HIV services delivery and overall quality of care and satisfaction in Burkina Faso: are there privileged patients?

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Abstract

Background: In Burkina Faso, the number of HIV-positive persons under antiretroviral treatment (ART) quintupled from 2004 to 2007. The effect of the provision of ART and other medical services related to HIV on the quality of care and satisfaction of all, HIV and non-HIV patients is debated, but the evidence is limited.

Methods: 43 health facilities delivering ART or about to do so were surveyed in 2006. In each facility, the manager and health providers were surveyed, one provider at least selected from the HIV/AIDS department; 10 randomly selected outpatients including 5 from the HIV/AIDS

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services were interviewed. Healthcare quality was assessed by patients' self-reported satisfaction and a quality index assessing the quality of healthcare practices. Upfront costs and waiting time were evaluated from patients' report. We performed health facility fixed effects multivariate regressions of healthcare quality, upfront costs and waiting time. We focused on patients' wealth and whether the purpose of the visit was related to HIV/AIDS.

Results: Consulting for HIV-related services, while not more costly to patients significantly increases the quality of care received but also increases substantially the time spent waiting for this upgraded service. The wealth of patients does not affect care quality, but helps in reducing waiting time, in particular for HIV patients.

Conclusion: Our finding that patients visiting for HIV services receive on average better quality than others does not imply that HIV services have had a negative impact on other health services, but further investigation using panel data should be conducted to investigate this question. However, we can conclude that it would be desirable for the quality of care in other services to reach at least the level attained in HIV services and the upfront costs to be reduced.

Keywords: HIV/AIDS, quality of care, patient satisfaction, antiretroviral treatment, costs of care, subsidies, access to care.

Key messages

- Consulting for HIV-related services, while not more costly to patients significantly increases the quality of care received but also increases substantially the time spent waiting for this upgraded service. The wealth of patients does not affect care quality, but helps in reducing waiting time, in particular for HIV patients.

- Our finding that patients visiting for HIV services receive on average better quality than others does not imply that HIV services have had a negative impact on other health services, but further investigation using panel data should be conducted to investigate this question. However, we can conclude that it would be desirable for the quality of care in other services to reach at least the level attained in HIV services and the upfront costs to be reduced.

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Introduction

HIV/AIDS remains a major public health problem in Sub Saharan Africa. The last UNAIDS estimates reported 33 million [30-36 million] people living with HIV in 2007 in the world. Two thirds (67%) of them were living in Sub Saharan Africa (UNAIDS 2008). Initially, antiretroviral treatment (ART) was only available for few patients in few health facilities located mainly in urban areas. With the support of governments, associations of persons living with HIV/AIDS (PLWHA), multilateral, bilateral and private donors, the number of PLWHA who have access to ART has increased dramatically since 2003. As of December 2007, an estimated 3 million people in low- and middle-income countries were receiving antiretroviral drugs. They represented 31% of those needing the medications, and benefited from a 45% increase in the number of beneficiaries over 2006 (UNAIDS 2008). In Burkina Faso, the number of PLWHA was 130 000 persons (110 000-160 000) at the end of 2007 (UNAIDS/WHO/UNICEF 2008), 48 000 of whom were estimated to need antiretroviral treatment. The number of PLWHA under treatment increased from 3000 in 2004 to 17000 in 2007, concomitant with an increase in the number of facilities delivering ART, from 44 in 2005 to 76 at the end of 2007 (UNAIDS/WHO/UNICEF 2008).

Health services in Africa were not prepared to confront the HIV/AIDS epidemic. HIV infection occurs in a general context of health system crisis and underutilization of health services. The 1987 Bamako initiative for primary healthcare aimed at strengthening the geographical, financial and cultural accessibility of care by the population. However, most of the studies conducted in the continent show that access to care and the performance of health facilities remain low (Baltussen and Ye 2006, Mapunjo and Urassa 2007, O'Donnell 2007, Zere, Moeti, et al. 2007, Das, Hammer, et al. 2008, Fowler, Adhikari, et al. 2008).

There are many challenges in successfully scaling-up ART, ensuring access to care and reorienting service delivery towards chronic disease care. In many studies, insufficient healthcare human resources is often cited as the most important obstacle to an adequate access to care and a successful treatment scale-up (Chen and Hanvoravongchai 2005, Marchal, De Brouwere, et al. 2005, Schneider, Blaauw, et al. 2006, Das and Hammer 2007, Das and Sohnesen 2007, Wouters, Heunis, et al. 2008). Weak and overloaded health systems threaten the quality of care and patient satisfaction levels, which can, in turn, seriously lessen the chances of successfully confronting AIDS (Wouters, Heunis, et al. 2008).

