d). Third, the pattern of private sector use among women in need was flat in Middle East/Europe by education (Figure 2.c). In all four regions, there was a steep gradient by privilege (greater wealth, education and urban residence) for private sector use among women using appropriate service types (Figure 3.b-3.d), except for the Middle East/Europe for education, where the most and least educated had slightly less use compared to the two intermediate education categories.

Understanding the private sector: Types of methods and advice on side-effects
Figure 5 presents the methods used by type of provider and in total (for all providers), weighted for country populations and unweighted. The weighted graph shows that overall, 28% of the women used short-acting methods, 15% injectables, 14% LARCs, and 43% permanent methods, with the high share of permanent methods in the weighted compared to the unweighted analysis reflecting the high levels of sterilisation in India and its large population. The method mix across providers appeared to be related to the methods' characteristics in terms of skill-level required, the ease of training, the time needed to provide them, and the extent of permanence. Private retailers and non-medical providers from both sectors provided mainly short-acting methods. Medical providers from both sectors provided the widest mix of the four method types. However, a higher share of clients served by private medical providers received short-acting methods and injectables compared to public medical providers in the weighted data, while these two provider sub-types were more similar (and in a slightly opposite direction) in the unweighted estimates, again reflecting India's contraceptive mix and high population weight.

For each method type, Figure 6 shows the breakdown by provider. Short-acting methods were provided by the widest range of provider sub-types. However, for other methods, the more long-acting or permanent they were, the more likely they were to be provided by public medical providers. NGOs and FBOs did not contribute appreciably to the provision of any method type; private retailers, private specialised drug sellers and unclassifiable sources (husband, relatives/friends or other sources) were important providers of short-acting reversible methods, and private medical providers together with private specialised drug sellers provided nearly half of injectables.

Figure 7 shows that in the 46-country analysis of current users of pills, injectables, IUDs, implants or sterilisation, 50% overall were informed of side-effects when they first obtained their method, although the percentages varied by method (lowest for the pill at 44% and highest for IUDs at 66%) and by provider sub-type. Advice on side-effects was least likely to be provided by private retailers (16%) and private specialised drug sellers (34%). Figure 8 further compares public medical and private medical providers for the five methods. It shows comparable levels of information-provision for pill, implants and IUDs, but some indication that public medical providers, although far from adequate, were better at informing women of side-effects of injectables and female sterilisation.

Discussion

This analysis of where women obtained modern contraceptives by region, wealth quintile, residence and educational level, with its focus on the roles of the public and private sectors, contributes to understanding of family-planning service provision. It goes beyond our overview paper[19] and shows reasons for lack of need among some women, describes inequalities in service provision by education and residence in addition to wealth, presents provider sub-types in both sectors, and examines quality by assessing method mix and side-effect advice. Strengths compared to the literature are that we: 1) clearly delineate who needs services, and who is using them, 2) transparently handle missing and unclassifiable data to indicate the implications of our assumptions, 3) use several measures of central tendency (weighted means and non-parametric statistics), and 4) include more countries than previous studies.

The modern contraceptive prevalence rate (use among all women) was lowest in Sub-Saharan Africa (15%), while levels in the other regions were roughly comparable, with around two-fifths of women using modern contraceptives. The level of use among women in need was also lowest in Sub-Saharan Africa (39%), while in the other regions ranged from 64% to 72%. These patterns are not new and have been reported elsewhere [11,14]. We are the only multi-country comparative study to examine use among women in need of services. The majority of women using modern contraceptives obtained them from the public sector, but private sector provision was substantial, accounting for just under two-fifths of provision in all regions (37%-39% across regions).

Many studies note that private provision of family planning is substantial and growing, although definitions of the private sector vary. We found strikingly similar levels of private-sector use among current users in all regions, which differs from previous reports, particularly for Sub-Saharan Africa. Berman and Rose[20] and Zellner and colleagues[34] both observe that among modern-method users, private-sector sourcing was higher in Latin America than in other regions. Berman and

Rose[20] attribute this to the influence of the Catholic Church which makes Latin American governments reluctant to support family planning services, leaving non-government, private entities to fill the gap. Zellner and colleagues[34] describe countries with low private-sector use (3-14% of users) as being either in the poorest regions of the world (i.e., Sub-Saharan Africa), or transitioning from state-controlled to more open economies (Armenia, Kazakhstan, and Vietnam). Gwatkin et al[35] on the other hand, report the highest average private-sector use in the Middle East and North Africa region (54%), followed by Latin America and the Caribbean (51%), East Asia Pacific (41%), Sub-Saharan Africa (35%), Asia (28%), and Europe/Central Asia (10%). Our findings could differ from those of others because we used population weights within regions when calculating regional averages, examined a different subset of countries, or excluded unclassifiable sources from our estimates, or because the private-sector market share actually changed over time.

We examined provider sub-types in greater detail than previous studies. A previous review and estimate had indicated that faith-based provision is small [53]; our results concurred and also extend this finding to NGO provision. Considering the efforts by some donors to work outside the government sector, this is unexpected, but could have occurred if provider sources were misclassified, for example if NGOs were not strongly branded or were working through public or commercial providers (such as through social marketing or social franchising)[14]. The low NGO and FBO share in private-sector provision meant that nearly all private-sector provision was from private commercial providers (91-97% across regions). The combination of private specialised drug sellers and private retailers accounted for the majority of private-sector provision in Sub-Saharan Africa, whereas in the other three regions, private specialised drug sellers and private medical providers played the predominant role.

We also found that virtually all public-sector provision was medical, with community-based workers making a negligible contribution (≤1% of public-sector services), except possibly in Asia, where they provided 5% of modern contraceptives. Cleland and colleagues[14] note this previously, explaining that scaling-up community-based workers to achieve wide geographical coverage poses logistical difficulties, because large numbers of workers have to be recruited, supplied with contraceptives and supervised.

The descriptive analyses on inequalities by socioeconomic position (Figures 4.b to 4.d) need to be interpreted cautiously, particularly for education. For example, as we move from Figure 1.c to 4.c, the sample size reduces each time, reducing the precision of our estimated proportions. This is not a problem *per se,* because the sample size in each category is sufficient to provide a reasonably precise estimate. However, when we look at country-level statistics, we can see that some countries have very few women educated to a higher level, while others have very few women with no education. This confounding effect means that rather than illustrating the differences in family-planning provision across education levels, we illustrate the differences in family planning provision across countries with low and high levels of education. This effect is most marked in the Middle East/Europe region (Figure 3.c), where the chart appears to show almost no difference in private coverage by education levels. However, inspecting the country-level detail (not shown) revealed that increased education was associated with increased private provision within each country in the region. The discrepancy between the country picture and the regional estimate by education arises because only Egypt and Morocco provide significant numbers of women to the sample in the lowest category of education, so the estimate of private coverage is based mainly on those two countries. Ukraine, on the other hand, provides a large number of highly-educated women to the sample, and has a very low proportion of private provision. The effect does not appear to be a problem when stratifying by wealth quintile because relative wealth is a within-country indicator, nor does it appear to be a problem when stratifying by residence because of the mix of methods and proportions of rural/urban residents within countries.

With these caveats in mind, the richest, urban, and most educated women tended to be at less risk of pregnancy, which decreased need, but were also less likely to want a child soon, which increased it (Figure 1.b-1.d). The lower need in richer women was because they were less likely to be sexually active than poorer women. The gradients in contraceptive use among women in need generally followed expected patterns of higher use and greater private-sector use among the wealthier, urban and most educated women. These patterns have been reported by others [9-15,20,21].

In the Middle East/Europe, Asia and Latin America regions, we found relatively privileged women used fewer public-sector, and more private-sector, services (Figures 2.b-2.d). This finding was also recorded by Gwatkin et al[35] and suggests that generally, public subsidies are benefitting the poor, despite evidence that in some settings they benefit the wealthy [19,42,54]. This relationship did not hold in Sub-Saharan Africa, where we found that the proportion of women in need using the public sector was fairly constant across socioeconomic groups. The reasons why the public-sector failed to favour the poor in this region may relate to high absolute levels of poverty, where the poorest cannot afford the direct or indirect costs of access, even to public facilities, or where even the richest may not have incomes that enable them to purchase private services.

The optimal approach to assessing equity of use among women is to consider those who need contraception rather than measure the contraceptive prevalence rate among all women [21,25]. If, for example, richer women have more need for contraception than poorer women because they desire fewer children, they could well have higher use, while still having equitable met need. Apart from our study, all research examining equity of private-sector coverage has looked at equity of service use among all married women of reproductive age, rather than among those in need of services. We observe high levels of unmet need, even among the wealthiest women (>30% of women in need). There is urgent need to redress this unmet need, and in settings where population growth remains high, more women will need to receive services just to remain at the same modern contraceptive prevalence rate, and services will need to grow even more rapidly to cover unmet need, particularly if need for services is also increasing because of smaller desired family sizes.

The question of whether, and how, the private sector contributes to addressing these pressures is discussed in the literature from three main angles. It is argued that having more providers, including more private providers, can first, create demand for services (i.e., by introducing new methods, marketing and reducing stigma) and second, improve physical access by reducing average distances[14,55,56]. However, the main argument revolves around the scarcity of resources and whether family planning should be free or subsidised for all women or only for the most economically vulnerable. Some authors argue that shifting wealthier women to pay for family planning from the private-sector could free donor or government funding to intensify efforts to reach the poorest via public services [33,57,58]. The latter discourse revolves largely around substitution, and not necessarily about increasing absolute coverage among users.

Governments certainly differ in how much they (or donors) are willing or able to invest in public services, as well as in their views about whether national health goals and universal health coverage are best promoted through predominately public, or deliberately pluralistic, family planning provision, including via contracting out to private providers. We have empirical findings on met need and equity of met need by sector but cannot comment on the underlying question of the extent to which the patterns observed stem from deliberate policies, unintended consequences of these policies, or policy failures, and if so, what types of policies and what types of failures. Others who have examined the effects of expanding private-sector provision show variable results by country: some decreasing inequity (Nigeria, Uganda, Morocco and Indonesia)[21,25]; some experiencing fluctuating or unchanging inequity (Bangladesh, Indonesia and Ghana)[21,25]; and one (Kenya) showing increasing inequity in rural areas and the opposite in urban areas[25]. The purposive selection of countries with high and growing commercial private-sector market shares and high contraceptive prevalence rates (>20%) may have influenced their findings. The question on the effect of expanding private-sector provision on equity merits further study on a wider subset of countries, using women in need as the study population. In the absence of public funding, a predominance of private-sector provision may lead to high inequity, as documented in Paraguay[27]. However, there are also reports that targeting efforts are weak or ineffective, with, for example, the relatively richer benefitting from the expansion of government services in Egypt, or with the private-sector market share being eroded by government expansion in Peru[27,57].

