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DEVELOPMENT OF CASE RATES FOR HIV TREATMENT AND CARE AT CERTIFIED PRIVATE CLINICS

HEALTH INITIATIVES FOR THE PRIVATE SECTOR (HIPS) PROJECT

July 2009

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EXECUTIVE SUMMARY

Background and Research Objectives

Previous research in Uganda and elsewhere has shown that uncertainty about the cost of treating a disease is one of the primary reasons that employers are unwilling to commit to treatment of employees, or employees and dependents. One way to increase the number of employees (and dependents) receiving employer sponsored treatment in the private sector would be for providers to accept an annual fixed rate “per case,” enabling the employer to budget accurately for the cost of the benefit

The main objective of the study was therefore to develop and negotiate fixed rates that would be charged for the treatment of AIDS at selected private clinics receiving free ARVs through Government/donor funded supplies. The study also aimed at developing an annual rate for monitoring and prophylaxis for HIV positive individuals not yet requiring ART. Finally, the study sought to compare drug dispensing habits in the company funded clinics with those of the private for profit companies.

Methodology

In May 2009, HIPS conducted a qualitative study among 22 clinics in Uganda that are accredited to provide antiretroviral therapy. At 7 private for profit clinics (PFP) and 15 company clinics, HIPS researchers reviewed the medical records of patients receiving care and treatment for HIV in 2008. The study collected information on frequency, type and costing for laboratory services offered to the patient; frequency, type and price for professional services; frequency, type and price of drugs dispensed to the patients. In each clinic, permission was sought from the clinic management to conduct the interview, a list of patients attending the ART clinic was obtained and 20 of these were randomly selected. Records for this sample were reviewed to identify costs relating to medication, laboratory tests performed and personnel seen over a period of one year from January 2008 – December 2008. For the cases where the sampled clinic did not have the required 20 patients, all patient records in that clinic were reviewed. Data for 414 AIDS patients was obtained and analysed in this study.

Main findings

Among the 414 AIDS patients’ data reviewed 82% were on ARVs. Of these [on ARVs] 94% were on first line ART. Analysis of the data reveals that the cost of treating a worker with first line ARVs (exclusive of the cost of ARVs which were received free from Government supplies) costs Ushs 434,000 (\$217) per year in company clinics (if treatment can be provided with existing staff¹ in company clinics) and Ushs 763,000 (\$380) per year in private clinics. The average annual costs for laboratory services (per-patient) were reported to be Ushs 333,000 (44% of overall cost of managing an ART patient). The cost for clinical monitoring and prophylaxis (professional service costs) and management of opportunistic infections was found to be Ushs 329,000 and Ushs 101,000 respectively. Costs were calculated based on private sector prices and fees for the different drugs and services. Thus these costs may possibly be higher since they include dispensing and stocking costs, and a reasonable profit margin.

This study further reveals that the professional service costs, which considerably increase the cost of management of ART patients, can be offset, if a company decides to provide ART services to its workers through a company clinic. This would cost, on average, \$217 per-patient per-year. This is comparably

¹ The cost for staff includes their basic pay and does not include fringe benefits.



lower than the cost a company would incur to replace a lost worker. A study² conducted at one of the manufacturing companies revealed that HIV and AIDS related morbidity and mortality costs the company, on average, 19,964,693 million shillings (Us \$ 9982) per lost worker. The study also found that the provision of ART and treatment for opportunistic infections of employees living with AIDS at the company clinic had helped to avert the costs that would have incurred by the company. For a company with 5% of its work force on ART (at a population prevalence is 6%), it would only cost 0.5%-1% of the total labour costs.

Programmatic recommendations

In light of the above findings, a stronger case needs to be made by the HIPS program regarding the employer's role in the health of employees on ART: considering the costs of providing ART versus the costs of replacing a worker.

Findings indicate that the cost for laboratory services account for largest proportion (44%) of ART-related costs. CD4 and viral load testing cost account for more than half of the costs for ART-related laboratory services. There is therefore need to increase support for CD4 and viral load testing. The program could also identify alternatives to provide prophylaxis treatment especially the provision of CTX since this also contributes significantly to the treatment costs for HIV and AIDS patients.

