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Kenya: Reaching the Poor through the Private Sector—A Network Model for Expanding Access to Reproductive Health Services

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Our study, carried out in the summer of 2003, measured the effectiveness of a Kenyan program dedicated to increasing the availability of reproductive health services to the poor through training and networking of private medical providers. The Kisumu Medical and Educational Trust (KMET) program focuses on family planning services and encourages providers to add these services to the normal range of consultations, commodity sales, and clinical care they already provide. The study looked at the pool of potential clients of KMET members to evaluate which wealth group benefits from the subsidy given to private providers through the KMET. Analysis of actual KMET clients was used to better understand the program's success in providing quality reproductive health care.

Background

Kenya's population is estimated at 30.7 million, with 80 percent living in rural areas. Total fertility rates for women age 15–49 are 3.12 in urban areas and 5.16 in rural areas, and the contraceptive prevalence rate is 39 percent. The population growth rate is 1.9 percent a year, one of the lowest in Africa. The slow growth is attributable to family planning and to high mortality

from HIV/AIDS (KDHS 1999; UNFPA 2002). Economic disparity is extreme: Nairobi's Kibera district is the largest urban slum in Africa.

According to the Kenyan Ministry of Health, the country has an estimated 27,000 midlevel providers (2,300 clinical officers and 24,600 nurses and nurse-midwives) and 3,300 physicians. The midlevel providers are found at all levels of the health system, in both rural and urban settings, while the doctors are concentrated in the larger towns and cities.

About 48 percent of health care outlets are outside the government structure and are run by for-profit private providers, by religious nonprofit organizations, or by humanitarian nongovernmental organizations (NGOs). Overall, 40 percent of all physicians in Kenya work in the private sector (Hanson and Berman 1998). The private sector is used increasingly for outpatient care, particularly by public sector employees, because of problems within the public sector and increases in National Hospital Insurance Fund (NHIF) rates. Private facilities, both for-profit and nonprofit, dominate certain types of medical institutions; 94 percent of clinics, maternity, and nursing homes and 86 percent of medical centers are private. The number of private health facilities has expanded greatly over the past 10 years, and such growth is expected to continue (World Market Research Centre 2003).

According to National Health Data, in 1997/98, 64 percent of total health care expenditure was private. Of that, 82 percent (53 percent of total expenditure) was out-of-pocket. Against this background, the study reported here looks at the effectiveness of an innovative NGO that supports the delivery of family planning and reproductive health services through private doctors and midlevel medical providers.

The Private Sector and Equity

The past decade has seen a movement toward examining the possible desirability of modifying the government's dual role in health care by separating the finance and delivery activities normal to national health systems. Much of this interest has been driven by a push to explore the potential for increased efficiency in service provision that might be realized by outsourcing some areas of health service delivery and support. Pressure on governments to do more with less in the context of sectorwide reform has led to greater integration of services provided by the public, private, and nonprofit sectors. Governments have begun to concentrate on areas within their core competencies and on the services that they are expected to provide: safety nets for disenfranchised groups, public health interventions, outbreak and disease monitoring, and the setting and enforcement of standards

for provider training, facility quality, and medical inputs such as drugs and equipment.

Governments' growing recognition that the public sector cannot be the only, or even the principal, provider of direct health care for the poor is increasing the dependence on private nonprofit and for-profit health services. The continuing concern about private sector involvement in the provision of essential health care services is that natural market dynamics will lead to a focus on the better off and that services critical for public health will not reach the neediest.

Despite the risk of inequity, there are good reasons for trying to involve private providers in public health service delivery. The primary limitation on effective delivery of services for the poor is lack of infrastructure for close-to-client provision of care. The World Health Organization's Commission on Macroeconomics and Health estimated that globally, more than 23 percent of the cost of scaling up tuberculosis treatments and 25 percent of the cost of scaling up highly active antiretroviral therapy (HAART) treatment will be attributable to infrastructure (Mills and others 2002; Kumaranayake and others 2003). An important reason to consider the potential of private sector projects is their ability to leverage existing infrastructure, personnel, and provider-client relationships. Furthermore, the private sector's responsiveness to market forces and its employment flexibility have the potential to increase service efficiency through more rapid adaptation to changing demand than could be done within a government health system.