A systematic review of studies comparing all types of private and public ambulatory health care in low- and middle-income countries found 80 studies which indicated that many services, irrespective of sector, scored less than 50% on infrastructure, clinical competence, and practice. The formal private sector was better for drug availability, responsiveness, and effort, but differences between sectors were modest and the authors concluded that the view that one sector is clearly better than another was not supported by their review [59]. In terms of quality, we identified some evidence that reliance on the private sector may have meant less method choice, at least in Sub-Saharan Africa, and to a

lesser extent in Asia. When the poorest women sourced methods from the private sector, they were more likely to frequent "lower" calibre providers, with lower levels of training, and more restricted potential for offering a wide method choice. We cannot tell if women (or their partners) chose the method first and obtained it from their preferred provider, or whether their choices were constrained because their preferred methods and providers were not accessible, affordable, or reliably stocked. On the other hand, non-medical private providers most often provided condoms, which may align with prevention strategies in high HIV prevalence settings[14], such as in Sub-Saharan Africa, which accounts for nearly 70% of new HIV infections globally[60].

Private-sector providers overall, and private retailers/specialised drug sellers in particular, were more likely to be the source of short-term methods, which have higher failure rates, and which are more demanding of users in terms of the need for adherence and the frequency of visits needed for resupply, thus posing higher time and travel costs on women. Zellner and colleagues[34] note that short-acting methods users (which largely overlap with our definition of "short-acting reversible" methods) were more likely to rely on the private sector for their methods than long-acting reversible or permanent contraceptive users. They hypothesised that short-acting methods may be more accessible in terms of proximity to a source and availability of products in the private sector than they are in the public sector, or that the low costs of long-acting methods in the public sector may attract women who could not otherwise afford to pay the private-sector prices. The high up-front costs of long acting/permanent methods in the private sector versus lower initial costs for short-acting methods may also deter women from using them. Some of these differences may stem from the nature of different sub-types of providers, because, for example, private retailers would be unable to provide LARCs or permanent methods. Health facility assessments in Tanzania, Kenya and Ghana comparing public to private (for-profit, NGO and FBO) facilities found that the public sector offered a broader method mix [40]. We compared private and public medical providers (who had similar qualifications and theoretically the same capacity to provide a similar method mix), and while we did not adjust for variations of method mix by country, we found that private medical providers were more likely to give injectables, and public medical providers were more likely to provide sterilisation (weighted). In the unweighted analysis, the method mixes of private medical and public medical providers were more similar.

Quality was assessed by the percentage of women advised on side-effects and was found to be suboptimal (50% overall), although it varied by method and provider sub-type. Within public and private medical providers, side-effect advice was slightly higher and comparable. Health facility assessments in Tanzania, Kenya and Ghana determined that technical quality of family planning provision (assessed by clinical history, examination, appropriate injection practice and length of consultation) was comparable between private and public facilities, while interpersonal quality (waiting time, privacy and confidentiality, client concerns noted, method use explained and injectable prescribed) was higher in private facilities. Client satisfaction (composite of 12 elements of perception) was considerably higher in private facilities [40]. The restriction of this study to facilities may explain differences with our study, where the private sector included commercial and non-health facility based providers.

Limitations
Our study has some limitations. Countries without DHS data were excluded, and representation of the Middle East/Europe and Latin America regions was low. The analyses of side-effect advice further excluded eleven countries which did not collect these data. The surveys asked women about current need and use, but some provision, particularly for long-acting methods and some of the information on side-effects, may have referred to a period of up to five years before the survey, and thus been subject to recall error. Some of the surveys included were from as early as 2000, and practices may have changed since then. We also draw attention to the respondents interviewed: most DHS interview all women of reproductive age, but some in the Middle East/Europe and Asia regions excluded never-married women, resulting in slightly inflated estimates of proportion of women in need.

Other limitations stem from using women's self-reports and the difficulties of working with questionnaires from 57 surveys, where response options were variably conflated, headings were inconsistent, or sector of provision was unclassifiable[45]. As early as 1996, Berman and Rose identified the inconsistent definitions of private providers across countries as problematic [20]; progress has been made in response options in recent survey tools, but improvements are still required to standardise groupings and terminology. There are also limits to what women can

reasonably be expected to report, in terms of correctly classifying providers, for example, where NGO support is provided to private providers through franchising, or where private for-profits are hard to distinguish from not-for-profits, or public from FBOs. It seems necessary to validate women's recall of provider type, and to give strong consideration to improving other non-survey data sources.

Conclusion

To redress nearly two decades of neglect, there is now interest in exploring a range of approaches to deliver family planning services and to improve their quality, including by engaging with the private sector. Our analysis makes an important contribution by describing the different public and private modalities currently contributing to family planning coverage, and by comparing their equity, method-mix and quality of advice given on side-effects by provider type.

Key findings were that Sub-Saharan Africa had the lowest levels of met need, but that there was still large unmet need in other regions. Moreover, all three indicators of socioeconomic position examined showed inequalities in met need. Among family planning users, the main source of provision was the public sector – and almost entirely from medical providers as opposed to community-based health workers. However, the private-sector's role was substantial, accounting for just under two-fifths of provision in all regions, with nearly all contraceptives obtained from private commercial, as opposed to NGO or faith-based, providers. The share of non-medical providers (i.e., retailers) among the private sector was highest in Sub-Saharan Africa. By their nature, these providers are likely to offer the narrowest choice of methods, mainly condoms. We also found that that women using short-acting methods were most likely to obtain them from private-sector providers.

Given the magnitude and significance of private-sector family planning provision in many countries, overall and even among the underprivileged, greater and more systematic efforts are needed to understand more about reasons why women choose the private sector, their quality of care, and how this can be improved. There is also a need to carefully consider and assess the potential impact of the relative attention focused on public versus private sectors on equity. The largest potential market for family planning is among the poor, where there is the greatest unmet need, while private sector services are generally more used by the rich. Both high levels of unmet need and the richest opting for more private use, suggest public services are not meeting at least some aspects users' expectations with respect to convenience, quality or cost. A better understanding of the supply and use of private services, and the impact of private-sector focused interventions, will help governments assess whether national health goals and universal health coverage are best promoted through predominately public, or deliberately pluralistic, family planning provision and how best to balance intervention across sectors.

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Table 1. Classification of sources of family planning provision among women in need by appropriateness of the service type and by sector, with examples[†] of DHS response options

Classification	Definitions and Examples
Did not use any service (unmet need)	Did not use any method but did not want a child in the next two years
Did not use an appropriate service type (unmet need)	Used a traditional method such as withdrawal, abstinence, and folkloric methods (i.e., use of herbs), lactational amenorrhea method (LAM), or fertility awareness methods
Used an appropriate service type	Used a modern contraceptive method **Permanent:** female or male sterilisation **Long-acting Reversible:** implants, intrauterine devices **Injectables:** Depo-Provera and other injectables **Short-acting Reversible:** male and female condoms, diaphragm, foam/jelly, oral contraceptive pills, emergency contraception
Used an appropriate service type; classifiable sector of provision	Used modern contraception and reported a service location other than husband/ friend/ relatives, other providers, providers abroad or missing source of method
Used appropriate, classifiable service: **public sector**	Service location: All government/ public service locations **Public medical:** Public hospital, polyclinic, health center, family doctor, women's health centers, family planning clinics, government pharmacy **Public non-medical:** Public community health worker, government distributor, government campaign
Used appropriate, classifiable service: **private sector**	Service location: All private providers **Private medical:** Private hospital/clinic, private doctor, private nurse/midwife, private health center **Private specialised drug seller:** Private pharmacy, private drug store, private dispensary **Private retailer:** Shop/market, bar/disco, vending machine **Faith-based (FBO):** Mission hospital, health center, mobile clinic, dispensary **NGO:** NGO health facility, mobile clinic, NGO field worker
Used an appropriate service type; sector of provision not classifiable	Used a modern method and reported a missing source location or obtained a method from husband/ friend/ relatives/providers abroad **Missing location of source** **Unclassifiable locations (sector not known):** Husband, friend/relative, peer educators, support group, school, hospital/clinic abroad, missing source

[†] There were 141 unique family planning provider response options across the 57 surveys, so only examples are shown.

Table 2. Geographic regions and percentage of their populations covered by the DHS surveys included in the analysis

Region	UN sub-regions included	Total population in region, 2008 (millions)[1]	% of population of region covered by DHS surveys[2] (for questions on side-effect advice)	Number of countries in region	Number of countries covered (for questions on side-effect advice)
Sub-Saharan Africa	Eastern Africa, Middle Africa, Southern Africa, Western Africa	788	83% (67%)	51	30 (24)
Middle East/ Europe	Northern Africa, Western Asia, Eastern Europe, Southern Europe	864	29% (21%)	51	9 (8)
Asia	Southern Asia, South-Eastern Asia	2,220	88% (16%)	20	10 (6)
Latin America	Caribbean, Central America, South America	583	20% (20%)	48	8 (8)

[1] UN Population Estimates, 2008.
[2] Assuming DHS are nationally representative for each country.

Table 3. Summary of need, use, and sector of use for family planning services across regions (including overall weighted mean of regions) and countries (median and range)

Denominator (Population) Category	Sub-Saharan Africa	Middle East/ Europe	Asia	Latin America	Overall weighted mean of regions	Median (Range) across countries
All women						
Not using any method, missing need status	<1	<1	1	<1	1	0 (0-6)
Not using any method, not at risk of pregnancy	35	26	27	34	29	33 (11-52)
Not using any method, wants a child	26	11	14	6	16	13 (5-50)
Unmet need for family planning (not using any method or using traditional methods)	24	23	19	17	20	24 (11-49)
Use of appropriate family planning methods	15	40	39	43	34	23 (2-57)
TOTAL	100	100	100	100	100	
Selected categories						
Need for family planning	39	63	58	60	54	50 (24-80)
Using public-sector service	9	25	23	25	20	13 (1-46)
Using private-sector service	5	14	14	16	12	8 (1-39)
Women in need						
Unmet need for family planning (not using any method or using traditional methods)	61	36	33	28	37	54 (16-94)
Use of appropriate family planning methods	39	64	67	72	63	46 (6-84)
TOTAL	100	100	100	100	100	
Selected categories						
Using public sector service	22	39	40	42	37	28 (3-58)
Using private sector service	14	23	24	27	22	16 (2-55)
Using unclassifiable sector (husband, relatives, friends or other source) or missing location of service	3	2	3	2	3	2 (0-12)
Women using appropriate service type						
Using public sector service	57	61	60	59	60	56 (15-92)
Using private sector service	35	36	35	38	35	38 (6-72)
Using unclassifiable sector (husband, relatives, friends or other source) or missing location of service	8	3	5	3	5	4 (0-28)
TOTAL	100	100	100	100	100	
Women using appropriate services with a classifiable sector						
Using public sector service	62	63	63	61	63	59 (20-94)
Using private sector service	38	37	37	39	37	41 (6-80)
TOTAL	100	100	100	100	100	
Women using public sector services						
Public medical	99	100	95	100	96	100 (48-100)
Public non-medical	1	<1	5	<1	4	0 (0-52)
TOTAL	100	100	100	100	100	
Women using private sector services						
Private medical	30	41	60	45	54	23 (3-84)
Private specialised drug seller	47	52	31	48	36	43 (0-97)
Private retailer	14	4	5	3	6	6 (0-85)
Faith-based (FBO)	6	1	1	0	1	0 (0-36)
NGO	3	2	3	4	3	0 (0-38)
TOTAL	100	100	100	100	100	
Combined categories						
Private commercial	91	97	96	96	96	99 (27-100)
Private non-commercial	9	3	4	4	4	1 (0-73)
TOTAL	100	100	100	100	100	