² Bukuluki (2009). Impact of ART on Employer Costs Related to AIDS. Report Submitted to Health Initiatives for Private Sector Project (HIPS). Uganda, Kampala



INTRODUCTION AND BACKGROUND TO THE STUDY

This report presents findings of the study commissioned by the HIPS project. The study sought to contribute towards the following objectives:

- Develop and negotiate fixed rates that would be charged for the treatment of AIDS at selected private clinics receiving free ARVs through Government/donor funded supplies.
- Compare drug dispensing habits in the company funded clinics with those of the private for profit companies.

Back ground and Context

Previous research in Uganda and elsewhere has shown that uncertainty about the cost of treating a disease is one of the primary reasons that employers are unwilling to commit to treatment of employees, or employees and dependents.³ Recent conversations between the HIPS Project and Uganda employers not providing treatment for HIV/AIDS confirm this concern.

Business managers are expected to operate within tight budget constraints. They may be willing to spend money on employee benefits, but this cost needs to be predictable and controllable. Even if the employer has the potential to improve productivity and reduce employee attrition and absenteeism through treatment, the uncertain cost of treatment is a barrier to increasing corporate health care commitments.

HIPS and its predecessor, the Business PART project, have been working with large employers to certify on-site clinics for ART, and now for TB care. However, there are only a limited number of firms in Uganda with clinics that are large and sophisticated enough to obtain certification. Smaller employers (those with less than a few hundred employees) do not operate a clinic, or it is not staffed at a level that can be certified. A few of these employers (generally those with relatively highly paid staff) may purchase health insurance policies. But if employer-sponsored treatment is to be offered by most of these small to medium sized firms, they must refer employees to private sector clinics and pay the bill. Uncertainty about the size of the bill makes them reluctant to make this commitment.

Our hypothesis is that HIPS can increase the number of employees (and dependents) receiving employer sponsored treatment in the private sector if it can negotiate fixed rates “per case.” Such rates would take into account the standard treatment protocols, existing prices, and the risk that a certain percentage of cases will develop a drug reaction, side effect or concurrent infection and require additional treatment. HIPS can then market to the employer the availability of this service at a fixed price. The cost can be offset by savings. If the employee were not treated, s/he would sicken and die, with consequent costs to the employer. An earlier study in Uganda found these costs running at 1% of labor costs at two large companies prior to the availability of ART. If the patient receives treatment in a Government ART clinic, the employer will still incur costs, even though it is not paying for care.

This last point is potentially important. If employees obtain ART at Government clinics, they are likely to be absent at least one day a month to obtain their medication. It would be difficult for an employer to fire an employee just because s/he is receiving ART treatment and losing this work time. Thus, there is a potential saving in reduced sick leave if the employer sponsors private sector treatment.

Furthermore, this negotiated “case price” could also be available to individuals who are supporting their own treatment, and would reduce the risk that the patient would discontinue treatment, or move to public sector treatment, if s./he encounters side effects which increase out of pocket costs.

³ Business PART Evaluation: Cost of HIV in the workplace



Of course, the participating clinic is absorbing the risk of variation in treatment costs resulting from side effects, drug reactions or particularly virulent infections. However, the annual fee will include an allowance to cover the anticipated percentage of these complications, and their average cost. Over a large number of patients, the risk to the provider offering care under a fixed rate could be small. Because consultations are a large part of the risk associated with complications, the provider's exposure is reduced because physicians and nurses are on salary and there is no incremental cost associated with an additional visit.

An approach similar to this has been adopted in India, where the Government is trying to reduce infant and maternal mortality by issuing vouchers to poor pregnant women that entitle them to deliveries in participating private hospitals. The voucher payment is determined based on an expected mix of normal deliveries and C sections. Thus, if approximately 15% of delivering women require a C-section, the price per delivery is $0.85X \text{ cost of normal delivery} + 0.15X \text{ cost of a C section}$. In this system, the provider has no incentive to do unnecessary C sections, but does receive sufficient funds to cover the expectable number of necessary C sections

With the cost of antiretroviral drugs covered by the Government and donors at accredited ART clinics, the absolute difference in the costs of treating the simple and complicated first line ART case are much less than the difference between a normal delivery and a C section. Furthermore, the provider who effectively counsels his patient, improves adherence and reduces side effects will actually receive a higher net return from the case rate because there will be fewer patients with complications.