In the past decade, patient satisfaction has become an important performance measure and outcome of healthcare (Woodcock and Bradley 2001, Quintana, Gonzalez, et al. 2006, Moret, Nguyen, et al. 2007). Quality of care and the resulting patient satisfaction influence care seeking behavior and determine the demand for health services. If patients are dissatisfied with the quality of care they receive, they may not adhere to treatment regimen, or they may fail to attend follow-up visits (Wouters, Heunis, et al. 2008, Mesfin, Newell, et al. 2009). For patients suffering from HIV/AIDS in particular (as well as other diseases like tuberculosis), adherence to regimen and strict follow up schedules play a central role in treatment success. Therefore, the quality of care and patient satisfaction underpin the success of public health policies in enhancing access to care, especially for policies targeted at promoting access to ART.

To our knowledge, only few studies have explored the effect of the delivery of ART and HIV-related services on the quality of care and patient satisfaction from all patients, including those who do not benefit from HIV-related services. Yet, improving overall satisfaction with the quality of care received is part of the policy targeting universal access to care. Assessing if the delivery of ART and HIV-related services has an impact on satisfaction from all patients matters; improving access to ART should not only improve access to care from HIV-positive

individuals, but also, given the amount of resources allocated to AIDS policies, guarantee the satisfaction and access to care of other patients is at least maintained or improved.

Our study assesses the satisfaction with the care received in a sample of health facilities delivering ART in Burkina Faso. We use exit patients interview to collect information on both patients' self reported satisfaction and on a set of 17 questions related quality index characterizing medical staff practices[7]. We use the answers to these questions questions to construct a health care quality index from the patient perspective. By asking more detailed questions, this approach offer more variations in exit patients' perception on health care quality than single questions on satisfaction[8]. Indeed, exit patient interviews have been widely used in both developed and developing countries as a measure of health care quality (e.g. Flocke, 1997; Masive et al, 2010; Pbert et al, 1999; Peabody et al, 2010; Safran et al, 2004)[9]. Simple correlations indicate that self reported satisfaction levels are highly correlated with the quality index. Consequently, we will focus our analysis on the quality index. We use multivariate regressions to explore the determinants of the quality of care, with a focus on patient's wealth and the purpose of the visit. Specifically, whether the visit was HIV related or not.

Comment [HK1]: From our discussions, it seems that all these facilities are already delivering ART—(need to be confirmed)

Methods

Sampling and survey

[7] The questions are listed in table 1a, and have been chosen to be consistent with the basic guidelines of the national health system.

[8] Note that the concept of quality index is different from that of the vignette score since the former focuses on exit patients, and in the latter, the questions are directly asked to health care providers (e.g. (Baltussen and Ye 2006, Das and Gertler 2007, Das and Hammer 2007, Das, Hammer, et al. 2008, Wouters, Heunis, et al. 2008).

[9] These simple correlations are available from the authors upon request.

The sample was drawn to be representative of health facilities offering ART in Burkina Faso as of July 2006. All health facilities (35) with at least 100 registered HIV/AIDS patients were included in the sampling process. We added health facilities that were scheduled to provide ART services in the near future. In total, the study comprises 43 health facilities, including 32 public health facilities, 10 run by associations of PLWHA or NGO's of which 3 were faith-based, and 1 private clinic. In the analysis, we regroup health facilities in four categories: (1) public reference hospitals, including the Centres Hospitaliers Universitaires (CHU) and the Centres Hospitaliers Régionaux (CHR); (2) public local health facilities, including the Centres Médicaux avec Antenne Chirurgicale (CMA) and the Centre médicaux (CM); (3) associations and non-governmental organizations including facilities run by associations of PLWHA and faith-based organizations and (4) private-for-profit clinic. In each health facility, the manager and health providers were surveyed, with at least one health provider selected from the HIV/AIDS department.

In addition, 10 randomly selected outpatients (5 from the HIV/AIDS services, and 5 from other services) present on the day of the survey were interviewed in each selected health facility. Informed consent was obtained from every interviewee prior to the interview. For outpatients, the survey covered basic socio-demographic and socio-economic data, the service used during the visit, direct and indirect costs associated with the visit, and the satisfaction level with the service used. In addition, exit patients were asked 17 questions about the medical procedures performed during their visit. Table 1a includes the list of questions.

The score obtained to each question, i.e. one if the procedure was performed or zero if not, has been assigned the same weight of 1/17 to normalize the vignette between zero and one, zero indicating the poorest quality of care and one indicating the highest. We classified a patient as visiting for HIV-related services if he/she declared to be at the health facility for a follow up on the evolution of HIV/AIDS and/or adherence to ART, or if he/she mentioned counseling and

voluntary testing as the purpose of the visit. Therefore, our analysis concerns the impact of HIV-related services delivery. We do not focus on HIV-positive patients, since not all the patients visiting for these services were HIV-positive, but on the type of service delivered.