1.a Proportions of all women according to need and family planning source, by region

A. All women

1.b Proportions of all women according to need and family planning source, by region and wealth quintile

Legend:
- Not using any method, missing need status
- Not using any method - Not at Risk
- Not using any method - Wants Child
- Not using any method, unmet need
- Not using modern method, using traditional
- Using modern method, missing location of source
- Using modern method, from husband, relatives, friends or other source
- Using Modern - Public sector
- Using Modern - Private sector

Regions: Sub-Saharan Africa, Middle East/Europe, Asia, Latin America

Wealth quintiles: Poorest, Poor, Middle, Richer, Richest

2.a Proportions of women in need of family planning, by source and region

B. Women in need of FP

2.b Proportions of women in need of family planning, by source, region and wealth quintile

Legend:
- Not using any method, unmet need
- Not using modern method, using traditional
- Using modern method, missing location of source
- Using modern method, from husband, relatives, friends or other source
- Using Modern - Public sector
- Using Modern - Private sector

1.c Proportions of all women according to need and family planning source, by region and education

1.d Proportions of all women according to need and family planning source, by region and residence

A. All women

Sub-Saharan Africa | Middle East/Europe | Asia | Latin America (No Educ, Primary, Second, Higher)

2.c Proportions of all women in need of family planning, by source, region and education

2.d Proportions of women in need of family planning, by source, region and residence

B. Women in need of FP

Sub-Saharan Africa | Middle East/Europe | Asia | Latin America (No Educ, Primary, Second, Higher / Rural, Urban)

3.a Proportions of women using modern methods, by source and region

C. Women who use modern methods

Legend:
- Using modern method, missing location of source
- Using modern method, from husband, relatives, friends or other source
- Public non-medical
- Public medical
- Private sector

Regions: Sub-Saharan Africa, Middle East/Europe, Asia, Latin America

3.b Proportions of women using modern methods, by source, region and wealth quintile

Wealth quintiles: Poorest, Poor, Middle, Richer, Richest

Regions: Sub-Saharan Africa, Middle East/Europe, Asia, Latin America

4.a Proportions of private sector users, by source and region

D. Users of modern methods from private sector

Legend:
- Private - NGO
- Private - FBO
- Private retailer
- Private specialized drug seller
- Private medical

Regions: Sub-Saharan Africa, Middle East/Europe, Asia, Latin America

4.b Proportions of private sector users, by source, region and wealth quintile

Wealth quintiles: Poorest, Poor, Middle, Richer, Richest

Regions: Sub-Saharan Africa, Middle East/Europe, Asia, Latin America

3.c Proportions of women using modern methods, by source, region and education

C. Women who use modern methods

Sub-Saharan Africa: No Educ, Primary, Second, Higher
Middle East/Europe: No Educ, Primary, Second, Higher
Asia: No Educ, Primary, Second, Higher
Latin America: No Educ, Primary, Second, Higher

3.d Proportions of women using modern methods, by source, region and residence

Sub-Saharan Africa: Rural, Urban
Middle East/Europe: Rural, Urban
Asia: Rural, Urban
Latin America: Rural, Urban

4.c Proportions of private sector users, by source, region and education

D. Users of modern methods from private sector

Sub-Saharan Africa: No Educ, Primary, Second, Higher
Middle East/Europe: No Educ, Primary, Second, Higher
Asia: No Educ, Primary, Second, Higher
Latin America: No Educ, Primary, Second, Higher

4.d Proportions of private sector users, by source, region and residence

Sub-Saharan Africa: Rural, Urban
Middle East/Europe: Rural, Urban
Asia: Rural, Urban
Latin America: Rural, Urban

Figure 5.Distribution of methods by provider type

Weighted by country population
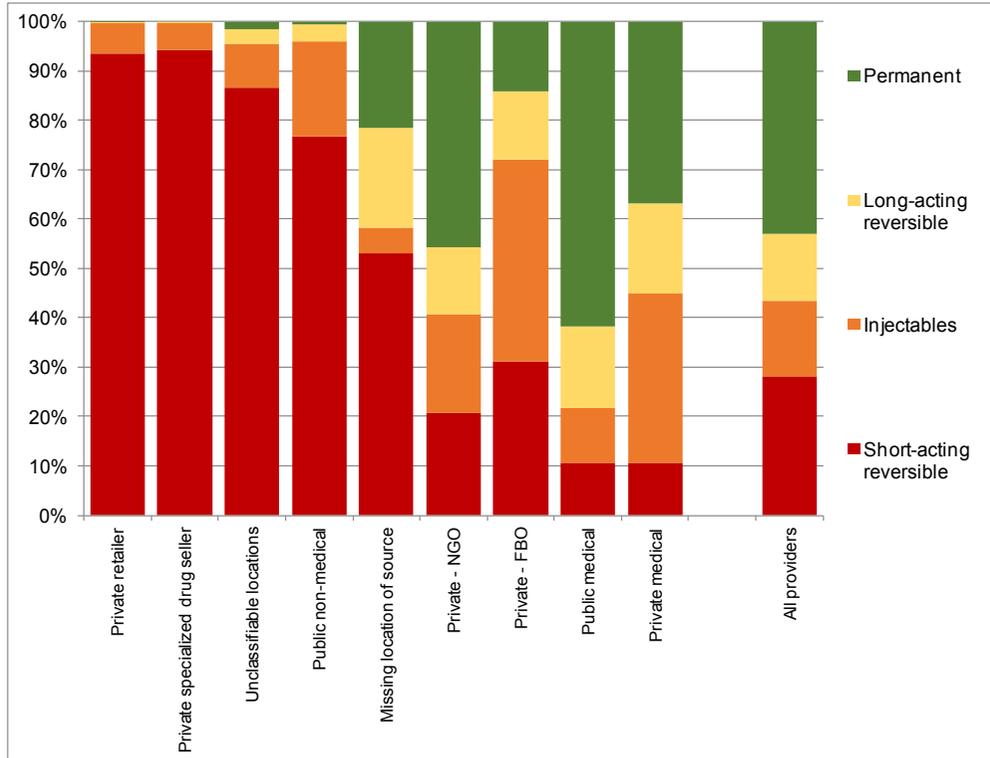
Unweighted, simple means of countries

Legend (left chart):
- Permanent
- Long-acting reversible
- Injectables
- Short-acting reversible

Categories (x-axis):
Private retailer, Private specialized drug seller, Unclassifiable locations, Public non-medical, Missing location of source, Private - NGO, Private - FBO, Public medical, Private medical, All providers
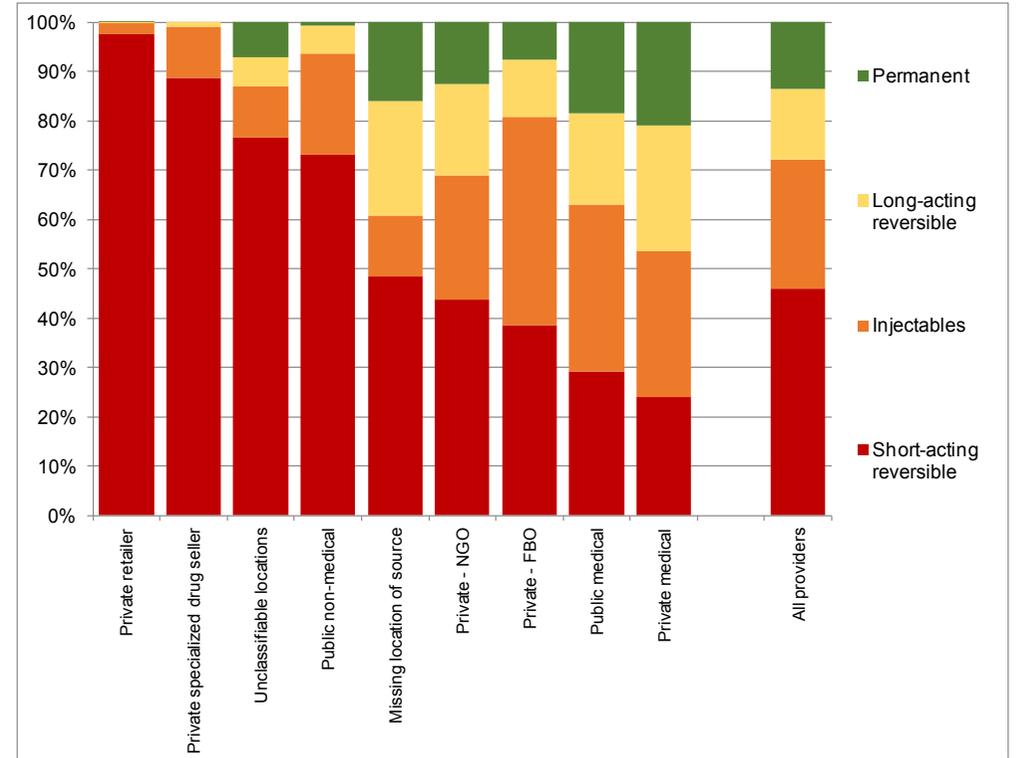
Figure 6. Distribution of provider types among women using modern methods, by method type and overall

Legend:
- Missing location of source
- Unclassifiable locations
- Public non-medical
- Public medical
- Private - NGO
- Private - FBO
- Private retailer
- Private specialized drug seller
- Private medical

X-axis categories: Short-acting reversible, Injectables, Long-acting reversible, Permanent, All methods

Figure 7. Percentage of women who were told about side effects by the first source of current modern FP method

Figure 8. Percentage of women who were told about side effects by the first source of current modern FP method, selected methods and provider categories

Web Table 1. Characteristics of studies that looked at family planning source by sector across multiple countries