The study reported here examines the record of a Kenyan network of private practitioners with respect to reaching the neediest. The network is the Kisumu Medical and Education Trust (KMET), a nonprofit organization started in 1995 to increase access to maternal and child health services in and around the city of Kisumu in western Kenya. High rates of maternal mortality were being experienced in local hospitals, with mothers arriving after poor, nonexistent, or drastically delayed local care. The goal of the KMET network is to increase the accessibility of reproductive health and family planning services for the poor, using private providers to establish new, easily accessible service delivery points.

Providers joining the KMET are trained, supplied, and supported so that they can provide services they would not have offered prior to membership. By grouping private, for-profit health providers into a network with NGOs and the public sector, the KMET furnishes responsive training and support to many service delivery points that are theoretically accessible to the poor. Enrolled medical providers, limited to one per site, become part of the KMET network. Participating providers are required to meet specified facil-

ity standards. In exchange they receive free training, a free initial manual vacuum aspiration kit for early abortions and postabortion care, regular delivery of contraceptive commodities to their clinic, and a limited number of low-interest one-year loans. Network members also have access to yearly medical updates and networking events.

The KMET began by training both government and private sector doctors and consultants in safe abortion practices and postabortion care. The training program quickly grew to include midwives, clinical officers, and nurse practitioners. Since 2001, all new providers have come from these midlevel provider cadres. The total number of providers is 204, in five provinces. Of these, 65 are exclusively private, and 139 work at least part-time in missions or the public sector. Nurses and clinical officers make up about-two thirds of the KMET members, and physicians account for a third.

Research Questions and Study Design

Our research question, based on the goals set by the KMET network, is whether KMET provider programs for family planning access are benefiting the poor in Kenya. If they are, can the KMET model be replicated or expanded to promote equity and increase access to basic reproductive health services at affordable prices for the poorest segments of the Kenyan population? We attempt to answer these questions by examining the socio-economic status of KMET providers' current and potential clients.

To provide the data needed for this purpose, we conducted a survey of KMET clients that was implemented by Steadman Research Incorporated, a private survey research group based in Nairobi, in May 2003. The survey had three major components: a provider survey, client exit interviews, and a household survey. The provider survey included both KMET members and matched nonmembers. Client exit interviews were conducted with clients of both members and nonmembers.

The Sample

From the KMET member roster of 204 providers, a systematic sample was drawn by selecting every second medical practitioner on the list. For each selected provider, exit interviews were conducted with three female clients: the first female client of the day; the first arriving after noon; and the first arriving after 5 PM. If no patients arrived after 5 PM, no replacement exit interviews were conducted.

To allow comparison of KMET member and nonmember services and types of client, all nonmember medical service providers located within 2

kilometers (in urban areas) or 5 kilometers (in rural areas) of every second network member in the sample were counted and numbered, starting from a randomly selected network provider.¹ From the nonmember providers at each locale, one was randomly selected for interview, yielding a total of 50—roughly, a 2:1 ratio of members to nonmembers. When possible, selected nonmember providers were matched with member providers according to their level of training. Where equivalence was not possible, nonmembers were selected from the next lower level of training. As with network members, three exit interviews with female clients were conducted, with the same limitation on third interviews as at the member sites. Table 5.1 shows types of provider by network membership status.

To explore the characteristics of potential clients, 500 household interviews with women of reproductive age were conducted. Households were randomly selected within 2 kilometers of each network provider. Given the challenges of counting every household within that radius for the subsequent random selection, we used the Expanded Programme on Immunization (EPI) quasi-probability sampling methodology. This approach enabled us to reduce costs by avoiding the creation of a sampling frame. Under the EPI method the geographic central point of the primary sampling unit (PSU) is first located on a map; this is the starting point for the selection of households. A random direction from the starting point is then chosen, using a spinning object such as a bottle.

For our study, we introduced a slight variation. From the selected provider location (the starting point), the interviewer walked about 5 min-

Table 5.1. *Types of Health Care Provider Covered in Study (Percentage of respondents in each category)*

<i>Type of provider</i>	<i>KMET member (N = 102)</i>	<i>Nonmember (N = 50)</i>
Specialist (obstetrics/gynecology or other)	13	12
Doctor	17	14
Nurse	36	40
Nurse-midwife	17	4
Clinical officer	14	28
Pharmacist	0	2
Other	4	0
Total	100	100

Source: Provider survey.

utes in the direction of a specific cardinal point (for example, north). Having done this, the interviewer spun the bottle to point out the direction of the household to be interviewed. From the household thus identified, one woman of reproductive age was randomly selected for interview from the household roster, which listed all eligible women. For each sampling point, five household interviews were conducted, one or two in each cardinal direction. Supervisors made random checks biweekly during the survey process to verify the implementation of household and interviewee selection.