In 2006, one of the private health insurers in Uganda was considering adding AIDS treatment to the benefit package in policies which it sells to employers, and commissioned a study of the current costs of ART at a well regarded NGO in Kampala. The study showed that the median costs for treating the typical adult ARV patient (including the cost of ARV's) was about \$1,000 per year when the full cost of all elements of outpatient care (not just drugs) were included and about \$1,500 per year to cover the full cost of paediatric ARV treatment. Their study looked at the components of cost, and found that drugs (including ARV's) averaged 52% of costs for adult ARV patients and 56% of total costs in children. The cost of CD4 and viral load tests represented only 5% of paediatric and 6% of adult monthly treatment costs. The study concluded that a reduction in the differential between adult and paediatric ART formulations would reduce the cost for paediatric patients. While the study identified a few outliers among the cases studied, there was reasonable concentration around the observed mean and median costs. The facility where the study was undertaken provides extensive patient support services, more than are usually available in private or company clinics. These support services contributed significantly to the level of costs observed.

The HIPS Project

HIPS works with the private sector to increase access to and use of HIV/AIDS, TB RH/FP and malaria services through collaboration with mid- and large size employers in Uganda's private sector. To achieve this, HIPS has four main tasks:

1. Expand and strengthen access to and utilization of health and HIV/AIDS services in the private sector.
2. Expand the number of Global Development Alliance (GDA) Partnerships.
3. Capacity Building- Support Initiatives to strengthen private sector worker/employer organizations.
4. Develop innovative and proven approaches to support orphans and other vulnerable children.

HIPS project offers Ugandan companies a wide range of options for improving the health of their employees, the employees' dependants, and other members of the community. HIPS provides training and other support for companies and providers in areas including HIV testing, AIDS treatment, palliative



care, TB diagnosis and care, malaria diagnostics, behaviour change Communication (BCC), community mobilization and outreach, IEC materials adaptation and distribution. Working with the providers, employers and Ministry of Health, HIPS provides technical assistance so that health facilities can be accredited and receive free ARVs from MOH.



METHODS (THEORETICAL FRAMEWORK)

The basic approach was to multiply the recorded services provided by the centres to a sample of patients on AIDS treatment by the current unit costs of these services in order to determine the cost of treating AIDS in each of the sampled patients. The average monthly costs of treating patients in the sample were then calculated. Median and mean monthly treatment costs, and the dispersion of costs, were calculated for patients before and after beginning antiretroviral therapy. Costs were also analyzed for pediatric and adult patients.

Sample and Design

All the 22 HIPS partner clinics which had offered ARVs for a period of at least 1 year were selected to take part in this study. All of these clinics are accredited by the MOH to provide antiretroviral therapy. There are 7 private for profit clinics (PFP) and 15 company clinics. A sample of 20 patients at each clinic was drawn from the list of AIDS patients treated throughout 2008. If there were fewer than 20 patients in total, all were included in the sample. Medical records of the sampled patients were reviewed and information collected on:

- frequency, type and costing for laboratory services offered to the patient
- frequency, type and price for professional services
- frequency, type and price of drugs offered to the patients

Data collection

Data was collected from May – June 2009 among the participating clinics spread across the entire country. Data collection was done with the support of research assistant trained by HIPS who interviewed health professionals and abstracted the data from existing clinic records. Data extracted from clinic records include: ART patient visits, laboratory and other services accessed from the respective clinics. The costs of non-ARV drugs and professional service costs were generated through interviews with health professionals. Data collection was authorized by the management of the respective clinics with the close assistance of the data managers at the various clinics.

Data entry and analysis

The data were entered in Microsoft Access and exported to STATA 9.2 for analysis. Rigorous data cleaning was carried out to ensure that the data used for analysis was more accurate and usable. Data analysis consisted of calculation of frequencies for ART usage in the different clinic, means, median and inter-quartile ranges for costs of ART services, OI drugs and human staff. Drug dispensing patterns in corporate and private clinics were compared. Average annual costs for laboratory services, drugs and human services offered to HIV positive patients were calculated.