Data analysis

We first provide descriptive statistics of the characteristics of the health services and the patients interviewed, distinguishing between patients coming for HIV/AIDS services and those coming for other services. In a second step, we use multivariate regression analysis to explore care quality as assessed by the vignette score, the determinants of upfront costs paid by patients, and time spent at the health facility. We are interested in the role of patient wealth and whether the consultation is related to HIV/AIDS. We control for patients' socio-demographic variables. We use ordinary least squares (OLS) estimations as well as health facilities fixed effects to control for the characteristics of health facilities. The latter is our preferred specification as it allows removing effects idiosyncratic to each facility, but we also present the simple ordinary-least-squares specification for the sake of completeness. We also use an HIV/AIDS indicator and interaction terms to explore the impact of consulting for HIV/AIDS on healthcare services.

We define upfront fees as any fees (legal or not) paid by the patient at the health facility before being received by a health professional. Thus, our definition excludes both prescription and exam costs. Other external costs born by the patient like transportation costs are also excluded. Our wealth indicator is calculated based on a principal component analysis of fourteen variables. The latter assess housing quality, access to water and electricity, and assets such as livestock, agricultural tools, household appliances, communication devices and vehicles. The wealth index is normalized between 0 representing the lowest level of wealth and 1 indicating the highest level.

The data was double-entered by two different agents using EpiData (Epidata Association) and the statistical analysis was conducted using STATA 10 (StataCorp LP). The survey was approved by the Ethical Committee for Health Research in Burkina Faso.

Results and discussion

Our sample was composed of 346 patients in 43 health facilities. 61.3% of the respondents were women (table 2). 51.5% of the patients were consulting for HIV-related services, with a higher proportion of women consulting for HIV/AIDS (59.4%). Divorced or widowed patients were also significantly consulting for HIV/AIDS more than for other purposes, whereas no HIV-related visits were significantly more reported by single or married patients. The mean age of respondents was 35 years old. Most of the health facilities of our sample were located in urban areas (42 out of 43) and public (33 out of 43). The average number of patients under ART was 251 (standard error 70.28).

Figures 1 shows the quality of care measured using the quality index by type of health facility. Facilities run by associations or NGOs have the lowest quality of care, and the private health facilities have the highest quality index (P-value=0.001). We examine how responses to each element of the exit interview (used to determine the quality index) varyby gender of the patient and by whether the patient visited for HIV/AIDS services or not in table 1. From the bivariate analysis, it appears that patients visiting for HIV-related services were more likely to have been asked about important elements of their medical condition or history (table 1). However, most of the other types of visits were classified as ‘adult care’ (164 consultations over 346), which may or may not require as many investigations on the patient’s condition and medical history. We do not have a sufficient level of detail about the consultation purposes to

assess whether the difference between patients visiting for HIV versus non-HIV services was still significant for the consultations needing such medical history only. In addition to a difference in the vignette evaluation of healthcare quality, patients visiting for HIV-related services also reported to be more satisfied about the services received, with the exception of waiting time (table 1).

Our estimation results are presented in tables 3 to 6. All regressions shown control for health facility fixed effects. Hence, the implied question of our analysis is whether within the same health facility HIV/AIDS patients receive higher quality health care, on average. Our focus is, therefore, on how resources are allocated within the same health facility between HIV/AIDS services and other services[10].

Table 3 presents estimates of healthcare quality, table 4 estimates of upfront costs and table 5 estimates of waiting time. In the first and second columns of each table, as well as in table 3 columns 5-6, the estimation does not distinguish the purposes of the visit between HIV-related visits and other visits. In the other columns, we include an HIV/AIDS indicator and interaction terms to explore the impact of consulting for HIV/AIDS on healthcare services. The odd numbered columns present the OLS regressions. The even numbered columns report the estimations including health-facility fixed effects. In all these tables, for the sake of completeness, we report estimation results without and with health facility fixed effects again, although the fixed effects regressions remain our preferred specifications.

In table 3, columns 1, we regress healthcare quality using the quality index on wealth and the control variables. Then in columns 2, we include a dummy indicating if the consultation is related to HIV/AIDS, and its interaction with wealth. We want to test if the quality of care

[10] A related question that we do not address is whether health facilities which offer HIV/AIDS treatment offer better treatment to HIV/AIDS patients. To the extent that HIV/AIDS treatment is associated with the facility equipment level, this would be a question about resource allocation at the health sector level, and beyond the scope of this paper.

varies between patients visiting for services related to HIV/AIDS and those visiting for other purposes, as well as measure whether wealth plays a role in this relation. In column 1, the estimated coefficient of the normalized wealth index is negative and statistically significant at the 10 percent level, indicating that within the same health facility, wealth influences negatively the quality of care received. In columns 2 and, we introduce the HIV-related consultation dummy in interaction with the wealth variable. The coefficient of the wealth index is not significant anymore. However, the coefficient on HIV-related services is, and in our preferred fixed-effect specification it is positive and significant at the 1% confidence level. Patients visiting for HIV-related services appear to receive care of better quality as measured by our vignette. Compared to column 1, the introduction of the HIV-related dummy and its interaction with wealth causes the wealth variable to be insignificant and its coefficient to be smaller in absolute value. When taking into account whether the consultation is related to HIV/AIDS, the previously observed negative effect of wealth on healthcare quality disappears. Such a result could be explained if, on the one hand, HIV-related services were generally of higher quality – which is shown by our analysis and, on the other hand, HIV patients tended to be less wealthy. Table 2 indicates that indeed patients visiting for HIV services are slightly less wealthy, but that difference is not significant.