In all, 101 member providers and 50 nonmember providers were interviewed.² At four member sites, only two interviews were held, and at two member sites, only one interview. In all, 295 exit interviews were conducted with clients of members. Among the nonmember sites selected, at one site only two interviews were conducted, at one site only one interview was conducted, and at three sites no interviews were conducted, at the request of the provider. The total number of interviews with nonmember clients was 138. The household interviews numbered 500.³

Determination of Socioeconomic Status

Socioeconomic status was determined for all respondents by using the asset and factor score methodology that had earlier been applied to the 1998 Kenya Democratic and Health Survey, or DHS (Gwatkin and others 2000). Asset ownership was determined through client and household reporting. Table 5.2 gives summary statistics on ownership of assets among clients in the survey, community households in the survey, and the overall population of Kenya.⁴ For each respondent, asset factor scores from the 1998 Kenya DHS were applied to the reported assets owned and were summed to yield a total asset score. Individuals were assigned to wealth quintiles using cutoff points based on the 1998 DHS (Gwatkin and others 2000). Wealth data were supplemented by client and household survey data on educational attainment.

Data Analysis

Socioeconomic status among respondents was compared using the *t*-test for comparison of two proportions. Statistical significance is reported for *p*-values less than 5 percent.

Logistic regression analysis was used to test for association between socioeconomic status and the choice of a KMET member provider. For the model, we constructed dummy variables for socioeconomic status. The model also controls for urban or rural residence, age, parity, and education.

Table 5.2. Household Assets of Population Groups Covered in Study (Percentage of respondents in each category)

<i>Asset category</i>	<i>Clients of members (N = 295)</i>	<i>Clients of nonmembers (N = 138)</i>	<i>Households (N = 500)</i>	<i>Kenya average (DHS 1998)</i>
Has electricity	31.6	23.1	45.8	11.7
Has radio	36.2	36.6	93.8	66.4
Has bicycle	11.6	10.1	36.2	28.3
Has car	10.9	8.8	7.2	5.0
Has telephone	42.8	48.4	21.6	2.7
Has piped water in residence	24.6	16.6	31.8	19.5
Uses piped water from public tap	25.4	29.5	40.4	9.4
Uses drinking water from inside well	18.1	17.6	8.2	8.0
Uses water from public well	9.4	6.4	4.2	12.7
Uses river or surface water	22.4	30.2	14.2	42.5
Uses own flush toilet	20.3	19.0	18.8	6.6
Uses shared flush toilet	2.2	6.4	3.2	3.2
Uses pit latrine	77.5	72.9	77.2	67.6
Uses bush or field as latrine	0.7	2.0	0.4	15.9
Has roof of natural material	11.8	8.2	2.8	29.6
Has roof of corrugated iron	79.7	80.0	89.6	66.4
Has roof of ceramic tile	5.4	9.4	5.6	2.9

Source: Household and exit interview surveys; Kenya Demographic and Health Survey (DHS), 1998.

Findings

We have studied use of two types of service. The first is the overall set of services available from the different types of provider covered. The second is that set of services dealing with reproductive health, which constitutes the focus of the KMET network.

Overall Service Use

Table 5.3 presents selected characteristics of household respondents and clients according to provider. The clients of member-providers are similar in many demographic and health characteristics to the clients of nonmember providers and to the populations of the communities. This is not surprising, since the clients of both member and nonmember providers are drawn from the same nearby community.⁵

Regarding educational attainment, member providers and nonmember providers in rural areas both cater to populations slightly less educated than in the surrounding communities. In urban areas both cater to slightly more educated populations than in the surrounding communities (table 5.4).