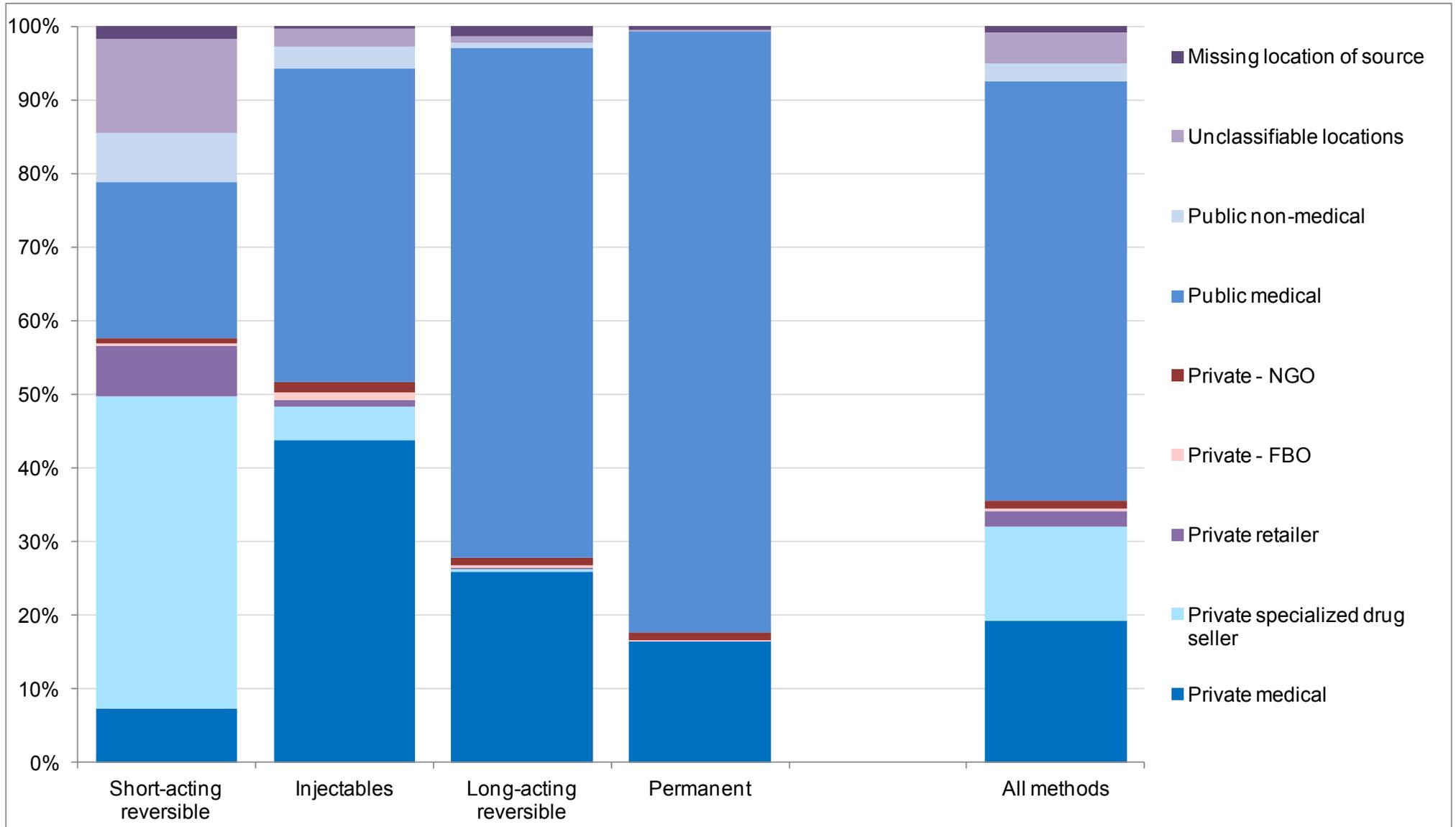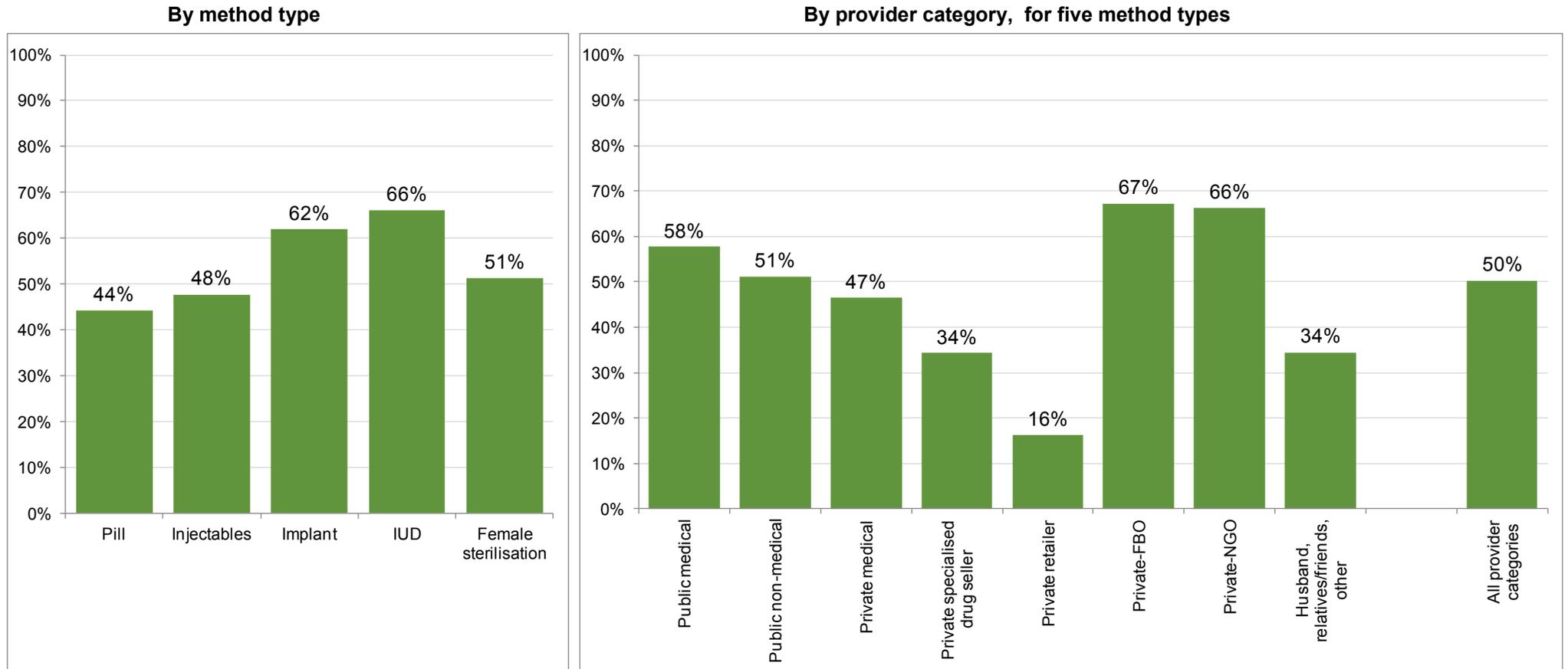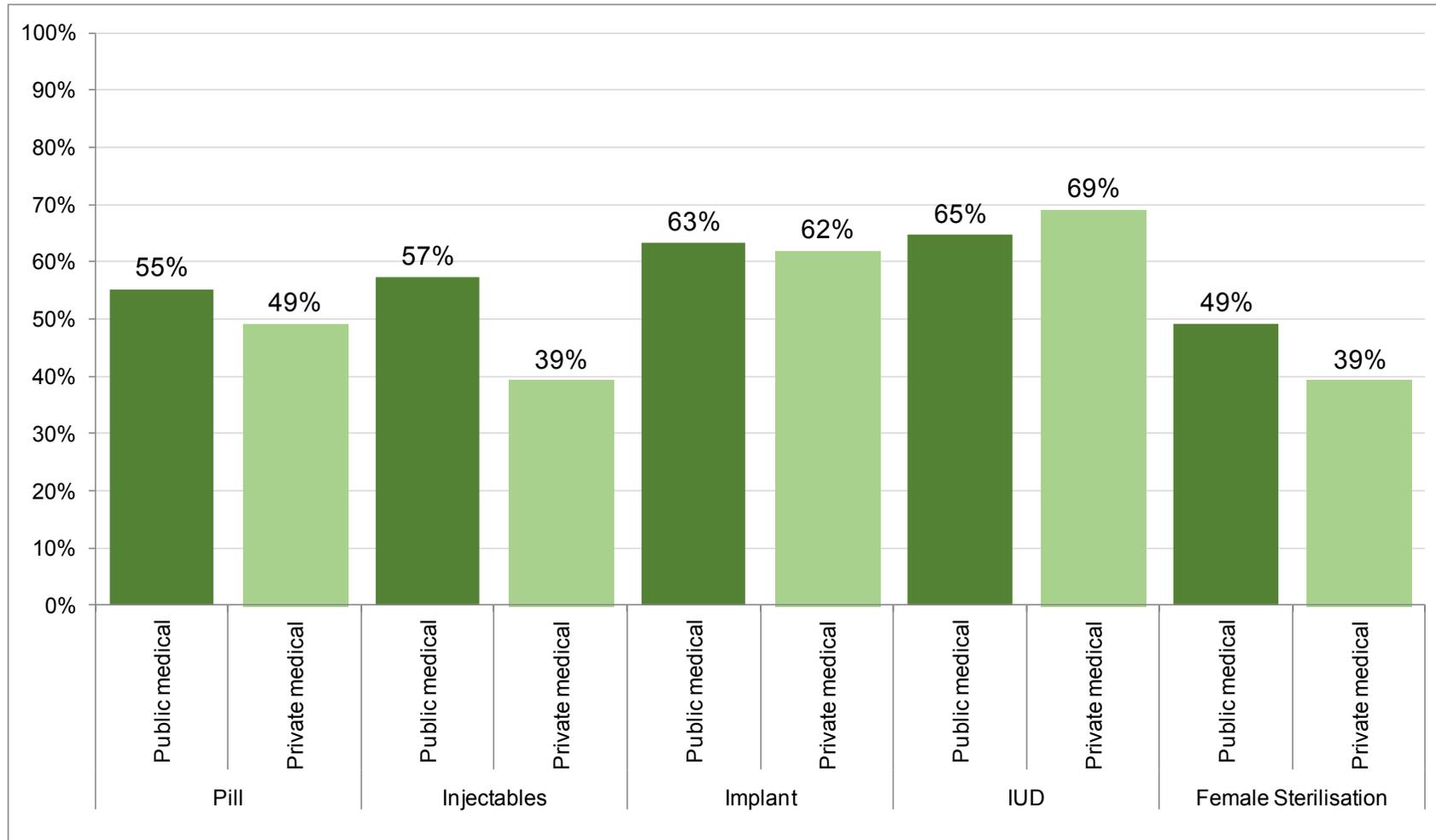| Author, Year Source: **Country/Region** Years Averages Population and recall period	Sector definitions	Equity analysis	Measure of Family Planning and Results
Bulatao et al[1] 1993 DHS, Bangladesh CPS, Honduras Epidemiology& Family Health Survey: **30 countries** in sub-Saharan Africa; North Africa; Asia; Latin America/ Caribbean 1985-1991 Unweighted regional averages constructed **Married women** reproductive age	**Public:** not defined **Pharmacies & shops**: commercial outlets **Private practitioners**: private practitioner, clinic, hospital (including employer-supported services) **Voluntary:** NGOs (private voluntary organizations & various donor-funded agencies), private universities, contractors	**None**	**Sector of modern contraceptive use among users:** modern not defined Unweighted Mean (Range) Pharmacies and shops: Sub-Saharan Africa: 15% (1–38%) North Africa: 25% (9–53%) Asia: 9% (2-18%) Latin America/Caribbean: 19% (2–48%) Private practitioners: Sub-Saharan Africa: 11% (2–38%); North Africa: 13% (9–20%); Asia: 10% (3– 0%); Latin America/Caribbean: 23% (4–54%) Voluntary organizations: Sub-Saharan Africa: 15% (0-49%); North Africa: 0% (0–1%); Asia: 2% (0–5%); Latin America/Caribbean: 15% (0–52%)
Ayad et al[2] 1994 DHS: **25 countries** in Asia; Near East/ North Africa; sub-Saharan Africa; Latin America/ Caribbean 1986-1990 Individual countries –overall averages not constructed **Married women or women in consensual union** 15-49 (15-44 in Guatemala & Brazil)	**Government stationary:** government-run in fixed location **Government mobile:** government outreach workers, mobile units **Pharmacy:** privately owned sources **Other private:** NGOs, private doctors, private clinics, other medical providers **Other sources:** family, friends, inconsistent responses **AND** **Private for-profit:** private doctor, private hospital, private clinic, pharmacy, market, shop **NGO:** IPPF and church institutions **Public:** government, parastatal **Other:** friends, parents, other responses **AND** **Source of information on periodic abstinence** **Public:** government, parastatal **Private:** private doctor, private hospital or clinic, pharmacy, NGO **Church:** Protestant missions, Catholic churches **Other**: friends, parents, other	Sectors by: **Residence:** urban or rural **Woman's education:** none, primary, secondary, or higher	**Sector of modern contraceptive use among users:** modern not defined Pharmacy: Sub-Saharan Africa: 1-23%; Near East/North Africa: 10-46%; Asia: 3-7%; Latin America/Caribbean: 5-46% Other private: Sub-Saharan Africa: 2-52%; Near East/North Africa: 9-26%; Asia: 8-10%; Latin America/Caribbean: 14-56% **Sector of modern clinical methods among users:** defined as IUD, Norplant, male & female sterilisation Pharmacy and Other private (pharmacy ranges from 0-1% in all countries): Sub-Saharan Africa: 11-40%; Near East/North Africa: 8-53%; Asia: 6-9%; Latin America/Caribbean: 20-78% **Sector of modern supply methods among users:** defined as pill, injections condom, vaginal methods (diaphragm, sponge, foam, jelly) Pharmacy: Sub-Saharan Africa: 1-32%; Near East/North Africa: 12-89%; Asia: 4-16%; Latin America/Caribbean: 20-92% Other private: Sub-Saharan Africa: 4-58%; Near East/North Africa: 1-12%; Asia: 7-18%; Latin America/Caribbean: 2-48% **Sector of individual contraceptive methods among users:** pill, IUD, female sterilisation; (injectables, vaginal method, condoms, male sterilisation for some countries) *Pill:* Sub-Saharan Africa: Pharmacies: 1-29%; Other private: 4-59%; Near East/North Africa: Pharmacies: 11-88%; Other private: 1-8%; Asia: Pharmacies: 2-21%; Other private: 3-13%; Latin America/Caribbean: Pharmacies: 11-92%; Other private: 2-51%. *IUD*: Other private: Sub-Saharan Africa: 10-72%; Near East/North Africa: 11-56%; Asia: 3-10%; Latin America/Caribbean: 0-89%. Pharmacy 0% except in Latin America/Caribbean (0-3%). *Female sterilisation:* Other private: Sub-Saharan Africa 6-30%; Near East/North