To provide further evidence on the link between wealth and care quality, we look directly at the relation between upfront costs and care quality in table 3, columns 34. These results must be interpreted with caution since upfront fees are endogenous[11]. For instance, patients desiring better quality may be willing to pay more; in this case there is a reverse causality. Alternatively both quality and upfront fees may result from a bargaining process between the patient and the

[11] Ideally, one would instrument for costs, but we do not have access to valid instruments. Note that, it could be tempting to use distance traveled. Distance travelled, however, would be a good instrument if we were dealing with all costs to get to the health facility, especially including opportunity costs. But we are concerned only with explicit costs (excluding transportation and prescription costs). It would be hard to justify why distance travelled would be correlated let say, with consulting fees. We choose to keep costs as endogenous and interpret our results as correlations and not causal.

provider, thus suggesting a simultaneity bias. Without controlling for whether the services were related to HIV (column 3), the results suggest that upfront costs are negatively associated with healthcare quality, but not statistically significant. However the coefficient is close to zero. When considering whether the consultation is HIV-related, the results from the preferred fixed effects specification (column 4) are indicative of the absence of correlation between upfront fees and care quality. Furthermore, the introduction of the HIV-related dummy yields the same results as before: requiring HIV-related services is strongly associated with an increase in the quality of care received.

Overall, the regression results reported in table 3 suggest that healthcare quality is higher for patients visiting for HIV-related consultations than for other patients: on average, visiting a facility for HIV-related services increases the healthcare quality 0 to 1 score of about .17 units. We stress however that in a cross-sectional study like ours the finding that patients visiting for HIV services receive on average better quality than others does not imply that HIV services have had a negative impact on other health services. Our finding is consistent with the quality of other services increasing, remaining stable or declining with the introduction of HIV services. Only an analysis of a panel of health facilities before and after the introduction of ARV services would potentially allow concluding on the question of the overall impact of the introduction of HIV services on the quality of other type of medical care.

A potential concern is that the quality index may not be directly comparable across HIV and non-HIV patients. Presumably, a doctor who is interacting with a patient who has already been diagnosed to have HIV should (and will) ask a different set of questions relative to one faced with a patient with an unknown illness[12]. As a robustness check, we separate the questions

[12] For instance, it makes sense to ask an HIV patient about "blood in the sputum" to check for opportunistic TB infection, but it makes no sense to ask this of a patient who has come in with (say) a headache. Therefore, it is not at all surprising that this question is asked more from HIV relative to non-HIV patients.

which should be asked regardless of the condition of the patient from those questions that are more HIV/AIDS specific, under the health protocol in Burkina Faso.

Comment [HK2]: Seni and Laetitia, we need some references here if possible.

Based on the national health protocol in Burkina Faso questions 1, 2, 10, 11, 12, 13, 14, 15 and 16 in table 1 should be asked to any patient, regardless of his or her condition. On the other hand, questions 8 and 9 are systematically asked to patients coming to the health facility for HIV/AIDS related reasons. We calculate two different care quality indices based on these sets of questions.

The regressions results using these different indices are reported in tables 4a (for the HIV/AIDS specific questions) and 4b (for the standard questions). The estimated coefficients in table 4a and 4b support qualitatively the findings reported in table 3 that the care quality index is higher for HIV/AIDS patients. It is apparent that HIV/AIDS patients have on average a higher care quality index, whether the quality index is uses only the questions that are asked to each patient, regardless of his or her condition (table 4b) or questions that are specific to HIV/AIDS patients (4a). Hence, the results shown in table 3 are not driven by the fact that HIV/AIDS patients may be systematically asked more questions than or different questions from other patients.

A relevant question is whether patients visiting HIV-related services pay a premium for the extra quality of care they receive. If health facilities are charging these patients more in return to care quality, this might exclude relatively poor patients desiring to receive HIV-related services from access to good healthcare. We investigate this question formally by regressing upfront fees on the HIV/AIDS variable, wealth and the control variables. The results are reported in table 5. Regardless of the purpose of the visit, column 1 indicates wealthier patients pay significantly more than other patients. If we introduce the distinction between HIV-related and other visits, the estimated coefficient in column (2) still indicates that wealthier patients pay relatively more, and the value of the coefficient is higher. However, the coefficient on the

interaction between wealth and HIV-related services is significant and negative, and roughly compensates the positive coefficient of the wealth index. Overall, this indicates that wealthier patients pay more upfront fees, but that this is not true for HIV-related services.