RESULTS

Baseline Characteristics of Patients

Consistent with the pattern of infection and latency, the average patient age was 36 and all patients were of working age, except for a few children. There were more females than males in the sample. Only 5% of the sample had progressed to second line therapy.

Table 1: Baseline characteristics of patients

Variable	
Age ; Median (IQR)	36 (29 - 42)
Mean (range)	36 (5 - 62)
Sex; males, n (%)	176 (42%)
Females, n (%)	238 (58%)
On - ARV n (%)	341 (82%)
- Prophylaxis n (%)	73 (18%)
First line ARV [§]	320 (94%)
Second line ARV	16 (5%)
Unknown	5 (1%)

Note § - out of patients on ARV (n=341)

Facilities that participated in the study

Up to 22 facilities participated in this study. Seven of these were purely private for profit facilities while the rest were company clinics or NGO facilities. The average number of clients in each facility was 20, with the highest facility having 21 clients while the lowest had 9 clients. Details are presented in the table below.

Table 2: List of facilities that contributed to the survey

Facility	No. of patients
1. Facility A	19
2. Facility B	20
3. Facility C	19
4. Facility D	20
5. Facility E	19
6. Facility F	21
7. Facility G	19
8. Facility H	20
9. Facility I	20
10. Facility J	19
11. Facility K	18
12. Facility L	19
13. Facility M	19
14. Facility N	18



Facility	No. of patients
15. Facility O	19
16. Facility P	20
17. Facility Q	20
18. Facility R	9
19. Facility S	18
20. Facility T	20
21. Facility U	20
22. Facility V	18
Total	414

Note: a – Purely private for profit company

The cost of laboratory services

The study collected a variety of information on the types of ART-related laboratory services that the patients received at the facilities. The table 3 shows tests and prices for laboratory tests carried out from both the corporate and private for profit clinics.

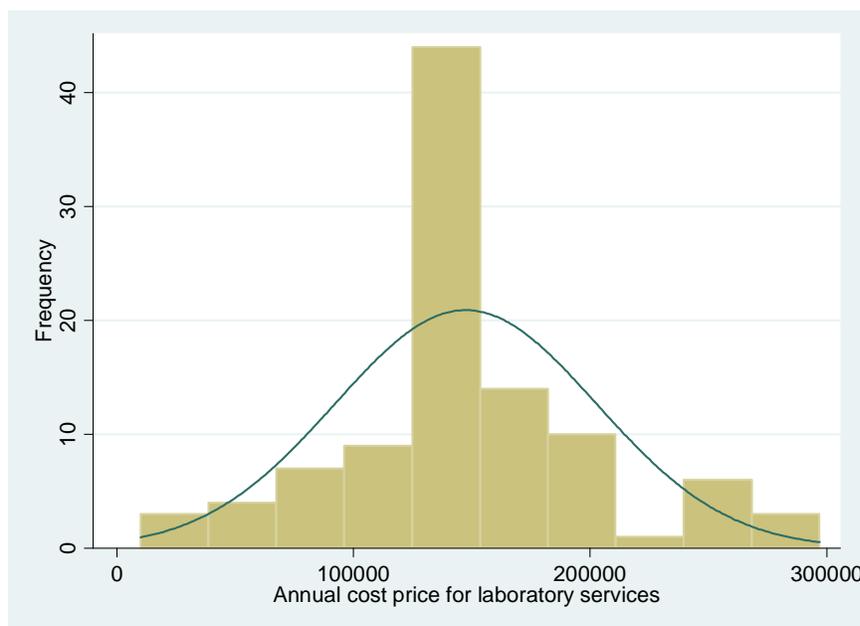
Table 3: Summary of costs lab tests for ART patients in Uganda shillings (Ushs)