Author, Year Source: **Country/Region** Years Averages Population and recall period	Sector definitions	Equity analysis	Measure of Family Planning and Results
			Africa: 2-28%; Asia: 3-8% Latin America/Caribbean: 21-88%. Pharmacy 0% in all countries except Egypt (<2%). **Equity of sector of modern contraceptive use among users:** Urban users and those with secondary education or higher were more likely to obtain their methods from the private sector compared to their rural counterparts.
World Bank[3] 1994 DHS, Honduras Epidemiology& Family Health Survey: **15 countries** (Dominican Republic, Egypt, El Salvador, Honduras, Indonesia, Sri Lanka, Thailand, Zimbabwe) (Botswana Brazil, Colombia, Ecuador, Mexico, Trinidad &Tobago, Tunisia) Countries with CPR >30% 1985-1991 Averages constructed for countries with per capita income <$1000 per year and >$1000–not stated how **Married women** reproductive age	**Public:** not defined **Private commercial:** not defined **Private voluntary:** not defined	**Sectors by:** **Residence:** urban or rural **Woman's education:** none, primary, secondary, or higher **(Colombia only)**	**Sector of modern contraceptive use among users:** modern not defined Average (Range) Countries with per capita income below $1,000 per year Private commercial sector: 25% (3–73%); Private voluntary sector: 9% (0–52%) Countries with per capita income above $1,000 per year: Private sector provision: 37% (5–69%); Private voluntary sector: 9% (0–32%) **Equity of sector of modern contraceptive use among users:** In Colombia, government plays a much greater role in the provision of services to users with little or no education and in rural areas; within-country differences in educational background are found between users of government and commercial sources of family planning in Egypt. Jamaica, Morocco. Sri Lanka, and Thailand. (data not shown)
Berman & Rose[4] 1996 DHS: **11 countries** in Asia/ Near East; Africa; Latin America/ Caribbean (Bolivia, Colombia, Guatemala, Paraguay, Botswana, Kenya, Sudan, Uganda, Indonesia, Morocco, Tunisia) 1987-1991 Individual countries –overall averages not constructed **Not currently pregnant women who were ever-married** (8 countries) or **currently-married** (3 countries) 15-49 (Guatemala 15-44)	**Public:** not defined **Private:** pharmacies(unless otherwise specified in survey) **Other:** traditional providers, schools, churches, family & friends, others Relies primarily on classification adopted by each country	**Sectors by:** **Residence:** urban or rural **Women's education:** none, primary, secondary, or higher **Women's current employment:** working or not working	**Sector of modern contraceptive use among users:** modern not defined Overall, Latin American countries dominated in private provision of FP services, ranging from 61.9% (Guatemala) to 83.7% (Paraguay). Mean private sector provision in Latin America was 70%, in Africa 29% and in Asia 22%, and across all countries was 42%. **Equity of sector of modern contraceptive use among users:** Women's education, employment status and urban residence had positive effects on the probability of private provider use. There was no systematic link across countries between private sector use and type of contraceptive provided.
Curtis & Neitzel[5] 1996 DHS: **22 countries** in Asia/ Near East/ North Africa; sub-Saharan Africa; Latin America/ Caribbean 1990-1993 Individual countries –overall averages not constructed **Married women or women in consensual union** 15-49	**Government stationary:** government-run in fixed location **Government mobile:** government outreach workers, mobile units **Pharmacy:** privately owned pharmacy, drug store **Other private:** NGOs, private doctors, private clinics, other medical providers **Other sources:** family, friends, church, general shops, don't know	**Sectors by:** **Residence:** urban or rural **Women's education:** none, primary, secondary, or higher	**Sector of modern contraceptive use among users:** modern defined as pill, IUD, Norplant, injectables, diaphragm, foams, jellies (vaginal methods), condom, female & male sterilisation, periodic abstinence**:** if >1, more effective method chosen in following order: IUD, condom/ vaginal methods, spermicide, periodic abstinence, withdrawal. Pharmacy: Sub-Saharan Africa: <1-36%; Asia: 2-31%; Latin America/Caribbean: 13-47%. Other private: Sub-Saharan Africa: <1-54; Asia: 6%-60%; Latin America/Caribbean: 18-52%. **Sector of modern clinical methods among users:** defined as IUD, Norplant, male & female sterilisation

Author, Year Source: **Country/Region** Years Averages Population and recall period	Sector definitions	Equity analysis	Measure of Family Planning and Results
			Pharmacy: Sub-Saharan Africa: <1%; Asia: <1%; Latin America/Caribbean: <1%. Other private: Sub-Saharan Africa: 0-54%; Asia: 15-70%; Latin America/Caribbean: 23-68%. **Sector of modern supply methods among users:** defined as pill, injections condom, vaginal methods Pharmacy: Sub-Saharan Africa: 0-56%; Asia: 3-81%; Latin America/Caribbean: 50-79%. Other private: Sub-Saharan Africa: 0-60% Asia: 3-25%; Latin America/Caribbean: 5-13%. **Sector of individual contraceptive methods among users** *Pill:* Pharmacy: Sub-Saharan Africa: 0-59%; Asia: 2-84%; Latin America/Caribbean: 47-80%. Other private: Sub-Saharan Africa: 0-65%; Asia: 2-25%; Latin America/Caribbean: 5-14% *IUD:* Pharmacy: Sub-Saharan Africa: 0-1%; Asia: 0-1%; Latin America/Caribbean: 0-8%. Other private: Sub-Saharan Africa: 4-77%; Asia: 16-85%; Latin America/Caribbean: 39-78%. *Female sterilisation:* Pharmacy: Sub-Saharan Africa: 0%; Asia: 0%; Latin America/Caribbean: 0-1%. Other private: Sub-Saharan Africa: 0-57%; Asia: 13-35%; Latin America/Caribbean: 23-77%. **Equity of sector of modern contraceptive use among users:** *Residence*: In 6/11 countries in Sub-Saharan Africa, 6/6 countries in Asia, and 4/5 countries in Latin America/Caribbean, urban users were more likely to obtain their methods from the private sector (pharmacy and other private combined) compared to their rural counterparts. *Woman's education:* In 7/11 Sub-Saharan African, 4/6 Asian, and 4/5 Latin American/Caribbean countries, users with a secondary or higher education were more likely to obtain their methods from the private sector (pharmacy and other private combined) compared to users with no education.
Hanson et al[6]2001 DHS, Honduras Epidemiology & Family Health Survey: **15 countries** (Dominican Republic, Egypt, El Salvador, Honduras, Indonesia, Sri Lanka, Thailand, Zimbabwe) (Botswana Brazil, Colombia, Ecuador, Mexico, Trinidad &Tobago, Tunisia) Countries with CPR >30%	**Public:** not defined	**None**	**Sector of modern contraceptive use among users**: modern not defined. Looking at public sector share of contraception. Public provision of contraception in countries with a CPR of over 30% varied from 19% (Honduras) to 94% (Botswana). Among low-income countries (<$1000 per capita), Honduras, Egypt, the Dominican Republic, Indonesia, El Salvador and Thailand, CPR and public provision of contraception were positively associated. Sri Lanka and Zimbabwe were outliers. Among middle-income countries, (<$1000 per