Figure 5.1 shows all household respondents by national wealth quintile. Two features are noteworthy:

- The pattern of wealth in the areas where the KMET providers are located appears considerably more polarized than in Kenya as a whole. Sixty-one percent of the total sample is in the highest quintile

Table 5.3. *Characteristics of Clients and Household Respondents Covered in Study (Percentage of respondents in each category unless otherwise specified)*

<i>Characteristic</i>	<i>Clients of members (N = 295)</i>	<i>Clients of nonmembers (N = 138)</i>	<i>Households (N = 500)</i>
Age (years)	28.5	28.7	29.0
Visited site before today for family planning	41	28	23 ^a
Ever visited other site for family planning	34	49	64 ^b
Currently using family planning	52	45	57
Currently using family planning (married respondents only)	53	56	57
Believe abortion services are easily available	21	18	18
Aware that current provider offers abortion services	11	7	n.a.

Source: Household and exit interview surveys.

a. Ever visited reference KMET site for family planning.

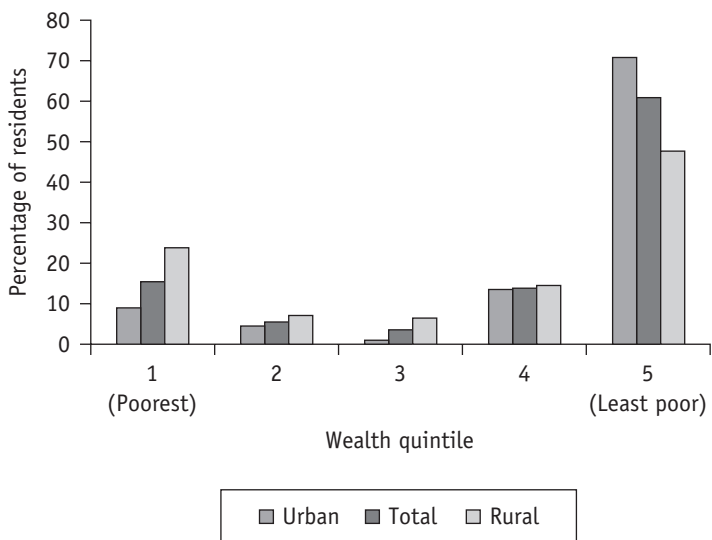
b. Ever visited any non-KMET site for family planning.

Table 5.4. Educational Attainment among Clients and Households Covered in Study (percent)

<i>Educational level</i>	<i>Rural</i>				<i>Urban</i>			
	<i>Clients of members (N = 179)</i>	<i>Clients of nonmembers (N = 66)</i>	<i>Households (N = 212)</i>	<i>National average</i>	<i>Clients of members (N = 116)</i>	<i>Clients of nonmembers (N = 72)</i>	<i>Households (N = 288)</i>	<i>National average</i>
No formal education	3	5	1	2	1	0	3	1
Some primary	27	18	26	26	3	7	13	10
Primary completed	41	51	37	41	32	30	32	31
Secondary completed	22	17	23	22	25	44	38	35
Technical/vocational	6	9	12	9	33	14	13	18
University and beyond	0	0	0	0	5	6	2	4
Total	100	100	100	100	100	100	100	100

Sources: Household and exit interview surveys for clients and households; Kenya Demographic and Health Survey (DHS), 1998 for national averages.

Figure 5.1. Distribution of Residents of Areas Where KMET Members Are Located, by Wealth Quintile



Source: Authors' calculations.

of the national population and 16 percent is in the lowest quintile. Very few respondents are in the middle three quintiles.

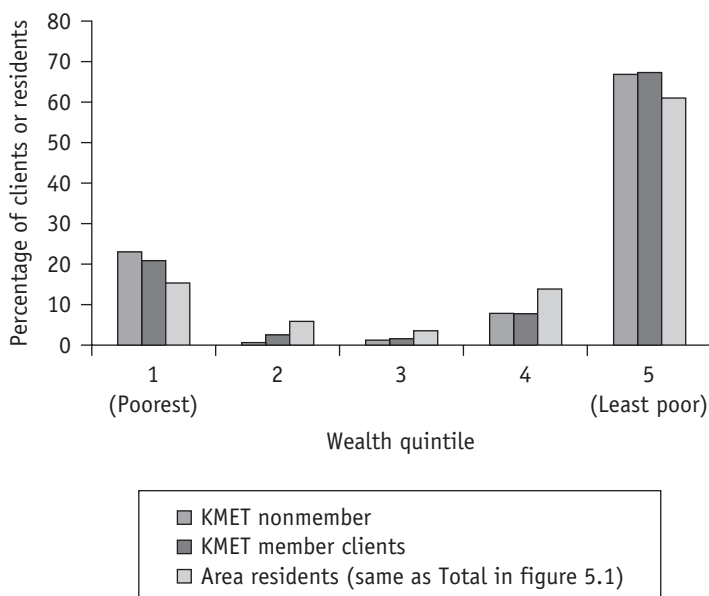
- Unsurprisingly, the respondents in the poorest quintile are predominantly rural and the least poor quintile is mainly urban.