Type of test	Total no. of pts. Tests (out of 414)	No. of pts. with tests paid	Cost per unit of test				No. pts with free tests
			Median	Mean	Lowest	Highest	
Blood film(BS)	160 (37%)	105	3,000	2,970	500	5,000	55
CBC	176 (43%)	104	15,000	18,150	10,000	30,000	72
CD4	376 (91%)	239	40,000	30,500	1,000	30,000	137
ELISA	21 (5%)	-	-	-	-	-	21
GRAM	19 (4%)	16	4,000	4,125	4,000	5,000	3
HB	66 (16%)	33	500	2,000	9,666	30,000	33
KOH	15 (4%)	1	10,000	10,000	10,000	10,000	14
Liver fn. Test	213 (51%)	124	30,000	29,825	3000	42,750	89
Pregnancy	59 (14%)	23	3,000	6,980	500	25,000	36
RPR	81 (20%)	30	5,000	5,383	500	25,000	51
Rapid HIV	329 (79%)	87	10,000	8,436	1,000	30,000	242
Renal fn. test	221 (53%)	128	29,500	27,275	3,000	42,750	93
Stool exam	26 (6%)	21	2,000	3,142	2,000	11,000	5
TB sputum	106 (26%)	49	8,000	9,560	500	30,000	57
Toxo IgG	13 (3%)	8	20,000	14,775	1,600	25,000	5
Urine test	62 (15%)	44	5,000	7,704	500	80,500	18
Viral load	81 (20%)	35	120,000	35,414	120,000	120,000	46
RBS	35 (8%)	26	5,000	5,800	1,000	30,000	9
Other tests	128 (31%)	89	10,000	13,980	500	50,000	39
All costs	2187^b	1162	11,000	19,160	500	120,000	1025

Note: The total number of tests done for the 414 patients includes those that were paid for by the client and those that were provided freely to a client

A total of 2187 tests were carried between January 2008 and December 2008 by the different clinics. Fifty three (53%) of these were paid for by the clients, albeit some at subsidized prices. The other tests (47%) were paid for by the respective patients' companies. CD4 T-cell count accounted for the majority of the tests (91%). Each patient on average spent Ushs 333,000, on laboratory service over the year. CD4 and viral load testing cost account for more than half of the costs for ART-related laboratory services. The average cost of providing CD4 T-cell count is Ushs 30,500 (\$ 15) per test. Results are further illustrated in the graph below:

Annual cost for laboratory services

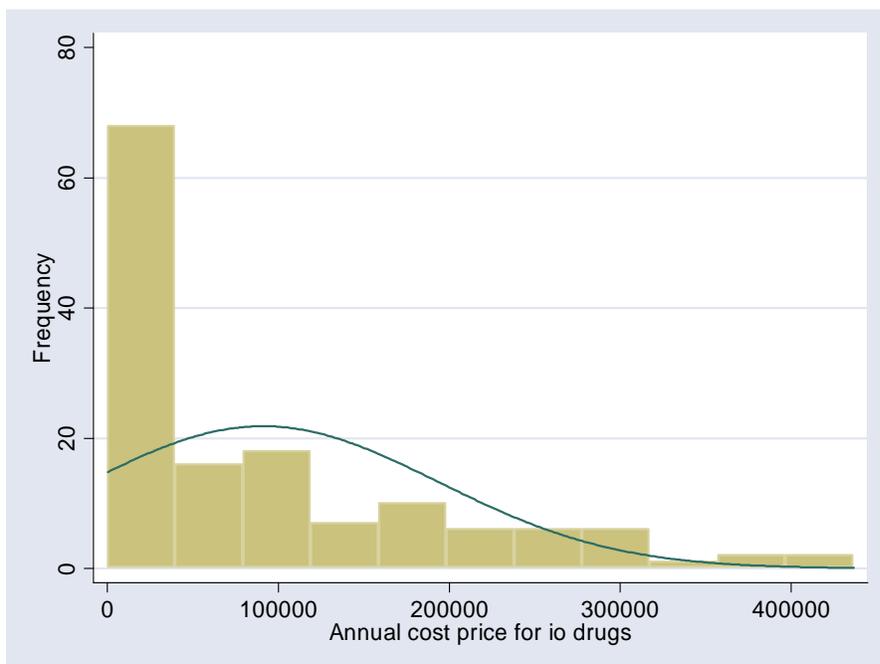


To further understand the cost of laboratory tests for a patient, further analysis was done to identify the frequently carried out tests vis-à-vis their cost. Results here showed that the frequently done test cost at least 150,000 shillings. Fewer tests that cost more than 200, 0000 shillings were conducted, again portraying a desirable condition.