Up to this point, our results show that patients requiring HIV-related services receive better care on average, but they do not pay a premium. This reflects the fact that HIV services is strongly subsidized by the government in Burkina Faso as patients on ARV pay a flat fee of FCFA 5000 per month for access to ART and FCFA 3000 per lab test, independent of the level of care they require. Our results indicate that wealthier patients pay more, unless they are coming for an HIV-related service (table 5), without getting a better quality of care (table 3). This raises the question of whether there is some advantage the wealthier are paying for. To answer this question we look at the time a patient spends in the health facility before being received by a health professional. The regressions are reported in table 6. In column 1, it is apparent that wealthier patients spend significantly less time waiting to be received. Roughly, waiting time decreases by more than two hours for each increase of one unit in the wealth scale, and the coefficient is significant at the one percent level. When HIV/AIDS services are introduced and interacted with wealth in the regression in column 2, wealth by itself no longer influences waiting time. Patients coming for HIV services wait longer, but less so if they are wealthy.

Column 1 might suggest that what wealthier people are getting in paying more is not better quality of care, but a more comfortable experience, for example a shorter waiting time before being seen by a health professional. However, when we control for whether the visit is HIV-related, that negative association between wealth and waiting time is only present among patients visiting HIV services. Yet, table 5 indicated that when the visit was HIV-related, wealthier people were not paying more. It seems that wealthier people are able to enjoy a

shorter waiting time for HIV services – a substantial advantage given that waiting time for HIV visits is on average longer- without having to pay more. Overall, our results indicate that consulting for HIV-related services, while not more costly to patients significantly increases the quality of care received but increases substantially the time spent waiting for this upgraded service, unless the patient is wealthy. Our analysis suggests that the wealth of patients does not affect care quality, but helps in reducing waiting time, in particular for patients requiring HIV-related services. It is plausible that health facilities engage in price discrimination based on wealth. If health professionals can "guess" the wealth level of a patient at the time of the service (and they guess correctly on average), then they could effectively discriminate between rich and poor patients and charge the formers more. This finding is consistent with the result from Banerjee (1997) where waiting times are used as a screening device in a hospital setting. This is therefore consistent with some kinds of price discrimination, and has interesting implications for user-costs in such scenarios. Hunt (2010) reaches to similar conclusions while analyzing the health sector in Uganda. She finds that wealthier patients were more likely to pay higher briberies, and this would be consistent with price discrimination by health care providers.

Conclusions and Policy recommendations

The objective of this study is to assess how the delivery of HIV-related services is related with users' satisfaction, through the quality of care they receive, the costs they have to bear and the opportunity cost they face when they wait to be served at the health facility. We do not focus only on HIV-positive patients, but we want to answer this question for all the patients attending a health facility. Our results indicate that visiting for HIV-related services makes a difference in the overall quality, costs of care and waiting time. First, attending HIV-related services guarantees a better quality of care, without having to pay more. However, requiring HIV-

related services also means enduring a longer waiting time at the facility. That longer waiting time is reduced for wealthier individuals. These first findings indicate that there is a difference in the treatment of patients depending on the purpose of their visit. Even if one could consider that the increase in the waiting time compensates somehow the better quality, it is still surprising that a certain category of patients seems to receive differential treatment.

Different explanations can be brought forward to explain these findings. First, HIV-related services might be different in nature. HIV/AIDS is a serious chronic disease that might require more attention from the health provider than other medical conditions. One shortcoming of our analysis is that we do not have specific information about the conditions for which the patients not visiting for HIV-related services were consulting. The Government of Burkina Faso also decided to subsidize antiretroviral treatment, explaining why out-of-pocket expenses are not higher for the upgraded service patients visiting HIV services benefit from.

Second, it is clear that HIV-related services have benefited over the last years from more generous funding, to a large extent from external donors, than other health services. This could explain why quality of care is higher (better equipment and supplies, more motivated health practitioners) and why upfront costs for patients are lower (if both the supply of drugs and the chain of service delivery is externally funded, it is easier for the Government to subsidize it). This could also explain the longer waiting time, as relatively better quality of care and low cost can naturally generate more crowded waiting rooms.