Clients of both KMET members and nonmembers have similar wealth profiles. In both groups clients are skewed toward the low- and high-income quintiles, reflecting the household populations from which the clients come (figure 5.2). We found no statistically significant difference between the proportions of poorest-quintile clients going to members and nonmembers ($p < 0.5$). In brief, nonmember and member providers in both urban and rural areas serve clients who are broadly reflective of the communities where the providers practice.

Use of Reproductive Health Services

Overall, the percentage of clients who reported visiting KMET for reproductive health reasons (39 percent) does not differ significantly from the share for the nonmember providers (32 percent).⁶ Although KMET members see a higher proportion of family planning and reproductive health (FP/RH)

Figure 5.2. Distribution of KMET Member and Nonmember Clients, by Wealth Quintile



Source: Authors' calculations.

clients than do nonmember providers, the difference is not statistically significant after adjusting for wealth ($p < 0.25$).

Table 5.5 presents results from the multiple logistic regression analysis of household respondents who have ever visited a provider for FP/RH services. It indicates that household respondents who have used KMET providers for these services were more likely to be rural (odds ratio = 1.7; $p < 0.03$) and less educated (odds ratio for completing secondary school = 0.4; $p < 0.00$) than FP/RH users who had sought services from non-KMET providers. On other aspects—wealth, age, and parity—there is very little difference between household respondents who visit member providers and those who visit nonmember providers.

Limitations

This study suffers from a number of significant limitations. Most important, it uses cross-sectional data to examine correlation of socioeconomic status with the activities of an NGO. That being so, only correlations can be calcu-

Table 5.5. Odds Ratios: Household Respondents Ever Having Visited KMET and Other Providers for Family Planning and Reproductive Health (FP/RH) Services
(Dependent variable: report ever having visited KMET provider for FP/RH services)

<i>Independent variables</i>	<i>Odds ratio</i>	<i>Robust se</i>	<i>p > z </i>
<i>Economic group (quintile)</i>			
1 (poorest)	Reference category		
2	1.228	0.741	0.734
3	0.734	0.555	0.683
4	2.055	0.972	0.128
5 (least poor)	1.988	0.770	0.076
<i>Residence</i>			
Urban	Reference category		
Rural	1.714	0.427	0.030
<i>Age group (years)</i>			
≤24	Reference category		
25–29	1.128	0.361	0.706
30–34	1.369	0.507	0.396
35+	1.197	0.538	0.688
<i>Parity</i>			
<2	Reference category		
3–4	0.760	0.244	0.392
5+	0.508	0.250	0.168
<i>Education</i>			
None/some primary	Reference category		
Primary complete	0.543	0.213	0.120
Some secondary	0.684	0.263	0.323
Secondary complete	0.415	0.149	0.014
Vocational	0.186	0.090	0.000
University	0.406	0.367	0.318
–2 log likelihood	216.300		
Number of observations	361		

Source: Household and exit interviews.

lated, and causality cannot be established. The measure of wealth—assets weighted according to eigen values calculated from national DHS data—is a measure of convenience, chosen to allow the broadest comparison of clients with national data. We use it while recognizing its limitations: asset ownership is not a true value of actual wealth or poverty, both of which are highly dependent on income flows and consumption.

The definitions of rural and urban followed local political usage, as was the case for the DHS, but the variation among rural areas in particular is much broader in national surveys than in the sample of sites. This difference stems naturally from the locations in which private medical practices are likely to exist—locales with sufficient population density and income level to provide a clientele. The result is to bias the sample sites toward a subset of rural populations wealthier than the national cross-section.

Clients and households were interviewed according to a set schedule, in our attempt to select a wide range of clients. It is possible, however, that a different group of clients visits the clinics only in the evenings, when many of the targeted clinics are open, and these clients would have been excluded from our sample.