Author, Year Source: **Country/Region** Years Averages Population and recall period	Sector definitions	Equity analysis	Measure of Family Planning and Results
1985-1991 Individual countries –overall averages not constructed **Married women** reproductive age			capita), Brazil, Colombia, Trinidad and Tobago, Ecuador, Mexico, Tunisia and Botswana, CPR was negatively and significantly associated with public sector share of contraception.
CDC & ORC Macro[7]2003 RHS & DHS: **12 countries** in Eastern Europe & Eurasia (Armenia, Azerbaijan, Czech Republic, Georgia, Kazakhstan, Kyrgyz Republic, Moldova, Romania, Russia, Turkmenistan, Ukraine, Uzbekistan) 16 surveys 1993-2001 Individual countries -overall averages not constructed **Married women or women in consensual union 15-44**	**Public medical sector:** maternity hospitals, gynaecologic wards, women's consultation clinics, polyclinics, village hospitals, dispensaries **Private clinic/office:** private clinics, NGOs **Commercial sales:** pharmacies **Other:** partners, friends, relatives	**Not by sectors**	**Sector of modern contraceptive use among users:** modern defined as pill, IUD, condom, sterilisation, injectables, spermicides, diaphragm Public medical 32-95%; Private clinic/office 0-8%; Commercial sales 4-59%; Other 0-11% **Sector of individual contraceptive methods among users:** *Pill* Public medical 12-75%; Private clinic/office 0-7%; Commercial sales 17-86%; Other 0-12% *Condom* Public medical 0-26%; Private clinic/office 0-8%; Commercial sales 60-98%; Other 2-29% *IUD* Public medical 61-99%; Private clinic/office 0-28%; Commercial sales 0-19%; Other 0-4%
Taylor et al[8] 2004 DHS & RHS: **9 countries** in Latin America/ Caribbean (Bolivia, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Nicaragua, Paraguay, Peru) 2 surveys per country Time trends 1989-1996 & 1998-2004 Individual countries -overall averages not constructed **Married women or women in consensual union 15-49**	**Ministry of Health** **Private:** not defined **AND** **For those covered by social security** **Ministry of Health:** clinic, hospital or program **Social security institute:** system clinics, hospital or program **Commercial pharmacy** **Other:** private sector clinic or hospital, NGO, community promoter, other	**Ministry of Health sector by:** **Wealth quintiles**	**Sector of modern contraceptive use among users:** modern not defined Ministry of Health share increased between the two surveys in all countries except Ecuador, ranging from 25-68% across countries on the more recent survey. Private sector share ranged from 19%-61% on the more recent survey; having declined in all countries except Paraguay and Ecuador. Among users covered by social security, commercial pharmacy provision of methods ranged from 4% (El Salvador) to 51% (Paraguay), and other provision from 16% (Peru) to 47% (Honduras). **Equity of sector of modern contraceptive use among users of Ministry of Health services:** In 7 countries assessed, between 20-50% of users of methods from Ministry of Health sources were from the wealthiest two quintiles.
Sharma et al[9] 2005 DHS or RHS: **9 countries** in Latin America/ Caribbean (Bolivia, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Nicaragua, Paraguay, Peru) 2 surveys per country Time-trends 1989-1996 & 1998-2004 Individual countries -overall averages not constructed **Married women or women in consensual union 15-49**	**Ministry of Health** **Social Security** **Private clinics/hospitals** **Commercial pharmacies** **NGOs** **Other:** not defined	**Sectors by (Peru only):** **Wealth quintiles**	**Sector of modern contraceptive use among users:** modern defined as oral contraceptives, injectables, IUD, condoms, male & female sterilisations Private sector range 19-74%. Trend decreasing over time in 7/9 countries. **Equity of sector of modern contraceptive use among users** In Peru, following a free condom policy, contraceptive coverage increased but the non-MoH sector share fell from 41% to 31% (private clinic/hospitals, commercial pharmacies, NGO from 29% to 19%) between 1992 and 2000. Declines in non-MoH sector by wealth quintile ranges from 4% -17% and were biggest in the middle quintile.
Zellner et al[10]2005 DHS & RHS: **46 countries** in Sub-Saharan Africa;	**Private:** for-profit & not-for-profit (private practitioners, clinics, hospitals, laboratories,	**Private sector by:** **Wealth quintiles:**	**Sector of modern contraceptive use among users:** modern defined as pill, IUD, condoms, sterilisation

Author, Year Source: **Country/Region** Years Averages Population and recall period	Sector definitions	Equity analysis	Measure of Family Planning and Results
North Africa/ West Asia/ Europe; South Central/ Southeast/ East Asia; Latin America/ Caribbean 1999-2005 Individual countries -overall averages not constructed **Married women or women in consensual union** 15-49	diagnostic facilities, NGOs, FBOs, shopkeepers, traditional healers, pharmacies, pharmaceutical wholesalers, distributors, manufacturers)	two bottom wealth quintiles combined; middle & fourth wealth quintiles combined; richest quintile **Public sector by:** Richest current users	Private sector: Sub-Saharan Africa: 6-51%; North Africa/West Asia/Europe: 3-49%; South Central/Southeast/East Asia: 11-39%; Latin America/Caribbean: 17-67%. **Sector of long-acting & permanent methods among users:** methods defined as IUD, female & male sterilisation, implants Private sector: Sub-Saharan Africa: 8-56%; North Africa/West Asia/Europe: 14-43%; South Central/Southeast/East Asia: 5-67%; Latin America/Caribbean: 15-57%. **Sector of short-acting methods among users**: methods defined as oral contraceptives; injectables; female & male condoms; diaphragm; foams, jellies, & other vaginal methods). Non-purchased methods such as fertility awareness-based methods excluded. Private sector: Sub-Saharan Africa: 8-65%; North Africa/West Asia/Europe: 5-66%; South Central/Southeast/East Asia: 20-78%; Latin America/Caribbean: 17-87%. **Equity of sector of modern contraceptive use among users** *The proportion of users obtaining modern methods from the private sector by wealth quintile:* Sub-Saharan Africa: Poorest/Poorer: 14-52%, Richest: 14-61%. North Africa/West Asia/Europe: Poorest/Poorer: 26-39%, Richest: 40-46%. South Central/Southeast/East Asia: Poorest/Poorer: 7-62%, Richest: 12-73%. Latin America/Caribbean: Poorest/Poorer: 5-57%, Richest: 41-76%.
Gwatkin et al[11]2007 DHS: **56 countries** in East Asia/ Pacific; Europe/ Central Asia; Latin America/ Caribbean; Middle East/ North Africa; South Asia; sub-Saharan Africa Multiple surveys per country (95 surveys) 1991-2004 Regional and total averages - unweighted **Married women or women in consensual union** 15-49 **Men**	**Public facility:** government hospitals, health centres, health posts, dispensaries; facilities operated by government-affiliated social securing programs **Private facilities**: private hospitals or clinics, private doctors' offices, facilities operated by other private medical providers (such as NGOs) as defined in the country concerned; private pharmacies or shops	**Sectors by: Wealth quintiles Low-high quintile ratio Low-high quintile difference Concentration index**	**Sector of modern contraceptive use among users (women):** modern defined as male & female sterilisation, oral contraceptive pill, injectables, intrauterine device, male & female condom, diaphragm, cervical cap, contraceptive jelly or foam, implant, or some country-specific modern methods. Proportion of users obtaining methods from private sector by region: All regions: 36%; East Asia/Pacific: 41%; Europe/Central Asia: 10%; Latin America/ Caribbean: 51%; Middle East/North Africa: 54%; South Asia: 28%; Sub- Saharan Africa: 35%. **Sector of modern contraceptive use among users (men):** modern defined as above. Proportion of users obtaining methods from private sector - only available for Brazil (1996): 51%. **Equity of sector of modern contraceptive use among users** *Private sector by wealth quintile:* (low/high ratio, low-high difference, concentration index) All regions: 0.608, 17.804, 0.17672 East Asia/Pacific: 0.641, 18.995, 0.15519; Europe/Central Asia: 0.564, 6.383, 0.17844; Latin America/Caribbean: 0.511, 31.782, 0.15452; Middle East/North Africa: 0.571, 29.004, 0.09202; South Asia: 0.265, 34.002, 0.27843; Sub-Saharan Africa: 0.726, 11.343, 0.18394. (No interpretation or discussion of data or findings)

Author, Year Source: **Country/Region** Years Averages Population and recall period	Sector definitions	Equity analysis	Measure of Family Planning and Results
Khan et al[12] 2007 DHS: **35 countries** in sub-Saharan Africa; North Africa/West Asia/Europe; South/ Southeast Asia; Latin America/Caribbean Multiple surveys per country (97 surveys) Time-trends 1987-2005 Individual countries –overall averages not constructed **Married women or women in consensual union** 15-49	**Public sector**: not defined **Private medical sector**: not defined **NGOs** **Other:** not defined Country-specific definitions of these sources are maintained to facilitate analysis For trend analysis, private pharmacy comes as O*ther* or *Private medical* depending on survey; Field workers come as *Other or Government/public* depending on survey, *Other* and *NGOs* are pooled	**Private medical sector by:** **Wealth quintiles** **Residence:** urban or rural **Women's education:** none, primary, secondary, or higher	**Sector of modern contraceptive use among users:** modern defined as female & male sterilisation, pill, IUD, injectables, implants (such as Norplant), female & male condom, emergency contraception, diaphragm, foam/jelly. Excluded: lactational amenorrhea method (LAM). In case of concurrent method use, source of the most effective method is used Proportions obtaining methods from the private sector: (Region: mean; range) Private medical sector: Sub-Saharan Africa: 7–57%; North Africa/Middle East: 3–66%; South/Southeast Asia: 7–63%; Latin America/Caribbean: 15–55% NGOs: Sub-Saharan Africa: 0-12%; North Africa/Middle East: 0-3%; South/Southeast Asia: 0-8%; Latin America/Caribbean: 0-36% **Equity of sector of modern contraceptive use among users:** In general, urban women, more-educated women, women in wealthier households were more likely to use a private medical source, except Malawi, where rural women are more likely than urban women to use a private medical source. **Trends among users of modern contraceptive methods.** In sub-Saharan Africa, the percent using the non-public sector increased in about half of the countries and stayed the same or decreased in the rest. The percentage increased in most countries in South/Southeast Asia, but decreased in most countries in Latin America and the Caribbean, and in North Africa/West Asia/Europe.
Stupp et al[13]2007 RHS: **4 countries** in Central America (El Salvador, Honduras, Guatemala, Nicaragua) 3 surveys per country Time trends 1987-1993 1995-1998 2001-2002 Individual countries –overall averages not constructed **Married women or women in consensual union** 15-49 (15-44 Guatemala)	**Ministry of Health** **Social Security:** (except Nicaragua with MoH) **Family planning association** **Private:** private provider, private clinic, pharmacies **Other:** not defined **Don't know**	**Sectors by:** **Wealth quintiles**	**Sector of modern contraceptive use among users:** modern defined as female sterilisation, injectables, orals, intrauterine devices (IUDs), condoms, vaginal methods, vasectomy, Norplant Between 1987-2002, percent of users who obtaining methods from private clinics decreased in El Salvador from 4% to 2%, in Guatemala from 18% to 14%, in Honduras from 21% to 12%, and in Nicaragua from 12% to 11%. The percent of users who obtained methods from pharmacies changed in El Salvador from 9% to 5%, in Guatemala from 7% to 11%, in Honduras from 13% to 11%, and in Nicaragua from 17% to 12%. **Equity of sector of modern contraceptive use among users:** On the most recent survey in each country, wealthier users were more likely to obtain methods from private sector providers. Among the wealthiest quintile, private sector use ranged from 10-45% across the countries. In the poorest quintiles, private sector use ranged from <5% to 11% across the countries.
Agha & Do[14]2008 DHS: **5 countries** in Africa; Asia (Morocco, Indonesia, Kenya, Ghana, Bangladesh) Modern CPR>20% & commercial sector share> 30%, 3+ surveys per country, & growing share of commercial sector 1987-2004 Individual countries –overall averages not	**Public:** government hospitals/clinics, government health centres **Private**: private hospitals/clinics, private doctors, pharmacies, shops/stores **NGO/other:** NGOs, friends/relatives	**Sectors by:** **Wealth quintile** Household assets common across DHS rounds in each country used.	**Sector of modern contraceptive use among users:** modern not defined From the earliest to the most recent included survey, the percentage of users obtaining methods from the private sector changed in Morocco (20-40%), Indonesia (12-65%), Kenya (9-32%), Ghana (25-42%) and Bangladesh (15-34%). **Equity of sector of modern contraceptive use among users** From the earliest to the most recent included survey, the percentages of users obtaining methods from the private sector changed in Morocco in the poorest (7-