Whether the introduction and the relatively generous external financing of HIV services have had an overall positive or negative impact on the delivery of other health services has generated a lot of debate. On the one hand, the improvement of equipment and supply chains and the fact that many AIDS patients have turned from being terminally ill patients crowding inpatients services into chronic patients easier to manage as outpatients might have, as a positive spillover, benefited other health services. On the other hand, the influx of resources

and money into HIV/AIDS services might have distorted incentives both at the facility and at the provider level and encouraged neglecting other services. We clearly note that our cross-sectional study does not allow a clear cut answer to this debate. Our finding that patients visiting for HIV services receive on average better quality than others does not imply that HIV services have had a negative impact on other health services. Our finding is consistent with the quality of other services increasing, remaining stable or declining with the introduction of HIV services. Only an analysis of a panel of health facilities before and after the introduction of ARV services would potentially allow concluding on the question of the overall impact of the introduction of HIV services on the quality of other types of medical care. Further investigation should be conducted along those lines. However, we can conclude that it would be desirable for the quality of care in other services to reach at least the level attained in HIV services and the upfront costs to be reduced.

Finally, our finding that wealth does not affect quality of care is reassuring in terms of equity. But we find that wealth is associated with lower waiting time for HIV-related services, even though wealthier patients do not pay more for those services (and for those services only). This suggests more subtle ways in which wealthier individuals enjoy a more comfortable experience while visiting health facilities. While this type of preferred access is difficult to detect and correct, it goes against the principle of equity.

Figure 1: Quality index by type of health facility

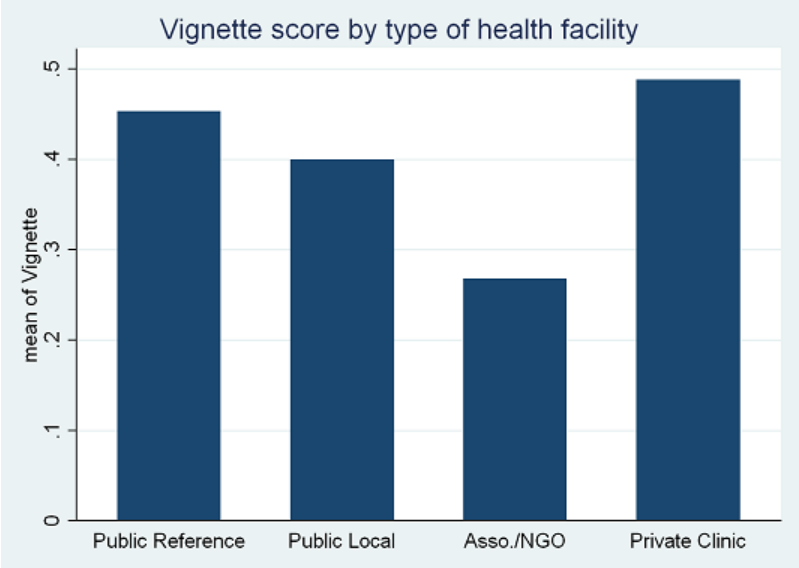

Table 1: Frequencies of patients' positive answers on whether the following questions on medical history were asked during the visit

	Quality Index components: Patients asked about	Total	Male	Female	P-value	HIV	non-HIV	P-value
1	Beginning of current pain	80.9%	83.6%	79.2%	(0.317)	73.0%	89.3%	(0.000)
2	Beginning of sickness	81.2%	84.3%	79.2%	(0.238)	73.6%	89.3%	(0.000)
3	Presence of blood in sputum	32.7%	32.1%	33.0%	(0.857)	38.2%	26.8%	(0.024)
4	Episode of breathing difficulties	29.5%	32.8%	27.4%	(0.276)	29.2%	29.8%	(0.911)
5	Stitch	23.1%	23.1%	23.1%	(0.996)	25.8%	20.2%	(0.217)
6	Night perspiration	31.2%	27.6%	33.5%	(0.250)	41.0%	20.8%	(0.000)
7	Contact with coughing individuals	32.4%	31.3%	33.0%	(0.746)	45.5%	18.5%	(0.000)
8	Weight loss	47.7%	45.5%	49.1%	(0.521)	60.7%	33.9%	(0.000)
9	Prior pathologies, including HIV and TB	44.2%	39.6%	47.2%	(0.165)	60.1%	27.4%	(0.000)
10	Asthma history	18.2%	20.9%	16.5%	(0.303)	23.0%	13.1%	(0.017)
11	Is the patient currently under treatment?	59.0%	61.2%	57.5%	(0.502)	57.9%	60.1%	(0.670)
12	Smoking history	17.3%	33.6%	7.1%	(0.000)	20.8%	13.7%	(0.081)
13	Medicinal allergy	45.1%	45.5%	44.8%	(0.897)	53.4%	36.3%	(0.001)
14	Other medical history	41.3%	43.3%	40.1%	(0.557)	48.3%	33.9%	(0.007)
15	Patient's employment	53.8%	56.0%	52.4%	(0.512)	59.6%	47.6%	(0.026)
16	Alcohol consumption history	30.3%	36.6%	26.4%	(0.045)	33.7%	26.8%	(0.162)
17	Other question	7.8%	11.2%	5.7%	(0.062)	5.6%	10.1%	(0.119)
	N	346	134	212		178	168	

P-values of Pearson's Chi-2 test in parentheses. "HIV" and "non-HIV" represent whether or not the consultation was related to HIV.