Cost of Non-ARV drugs

The study also aimed at establishing an annual allowance for drugs for opportunistic infections. Results showed that in average, Ushs 101,000 per patient was spent on none—ARV drugs. This was adjusted to cover full compliance to national protocol to ensure that drugs like Cotrimoxazole are calculated as having been given daily. Further analysis of costs vis-à-vis the frequency of use or prescription of OI drugs reveals that the most expensive of medicines are less utilized per annum. The most relied upon medicines range between 100,000 shillings and below. This shows a promising trend that a person on ART does not need to spend much money per annum on OI drugs. The graph below shows that the lower cost medicines were the most utilized.

A graph showing frequency of utilization of OI drugs versus cost per annum



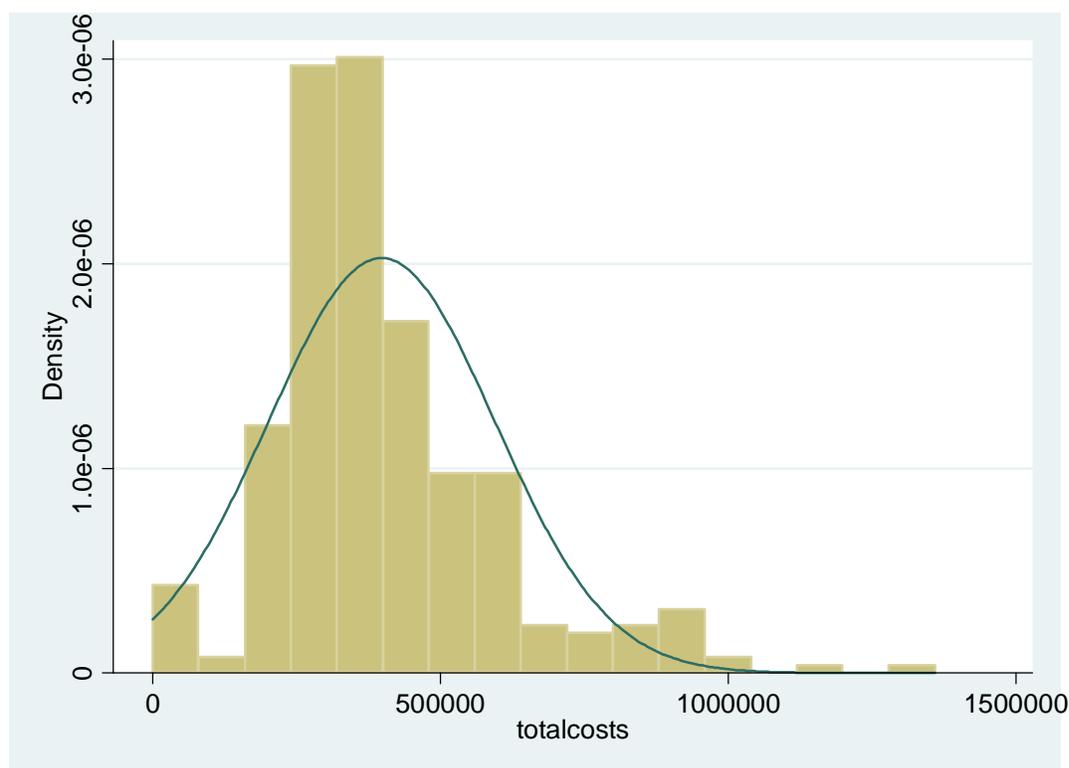
Professional service costs

The study sought to compile the professional service costs relating to management of ART patients. The staff cadre that attend to patients on ART range from: doctors, clinical officers, laboratory technicians, nurses (and nursing assistants), pharmacy technicians and counselors. Using the private sector professional cost (consultation fee) per client visit and the average number of visits per-client per year, the average professional service costs was calculated.