Author, Year Source: **Country/Region** Years Averages Population and recall period	Sector definitions	Equity analysis	Measure of Family Planning and Results
constructed **Married women or women in consensual union** 15-49			39%) and the richest quintile (23-64%), in Indonesia the poorest (3-31%) and the richest quintile (52-75%), in Kenya the poorest (6-15%) and the richest quintile (22-46%), in Ghana the poorest (25-31%) and the richest quintile (25-47%), and in Bangladesh the poorest (5-35%) and the richest quintile (18-57%).
Limwattananon[15]2008 DHS: **25 countries** in sub-Saharan Africa; South/ Southeast Asia Multiple surveys; 2 most recent 1995-2000 & 2001-2006 Individual countries –overall averages not constructed **Married women or women in consensual union** 15-49	**Public:** government hospital/ clinic, government field worker, family welfare centre **Formal Private**: private hospital/ clinic, doctor, pharmacy, NGO clinic, depot holder, fieldworker **Informal**: shop, church, friend/ relative, other, unspecified	**Sectors by: Urban/rural and richest/poorest wealth quintiles**	**Sector of modern contraceptive use among users:** modern not defined Private sector provision 3-70%. In 10/21 countries in sub-Saharan Africa and South/Southeast Asia over 50% obtained methods from the private sector. Private formal and informal sector: Sub-Saharan Africa: 20-79%; South/Southeast Asia: 15-72%. **Equity of sector of modern contraceptive use among users** 7/20 countries had a urban rural gap of more than 20% in private sector use, with urban women using more private in all cases. 7/20 had a richest-poorest quintile gap of >20%, with the richest using more private contrasted to the poorest in 18 countries. In the other two, Mozambique and Mali, both the public and private sectors were more used by the richest. **Trends** Between the DHS surveys, the formal private sector share for Cameroon, Malawi and Cambodia decreased by >10%, while Indonesia's formal private sector share increased by 22%. During the same period, the informal private sector share changed by more than 10%, increasing in Cameroon, Cambodia and Malawi (25%), but decreasing in Uganda.
Hotchkiss et al [16]2011 DHS: **4 countries** (Nigeria, Uganda, Bangladesh, Indonesia) 3+ rounds & an expansion in private commercial sector (excluding NGOs) 1987-2008 Individual countries –overall averages not constructed **Married women or women in consensual union** 15-49	**Government sector:** not defined **Private commercial sector**: commercial outlets including chemists, shops, pharmacies, traditional healer/ doctor, midwife, & private health care facilities & workers **Other sources:** NGOs, faith-based organizations (FBOs), relatives, friends, others	**Sectors by: Poorest wealth quintile**	**Sector of modern contraceptive use among users:** modern defined as male condoms, pills, IUDs, injectables, diaphragm, foam, jelly, sterilisation, and implant. Lactational amenorrhea method (LAM) was not classified as a modern method. Between the earliest survey (1987-1999) and the most recent (2006-2008), the proportion of users obtaining methods from the private sector increased in all four countries, and ranged from 40-70% in the most recent survey rounds. **Equity of sector of modern contraceptive use among users** The proportion of users from the poorest wealth quintile who used private sector sources increased over time in each country. At the most recent survey (2006-2008), more than half relied on the private sector for FP provision in Indonesia and Nigeria, with about a third and a quarter relying on the private sector in Uganda and Bangladesh, respectively.
Nguyen et al[17]2011 DHS: **6 countries** in Sub-Saharan Africa (Ethiopia, Kenya, Malawi, Rwanda, Tanzania, Uganda) 1999-2006 Individual countries –overall averages not constructed **Women using modern contraception** 15-49	**Public:** not defined **Private for-profit (facilities):** hospital and clinics **Private for-profit (pharmacies):** pharmacies, drug vendors, shops **Private not-for-profit:** not defined **Other:** not defined	**None**	**Sector of modern contraceptive use among users:** modern not defined In all countries except Uganda, the public sector played a larger role than the private sector in the provision of FP services (ranging between 53-80% of users). 58% of users in Uganda obtained methods in the private sector. Within the private sector, private facilities dominated the market for the pill and IUDs, while pharmacies and drug vendors provided the majority of condoms. Private sector share of the oral pill ranged from 6% (Malawi) to 55% (Uganda) for private facilities, and 1% (Malawi) to 23% (Kenya) for pharmacies and drug vendors; for IUDs from 7% (Malawi) to 47% (Uganda) for private facilities; and for condoms from 0.7% (Rwanda 2005) to 20 (Uganda) for private facilities, and from 39% (Malawi) to 73% (Tanzania, 2004) for

Author, Year Source: **Country/Region** Years Averages Population and recall period	Sector definitions	Equity analysis	Measure of Family Planning and Results
			pharmacies and drug vendors.
Chapman et al[18]2012 DHS: **11 countries** in sub-Saharan Africa 2 surveys per country, both men & women surveyed in same year and a PSI program 1998-2007 Individual countries –overall averages not constructed **Men and women with a non-married, non-cohabiting partner** Men: 15-24 Women: Not stated	**Public:** government hospital, government health centre, family planning clinic, mobile clinic, other public, rural health centre **Private:** private hospital, private doctor, other private, mission facility, other retail **Pharmacy** **Shop:** gas station or general shop **Friends or family** **Other:** bars, clubs, church	**Not by sectors**	**Sector of condoms among users at last sex with their non-marital, non-cohabiting partner** Female users Private sector: 1-16% (first survey); 0-16% (second survey) Pharmacy: 0-27% (first survey); 0-26% (second survey). Shop: 21-73%(first survey); 31-67%(second survey) Other (bars, clubs, church):0-3% (first survey); 0-19%(second survey) Male users Private sector provision: <1-18% (first survey); 0-12% (second survey). Pharmacy provision: <1-37% (first survey); <1-14% (second survey). Shop: 9-83% (first survey); 40-71%(second survey) Other (bars, clubs, church): 0-8% (first survey); 0-37% (second survey)
Ross & Agwanda[19]2012 DHS & UNDP: **38 countries** in sub-Saharan Africa Multiple surveys per country (95 surveys) 1980-2008 Individual countries –overall averages not constructed **Married women or women in consensual union using injectables** 15-49	**Public:** not defined **Non-public:** private medical sector and pharmacies	**None**	**Sector of injectables among users** The public sector was the primary source of injectables. In the East/South region, the percentage of users obtaining injectables from public sector ranged from 56-96% in the earlier and from 36-95% in the more recent survey. In the West/Central region, percentage of users obtaining injectables from public sector ranged from 32-98% in the earlier and from 54-97% in the more recent survey.
Wang et al[20] 2012 DHS & SPA: **4 countries** (Tanzania, Kenya, Rwanda, Uganda) 5 surveys 2003-2010 Individual countries –overall averages not constructed **Currently married women** 15-49	**Public:** public hospital, public health centre, public clinic/ dispensary, other public **Private:** private hospital/clinics, private pharmacy, other private **Other sources:** shop, friends/church, other, missing	**Not by sectors**	**Sector of modern contraceptive use among (excluding condoms) users:** Proportion of users obtaining methods from private sector varied from Kenya (37% on more recent survey), Rwanda (6%), Uganda (54%) and Tanzania (20%), and private hospitals/clinics were the predominant type of private provider. **Sector of individual contraceptive methods among users** *Injectables:* Proportion of users obtaining injectables from private sector ranged from 4% in Rwanda to 59% in Uganda. *Pill:* Proportion of users obtaining pills from private sector ranged from 8% in Rwanda to 70% in Uganda. *Condom:* Proportion of users obtaining condoms from private sector ranged from 16% in Rwanda to 30% in Uganda.

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Web Table 2: List of countries included in the analyses of family planning by survey year, characteristics of women sampled and whether data were collected on whether women were advised about side-effects

	Country	Survey Year	Women of reproductive age interviewed	Analysis of side-effect advice
Sub-Saharan Africa	Benin	2006	all	
	Burkina Faso	2010	all	
	Burundi	2010	all	
	Cameroon	2011	all	
	Chad	2004	all	No
	Republic of the Congo	2005	all	No
	Dem. Republic of Congo	2007	all	
	Ethiopia	2011	all	No
	Gabon	2012	all	
	Ghana	2008	all	No
	Guinea	2005	all	
	Kenya	2008-9	all	
	Lesotho	2009	all	
	Liberia	2007	all	No
	Madagascar	2008-9	all	
	Malawi	2010	all	
	Mali	2006	all	
	Mozambique	2011	all	
	Namibia	2006-7	all	
	Niger	2006	all	
	Nigeria	2008	all	
	Rwanda	2010	all	
	Sao Tome & Principe	2008-9	all	
	Senegal	2010-11	all	
	Sierra Leone	2008	all	
	Swaziland	2006-7	all	No
	Tanzania	2010	all	
	Uganda	2011	all	
	Zambia	2007	all	
	Zimbabwe	2010-11	all	
	Number of countries		**30**	**24**
Middle East/ Europe (North Africa/ Western Asia/ Europe)	Albania	2008-9	all	
	Armenia	2010	all	
	Azerbaijan	2006	all	
	Egypt	2008	ever-married	
	Jordan	2007	ever-married	
	Moldova	2005	all	
	Morocco	2003-4	all	
	Turkey	2003	ever-married	No
	Ukraine	2007	all	
	Number of countries		**9**	**8**
Asia (South/ Southeast Asia)	Bangladesh	2011	ever-married	No
	Cambodia	2010	all	
	India	2005-6	ever-married	No
	Indonesia	2007	ever-married	
	Maldives	2009	ever-married	
	Nepal	2011	all	
	Pakistan	2006-7	ever-married	No
	Philippines	2008	all	
	Timor-Leste	2009-10	all	
	Vietnam	2002	all	No
	Number of countries		**10**	**6**
Latin America (Latin America & Caribbean)	Bolivia	2008	all	
	Colombia	2010	all	
	Dominican Republic	2007	all	
	Guyana	2009	all	
	Haiti	2012	all	
	Honduras	2011-12	all	
	Nicaragua	2001	all	
	Peru	2000	all	
	Number of countries		**8**	**8**
	TOTAL countries	**57**	**57**	**46**