Table 2: Summary statistics for patients

Means for continuous variables

	Total	Males	Females	P-value	HIV	Total non-HIV	P-value	HIV	Males non-HIV	P-value	HIV	Females non-HIV	P-value
Age (years)	35.369	39.107	33.014	(0.000)	34.632	36.145	(0.334)	37.620	40.025	(0.461)	33.427	32.405	(0.460)
	[0.663]	[1.207]	[0.723]		[0.702]	[1.142]		[1.609]	[1.680]		[0.719]	[1.446]	
Education (years)	4.295	4.252	4.322	(0.881)	4.126	4.473	(0.513)	3.020	5.012	(0.026)	4.573	3.952	(0.298)
	[0.270]	[0.470]	[0.328]		[0.340]	[0.425]		[0.517]	[0.678]		[0.423]	[0.518]	
Wealth index	0.370	0.314	0.405	(0.003)	0.363	0.378	(0.677)	0.287	0.331	(0.378)	0.393	0.423	(0.531)
	[0.015]	[0.024]	[0.018]		[0.019]	[0.023]		[0.030]	[0.034]		[0.023]	[0.030]	
N	346	134	212		178	168		52	82		126	86	

Standard deviations in brackets. P-values of mean test in parentheses. "HIV" and "non-HIV" represent whether or not the consultation was related to HIV.

Frequencies for categorical variables

	Total	Males	Females	P-value	HIV	Total non-HIV	P-value	HIV	Males non-HIV	P-value	HIV	Females non-HIV	P-value
	100% (N=346)	38.7%	61.3%		51.5%	48.6%		38.8%	61.2%		59.4%	40.6%	
Marital status				(0.000)			(0.000)			(0.026)			(0.000)
Single	19.9%	23.8%	17.4%		16.2%	23.8%		22.4%	24.7%		13.7%	22.9%	
Married/couple	53.7%	70.8%	43.0%		42.2%	65.9%		65.3%	74.1%		33.1%	57.8%	
Divorced/widowed	26.4%	5.4%	39.6%		41.6%	10.4%		12.2%	1.2%		53.2%	19.3%	
N	337	130	207		173	164		49	81		124	83	
Occupation				(0.000)			(0.257)			(0.919)			(0.317)
Salaried employee	12.8%	21.1%	7.4%		11.0%	14.8%		19.1%	22.4%		7.7%	6.8%	
Farmer/Housewife/Breeder	54.3%	46.3%	59.5%		55.5%	53.0%		44.7%	47.4%		59.8%	58.9%	
Shopkeeper	22.0%	17.1%	25.3%		25.0%	18.8%		19.1%	15.8%		27.4%	21.9%	
Other	10.9%	15.4%	7.9%		8.5%	13.4%		17.0%	14.5%		5.1%	12.3%	
N	313	123	190		164	149		47	76		117	73	

P-values of Pearson's Chi-2 test in parentheses apply to the overall distribution of each variable with regard to sex or the purpose of the visit. "HIV" and "non-HIV" represent whether or not the consultation was related to HIV. The difference of frequencies between HIV-related and not HIV-related visits with regard to sex is significant (Pvalue=0.000; not presented).

Table 3: Fixed effects estimates of quality of care (dependent variable is quality index)

	(1)	(2)	(3)	(4)
Upfront costs			-0.023	0.002
			[0.014]	[0.014]
HIV-related services *Upfront costs				-0.169
				[0.237]
Wealth index	-0.110	-0.035		
	[0.065]*	[0.075]		
HIV-related services		0.175		0.169
		[0.045]***		[0.029]***
HIV-related services*Wealth index		-0.032		
		[0.094]		
Years of education	-0.001	-0.001	-0.003	-0.002
	[0.003]	[0.003]	[0.003]	[0.002]
Female	0.007	-0.023	-0.003	-0.029
	[0.027]	[0.026]	[0.026]	[0.026]
Age	0.015	0.005	0.014	0.004
	[0.006]**	[0.006]	[0.006]**	[0.006]
Age squared	-0.015	-0.002	-0.014	-0.001
	[0.007]**	[0.007]	[0.007]**	[0.007]
Constant	0.129	0.218	0.121	0.227
	[0.120]	[0.115]*	[0.116]	[0.112]**
Observations	344	344	344	344
R-squared	0.51	0.56	0.51	0.56

* significant at 10%; ** significant at 5%; *** significant at 1%
Robust standard errors in brackets. Quality of care is an average of seventeen 0-1 discrete variables, normalized between 0 and 1. Wealth index is a 0 to 1 score.
Regressions also include health facility fixed effects.