Data generated from review of medical records reveals that 3512 clinic visits were made by the 320 patients between January and December 2008. In effect patients on ART treatment visit the clinic nearly once per month.⁴ Private clinics charge on average Ushs 30,000 (\$15) as professional service cost (consultation fee) per visit. Therefore first line ART patients incur, on average Ushs 329,100 (\$164) per year as professional service costs.

⁴ To obtain the average number of visits, we divided these by the number of patients, i.e. $(3512/320) = 10.97$ visits per year.

Total cost of services



The histogram with the Total costs from both private and corporate (n=320) is slightly skewed to the left, implying lower costs, even though we know that this is driven by the larger numbers of patients from the corporate clinics. Overall the total costs are variable.

Case Rate for an ART patient

A total of the average cost of professional fees, drugs and laboratory services obtained above provided the average annual cost of first line ART, exclusive of the cost of ARVs. The study derived the case rate for managing an ART patient at Ushs 763,000 (\$380) per annum. This is illustrated in the table below.

Because of the way in which the costs for professional services were calculated, this likely overestimates the average cost for treatment in company clinics. The average visit rate in private sector care has been attributed to each visit, but company clinics (even those run on contract) tend to run on a fixed budget with a fixed number of staff working full or part time. Thus, the incremental professional service cost of an additional patient visit is zero. In fact, the patient on ARV treatment would likely be visiting the clinic nearly as often for treatment of opportunistic infections if he remains in employment with untreated AIDS.

Summary of cost components

Item	Annual cost (Ushs)	Annual cost (\$)
Professional services	329,000	164
Lab test	333,000	166
Non ARV drugs	101,000	50
Total	763,000	380

N.B. This should costs less for in-house clinics since most staff and overhead costs are covered. Incremental costs are labs and OI drugs



CONCLUSIONS AND RECOMMENDATIONS

While the ART costs are not inconsiderable, they are predictable and supportable by most companies. Treating a worker with first line ARVs (if government provides the ARVs, and the employer all other services) costs Ushs 434,000 (\$217) per year in company clinics (if treatment can be provided with existing staff⁵ in company clinics) and Ushs 763,000 (\$380) per year in private clinics. These costs are comparably low. The recent study⁶ conducted at one of the manufacturing companies revealed that the loss of a worker to HIV and AIDS costs a company 19,964,693 million shillings (Us \$ 9982) per lost worker. The study also found that the provision of ART and treatment for opportunistic infections of employees living with AIDS at the company clinic had helped to avert the costs that would have been incurred by the company occasioned by the loss of the worker. For a company with 5% of its work force on ART (at a population prevalence is 6%), it would only cost 0.5%-1% of the total labour costs.

According to the study conducted by Business PART project to assess the cost of managing ART for employees versus their annual wage: Cost of labor at Hima is \$10 per day, averaging \$2,500 per annum. In a company clinic (no incremental professional cost), the cost of providing ART per employee is only about \$200 per year (if government provides the ARVs). This equals just a tenth of the average wage. Therefore a stronger case needs to be made by the HIPS program regarding the employer's role in the health of employees on ART: considering the costs of providing ART versus the costs of replacing a worker. This study also reveals that the cost of human services (in form of professional fees), which considerably increases the cost of management of ART patients, can be offset, if a company decides to provide ART services at own company clinic.

The study also highlighted significant differences between drug dispensing practices at corporate versus private clinics; See appendix 6. The corporate clinics appeared wasteful for the majority of drugs. Since the drugs were provided free of charge by the company, there was a tendency to dispense many drugs to patients. This could potentially raise the cost of running the program to the company.

This study further reveals that laboratory costs contribute the largest proportion of ART-related costs. Since decisions to initiate ART treatment is routinely based on algorithms that combine CD4, HIV viral load, and clinical illnesses; there is need to also increase support for CD4 and viral load testing—since these alone contributes to more than half of the of laboratory costs. The program could also identify alternatives to provide prophylaxis treatment especially the provision of CTX since this also contributes significantly to the treatment costs in HIV patients.