Web Table 3. Grouping of modern contraceptives by duration, ease of training and the actual time needed to deliver the method, excluding counselling

Contraceptive methods	Literature	Our Initial Classification:		Final Classification:
		Skill level & ease of training a lower-rank medical professional to provide method (1 – easiest, 10 – most difficult)	Minutes needed to provide (max) excluding counselling	
Female and male sterilisation	Long-acting (permanent)	Intensive (10)	20 minutes	Sterilisation (permanent)
Implant and IUD	Long-acting Reversible (LARCs)	Medium (8)	10 minutes	LARCs
Injectables	Short-acting	Medium (8)	10 minutes	Injectables
Oral contraceptive pill, female and male condom, diaphragm, foam/jelly, other (including emergency contraception)	Short-acting	Easier (2-3)	1 minute	Other short-acting methods (user-administered)

Web Table 4. Selected need, use and sector of use characteristics, by country (for category definitions, see Table1)

Region	Country	Women in need					Women using appropriate services with a classifiable sector		Women using private sector services				
					Selected categories								
		Unmet need for FP	Use of appropriate FP methods	Using public sector	Using private sector	Using unclassifiable sector	Using public sector	Using private sector	Private medical	Private specialised drug seller	Private retailer	FBO	NGO
Sub-Saharan Africa	Benin	83.0%	17.0%	7.2%	8.1%	1.7%	46.9%	53.1%	10.9%	53.7%	28.0%	1.1%	6.3%
	Burkina Faso	60.2%	39.8%	29.3%	8.8%	1.7%	76.9%	23.1%	5.2%	46.2%	48.4%	0.2%	0.0%
	Burundi	67.3%	32.7%	28.5%	3.7%	0.5%	88.5%	11.5%	28.3%	59.6%	8.5%	3.5%	0.0%
	Cameroon	61.1%	38.9%	7.8%	20.7%	10.4%	27.4%	72.6%	9.1%	36.9%	49.5%	4.6%	0.0%
	Chad	94.1%	5.9%	3.6%	2.1%	0.3%	63.2%	36.8%	20.5%	19.3%	40.7%	0.0%	19.5%
	Congo-B	77.1%	22.9%	5.0%	11.8%	6.0%	29.8%	70.2%	8.5%	54.4%	37.0%	0.0%	0.0%
	DRC	83.9%	16.1%	3.3%	9.9%	2.8%	25.1%	74.9%	14.4%	80.3%	5.1%	0.2%	0.0%
	Ethiopia	49.3%	50.7%	41.6%	7.4%	1.7%	84.8%	15.2%	66.4%	14.8%	6.4%	0.0%	12.4%
	Gabon	55.7%	44.3%	6.5%	25.5%	12.2%	20.4%	79.6%	4.6%	82.8%	11.8%	0.0%	0.9%
	Ghana	69.0%	31.0%	11.3%	14.9%	4.9%	43.1%	56.9%	10.8%	87.5%	1.0%	0.4%	0.4%
	Guinea	81.8%	18.2%	6.5%	7.0%	4.7%	48.4%	51.6%	9.0%	41.7%	49.3%	0.0%	0.0%
	Kenya	44.8%	55.2%	31.8%	22.0%	1.4%	59.2%	40.8%	52.9%	25.5%	9.2%	12.3%	0.0%
	Lesotho	32.5%	67.5%	37.9%	24.5%	5.0%	60.8%	39.2%	26.8%	7.8%	23.2%	17.9%	24.3%
	Liberia	74.2%	25.8%	13.1%	8.1%	4.6%	61.8%	38.2%	32.2%	32.2%	2.8%	0.0%	32.9%
	Madagascar	53.0%	47.0%	34.3%	10.9%	1.8%	75.9%	24.1%	61.1%	23.4%	14.9%	0.7%	0.0%
	Malawi	41.1%	58.9%	43.5%	14.7%	0.7%	74.7%	25.3%	13.7%	0.2%	12.6%	35.8%	37.6%
	Mali	81.6%	18.4%	9.6%	7.5%	1.3%	55.9%	44.1%	10.2%	82.7%	7.1%	0.0%	0.0%
	Mozambique	63.9%	36.1%	27.7%	4.4%	4.1%	86.3%	13.7%	18.2%	76.5%	5.3%	0.0%	0.0%
	Namibia	22.7%	77.3%	57.6%	16.4%	3.4%	77.9%	22.1%	31.8%	15.6%	52.5%	0.1%	0.0%
	Niger	81.1%	18.9%	12.8%	5.4%	0.8%	70.2%	29.8%	7.2%	76.9%	15.9%	0.0%	0.0%
	Nigeria	70.3%	29.7%	6.9%	18.6%	4.2%	27.2%	72.8%	17.1%	78.1%	3.9%	0.1%	0.8%
	Rwanda	38.1%	61.9%	56.9%	3.9%	1.1%	93.6%	6.4%	23.5%	40.7%	35.9%	0.0%	0.0%
	Sao Tome & Principe	53.7%	46.3%	40.1%	4.8%	1.3%	89.2%	10.8%	9.8%	0.0%	84.5%	0.0%	5.6%
	Senegal	71.3%	28.7%	23.9%	3.3%	1.5%	88.0%	12.0%	24.7%	68.9%	2.4%	4.0%	0.0%
	Sierra Leone	79.1%	20.9%	10.6%	8.3%	2.1%	56.1%	43.9%	30.4%	68.3%	1.3%	0.0%	0.0%
	Swaziland	34.7%	65.3%	29.1%	29.5%	6.6%	49.7%	50.3%	20.3%	9.9%	32.6%	20.1%	17.1%
	Tanzania	51.3%	48.7%	27.6%	14.8%	6.2%	65.1%	34.9%	4.7%	39.3%	36.6%	18.4%	1.0%
	Uganda	55.3%	44.7%	20.8%	22.7%	1.1%	47.8%	52.2%	82.7%	6.4%	10.7%	0.2%	0.0%
	Zambia	59.4%	40.6%	27.6%	10.6%	2.4%	72.2%	27.8%	20.3%	34.2%	38.3%	7.2%	0.0%
	Zimbabwe	22.7%	77.3%	56.8%	17.3%	3.2%	76.6%	23.4%	18.2%	42.8%	18.2%	18.7%	2.1%

Region	Country	Women in need					Women using appropriate services with a classifiable sector		Women using private sector services				
				Selected categories									
		Unmet need for FP	Use of appropriate FP methods	Using public sector	Using private sector	Using unclassifiable sector	Using public sector	Using private sector	Private medical	Private specialised drug seller	Private retailer	FBO	NGO
Middle East / Europe	Albania	86.6%	13.4%	7.1%	5.4%	0.9%	56.7%	43.3%	2.5%	97.3%	0.2%	0.0%	0.0%
	Armenia	61.6%	38.4%	14.3%	23.6%	0.5%	37.7%	62.3%	2.7%	97.1%	0.2%	0.0%	0.0%
	Azerbaijan	80.1%	19.9%	14.3%	5.2%	0.3%	73.2%	26.8%	6.2%	93.0%	0.0%	0.0%	0.9%
	Egypt	19.9%	80.1%	47.7%	32.3%	0.1%	59.6%	40.4%	54.4%	39.7%	0.0%	2.8%	3.1%
	Jordan	42.8%	57.2%	23.9%	32.6%	0.7%	42.4%	57.6%	59.5%	26.4%	0.0%	0.0%	14.1%
	Moldova	45.3%	54.7%	37.5%	15.5%	1.6%	70.7%	29.3%	7.2%	90.4%	2.3%	0.0%	0.0%
	Morocco	30.3%	69.7%	39.3%	29.4%	1.0%	57.2%	42.8%	7.5%	92.5%	0.0%	0.0%	0.0%
	Turkey	47.4%	52.6%	30.4%	21.7%	0.5%	58.3%	41.7%	35.9%	60.0%	3.4%	0.0%	0.8%
	Ukraine	33.6%	66.4%	48.8%	6.6%	11.1%	88.2%	11.8%	15.4%	36.8%	47.8%	0.0%	0.0%
Asia	Bangladesh	30.3%	69.7%	34.5%	33.9%	1.3%	50.4%	49.6%	6.6%	68.5%	10.7%	5.3%	8.8%
	Cambodia	48.4%	51.6%	26.6%	18.3%	6.7%	59.3%	40.7%	45.5%	40.0%	14.4%	0.0%	0.0%
	India	30.0%	70.0%	49.4%	16.9%	3.7%	74.6%	25.4%	64.5%	29.9%	2.4%	0.0%	3.2%
	Indonesia	23.0%	77.0%	17.1%	55.4%	4.5%	23.6%	76.4%	84.0%	12.1%	3.9%	0.0%	0.0%
	Maldives	56.7%	43.3%	27.4%	11.6%	4.4%	70.3%	29.7%	23.2%	73.4%	3.4%	0.0%	0.0%
	Nepal	43.8%	56.2%	38.7%	16.0%	1.4%	70.7%	29.3%	27.1%	42.3%	0.8%	0.0%	29.7%
	Pakistan	60.3%	39.7%	19.1%	16.0%	4.5%	54.4%	45.6%	49.2%	25.2%	25.6%	0.0%	0.0%
	Philippines	54.0%	46.0%	21.3%	24.3%	0.4%	46.7%	53.3%	21.7%	74.9%	3.3%	0.0%	0.2%
	Timor-Leste	61.6%	38.4%	33.9%	4.0%	0.4%	89.4%	10.6%	79.9%	8.9%	4.3%	0.0%	6.9%
	Vietnam	33.4%	66.6%	57.0%	9.0%	0.5%	86.4%	13.6%	34.7%	65.3%	0.0%	0.0%	0.0%
Latin America	Bolivia	57.6%	42.4%	20.7%	20.4%	1.3%	50.4%	49.6%	31.4%	57.2%	0.0%	0.0%	11.4%
	Colombia	16.1%	83.9%	47.1%	34.7%	2.1%	57.5%	42.5%	43.0%	55.1%	2.0%	0.0%	0.0%
	Dominican Republic	17.6%	82.4%	42.2%	36.9%	3.4%	53.4%	46.6%	65.8%	31.7%	2.3%	0.0%	0.2%
	Guyana	40.1%	59.9%	29.1%	23.6%	7.2%	55.2%	44.8%	31.2%	52.6%	14.1%	0.2%	1.8%
	Haiti	54.6%	45.4%	16.6%	23.1%	5.8%	41.9%	58.1%	38.2%	21.2%	13.9%	0.0%	26.7%
	Honduras	22.6%	77.4%	40.2%	31.4%	5.8%	56.2%	43.8%	50.7%	45.0%	3.9%	0.0%	0.3%
	Nicaragua	22.9%	77.1%	49.4%	25.7%	2.0%	65.8%	34.2%	48.9%	36.2%	1.0%	0.0%	13.9%
	Peru	40.7%	59.3%	47.1%	11.3%	1.0%	80.7%	19.3%	44.7%	42.7%	0.7%	0.0%	11.8%