Table 4a: Fixed effects estimates of quality index based on HIV/AIDS specific questions

	(1)	(2)	(3)	(4)
	FE	FE	FE	FE
Upfront costs			-0.086	-0.03
			[0.031]***	[0.021]
HIV-related services*Upfront costs				-0.021
				[0.463]
Wealth Index	-0.282	-0.219		
	[0.134]**	[0.155]		
HIV-related services		0.312		0.375
		[0.103]***		[0.076]***
HIV-related services*Wealth index		0.186		
		[0.204]		
Female	-0.001	-0.002	-0.007	-0.005
	[0.006]	[0.005]	[0.005]	[0.004]
Years of education	0.112	0.039	0.085	0.032
	[0.061]*	[0.049]	[0.060]	[0.049]
Age	0.043	0.02	0.044	0.021
	[0.012]***	[0.010]*	[0.012]***	[0.010]**
Age squared	-0.05	-0.022	-0.051	-0.022
	[0.014]***	[0.012]*	[0.015]***	[0.012]*
Constant	-0.324	-0.079	-0.37	-0.143
	[0.244]	[0.212]	[0.253]	[0.214]
Observations	339	339	344	344
R-squared	0.42	0.54	0.44	0.54

* significant at 10%; ** significant at 5%; *** significant at 1%
Robust standard errors in brackets. Quality of care is an average of seventeen 0-1 discrete variables, normalized between 0 and 1. Wealth index is a 0 to 1 score. Regressions also include health facility fixed effects.

Table 4b:

	(1)	(2)	(3)	(4)
	FE	FE	FE	FE
Upfront costs			0.001	0.021
			[0.008]	[0.013]
HIV-related services*Upfront costs				-0.263
				[0.206]
Wealth Index	-0.109	-0.016		
	[0.061]*	[0.074]		
HIV-related services		0.156		0.130
		[0.067]**		[0.056]**
HIV-related services*Wealth index		-0.123		
		[0.098]		
Female	-0.031	-0.050	-0.039	-0.060
	[0.032]	[0.032]	[0.032]	[0.032]*
Years of education	0.002	0.002	-0.001	0.000
	[0.003]	[0.003]	[0.003]	[0.003]
Age	0.007	-0.001	0.007	-0.001
	[0.006]	[0.007]	[0.006]	[0.007]
Age squared	-0.005	0.004	-0.006	0.004
	[0.007]	[0.008]	[0.007]	[0.008]
Constant	0.373	0.419	0.341	0.426
	[0.136]***	[0.133]***	[0.133]**	[0.132]***
Observations	339	339	344	344
R-squared	0.54	0.56	0.54	0.57

* significant at 10%; ** significant at 5%; *** significant at 1%
Robust standard errors in brackets. Quality of care is an average of seventeen 0-1 discrete variables, normalized between 0 and 1. Wealth index is a 0 to 1 score. Regressions also include health facility fixed effects.

Table 5: Fixed effects estimates of upfront costs (in FCFA thousands)

	(1)	(2)	(3)
Wealth index	0.705	0.980	
	[0.271]***	[0.308]***	
HIV-related service		-0.165	-0.640
		[0.188]	[0.114]***
HIV-related service *Wealth index		-1.175	
		[0.386]***	
Years of education	0.000	0.000	0.012
	[0.013]	[0.012]	[0.010]
Female	-0.132	-0.001	0.022
	[0.113]	[0.109]	[0.106]
Age	-0.022	0.011	0.017
	[0.024]	[0.024]	[0.024]
Age squared	0.027	-0.012	-0.022
	[0.029]	[0.029]	[0.028]
Constant	0.521	0.011	0.248
	[0.497]	[0.476]	[0.469]
Observations	344	344	344
R-squared	0.24	0.33	0.30

* significant at 10%; ** significant at 5%; *** significant at 1%
Robust standard errors in brackets. Wealth index is a 0 to 1 score .
Regressions also include health facility fixed effects.

Table 6: Fixed effects estimates of waiting time

	(1)	(2)
Wealth index	-2.227	-1.145
	[0.735]***	[0.878]
HIV-related service		1.379
		[0.535]**
HIV-related service *Wealth index		-1.98
		[1.101]*
Years of education	-0.065	-0.068
	[0.035]*	[0.034]**
Female	0.455	0.369
	[0.307]	[0.311]
Age	0.022	-0.024
	[0.065]	[0.068]
Age squared	-0.015	0.048
	[0.077]	[0.081]
Constant	2.28	2.367
	[1.348]*	[1.358]*
Observations	339	339
R-squared	0.30	0.32

* significant at 10%; ** significant at 5%; *** significant at 1%
Robust standard errors in brackets. Wealth index is a 0 to 1 score.
Regressions also include health facility fixed effects.

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