As with respondent reporting of income, some asset ownership variables were likely to have been altered as a result of response bias. Selection bias may have been a factor as well. Twenty percent of our sampled providers had to be replaced, and 14 providers could not be found. Clients of the missing providers may have had different characteristics from those of the other selected providers.

Implications

In rural areas the average clients of both KMET providers and nonmember providers are somewhat poorer than the households in the nearby community. Both groups of providers serve a similar proportion of clients in the lowest socioeconomic stratum.

Because the KMET clients reflect an undifferentiated cross-section of socioeconomic status from the catchment area in which the clinics are located, defined here by the households surveyed, the success or failure of the KMET network to continue reaching the poor is likely to be determined primarily by the network's ability to identify and enroll more providers in rural settings. Our findings indicate that the KMET has succeeded so far in reaching rural clients, but we cannot draw a conclusion about whether this is attributable to provider differentiation or to program emphasis on rural placement.

The client and household surveys indicate that there are large differences between the better-off and the poor in the areas studied. The goal of KMET, then, must be to focus on the poor end of this dichotomous client population. The recent shift in enrollment priorities to midlevel providers is an important first step toward this goal because few doctors practice outside urban areas. Our research suggests that this shift in focus should be accelerated and that the KMET organization should place increasing emphasis on rural towns.

Concern about a potential decrease in equity associated with a shift in focus from public to private sector health services may be mitigated by the design of the KMET network. If the KMET continues to expand in rural areas using midlevel providers as planned, equity in access to care may be enhanced by increased availability of services equivalent to those already available in cities and larger towns. Our research does not provide strong evidence that this is now occurring, but it does support the contention that such a shift is likely.

Our central research question—does the KMET benefit the poor?—was answered positively but weakly. From our analysis, we can say that the KMET private provider program is “nondiscriminatory” with respect to the wealth of clients benefiting from improved access to FP/RH services in the communities where the clients live. Thus, the poor benefit as part of overall gains equally shared across all wealth quintiles. There is no evidence of a pro-nonpoor bias stemming from use of private providers in this program, but there is evidence that further efforts are necessary to target programmatic investments to the more needy and marginalized.

We take these results as an indication that empowering the private, for-profit health sector in rural settings may provide an opportunity for government to expand health care without the high infrastructure costs implied by direct government provision of care. This potential should continue to be evaluated, and programs that work through private for-profit providers should be considered for integration into national health planning when their missions are aligned with public health goals.

Notes

1. We limited ourselves to matching every second member provider because of budget constraints, and we accepted the limitation because nonmember providers constitute a comparison group rather than the primary focus of the study.
2. Twenty of the providers were replacements for providers not located, dead, or no longer associated with the KMET. One provider refused to participate.

3. Survey instruments were based on private provider instruments used in other settings by the authors, with an additional asset survey section designed to match the questions on the 1998 Kenya Demographic and Health Survey (DHS). Anonymity was guaranteed to all respondents; provider names were coded, and the codes were held by the researchers. Client and household respondent names were not requested. Participation by respondents was voluntary. A small number of providers refused to participate, but the refusal rate for clients and household women was close to zero. This low rate was partially attributable to the careful selection of interviewers; in each region of Kenya, interviewers were selected on the basis of their match with the locally predominant tribal groups. No incentives were offered to any group for participation.

Data entry was carried out electronically using a scanning system and software in the Steadman Research offices in Nairobi, with 15 percent human entry verification. Because the instrument formats were standardized, language confusion was irrelevant for scanning entry. Data coding and cleaning were initially done in Nairobi using FoxPro software. All data were electronically transferred to the University of California at Berkeley for further cleaning and analysis using statistical software Stata Release 7.

4. Questions about livestock ownership were asked as well, for matching to an earlier World Bank study, but these are not used here because they are not among the asset measures used by the DHS.

5. Household respondents were exclusively married women. No marriage entry screen was used in client exit interviews. When limited to married respondents only, there is no statistical difference ($p = 0.277$) in the percentage of respondents at different locations who report current use of family planning. The married-women-only rates for use of family planning in member exit interviews, nonmember exit interviews, and households are 56, 53, and 57 percent, respectively.

6. Reproductive health includes family planning, abortion, antenatal care, and treatment of sexually transmitted infections.

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