Other Recommendation

- The management of records in some private clinics providing ART remains poor. Most of the data reviewed from the clinics was available in hard copy and had no soft copy storage. This makes the retrieving of information relating to patients on ART a daunting challenge. It also makes it considerably hard to make regular analysis of data for clients on ART, to track costs and service usage. This accentuates the need to build the capacity of private and company clinic in handling ART data and proper records management
- There remains a heavy task of ensuring consistent drug availability especially of ARVs at both private clinics and company clinics. Further results also showed that there was interrupted availability of

⁵ The cost for staff includes their basic pay and does not include fringe benefits.

⁶ Bukuluki (2009). Impact of ART on Employer Costs Related to AIDS. Report Submitted to Health Initiatives for Private Sector Project (HIPS). Uganda, Kampala



other drugs for management of opportunistic infections at company clinics. Companies which adopt management of ART on site also need to ensure that there is a consistent supply of prophylaxis medicine and other drugs for management of opportunistic conditions in patients.

- Rational drug use and management is important to improve the efficiency of the program. The corporate clinics appeared to dispense more drugs than the private clinics. This could drive the cost of the program at the company level to an extremely high level making it harder for companies to provide subsidy.



APPENDIX 1: DETAILED METHODOLOGY AND DATA ANALYSIS PROCEDURE

Calculating the cost of professional services

From the records, a subset of adult patients on first line ART treatment for an entire year was developed. The average number of visits in that year was then calculated. This was obtained by dividing the total visits by the patients in the sub-sample in the year by the number of patients in the sub-sample. We multiplied the average number of visits by the median cost of a visit fee for private clinics. This visit fee excluded laboratory and drug costs. This obtained the average fee for professional services in a year for first line ART patients. A single visit fee in company clinics was not available since staffs are paid monthly salaries.

Calculating the cost of non-ARV drugs

All ARVs were assumed to be provided by the government and costs for non- ARV drugs used for the treatment of opportunistic infections was obtained. The total spent on each drug for the sub-sample of patients on first line treatment was divided by the number of patients in the sub-sample to obtain an average spent each year on each non-ARV drug. Cotrimoxazole was assumed to be given throughout the year, as per national protocol. Adding the total of these average annual expenditures obtained the average non ARV cost for a year of treatment for the sub-sample of patients on first line ARVs.

The average cost of drugs for opportunistic infections was determined using only a sample of those ART patients at self-supporting private clinics. Since there is an assumed variation in the frequency of use of several drugs between corporate and private clinics, we used the frequency of use among the entire sample of first line ART patients, but attributed the prices observed when these drugs are dispensed in the private sector. In addition, prices paid by the employer for OI drugs were often not available, and the amount paid in private clinics presumably covers the cost of stocking and dispensing.

Calculating the cost of laboratory services

To calculate the cost of laboratory services, we divided the number of each type of test in the year for the sub-sample by the number of persons in the sub-sample and obtained the average number of each type of test that the “average patient” would receive. We multiplied the average number of each test times the median charge for the test, and obtained a total for all relevant tests to obtain an amount that would typically be spent on lab tests for the average patient in a year.



APPENDIX 2: REFERENCES

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APPENDIX 3: COST (MONTHLY) OF HUMAN SERVICES PROVIDING ART SERVICES TO PATIENTS IN USHS (THOUSANDS)

Facility	Clinical Officer	Lab Tech	MD	Nurse	Nursing assist	Pharmacy Technician	Counsellor
Facility A	500	-	-	-	-	-	-
Facility B	-	500	-	280	280	230	-
Facility C	-	500	-	400	-	500	300
Facility D	500	400	-	-	-	300	400
Facility E	-	300	-	300	-	350	300
Facility F	-	500	2,000	400	-	1,200	-
Facility G	-	500	2,000	400	-	-	-
Facility H	300	370	500	300	-	800	350
Facility I	500	225	-	325	-	-	325
Facility J	600	400	550	-	-	-	100
Facility K	600	-	1,350	375	-	-	200
Facility L	1,400	450	1,400	500	-	500	-
Facility M	650	250	800	300	-	300	300
Facility N	-	500	800	-	-	600	500
Facility O	600	400	-	550	100	-	-
Facility P	600	400	-	550	100	-	-
Facility Q	-	960	2,500	990	-	-	-
Facility R	400	300	700	350	-	-	-
Facility S	570	200	-	380	-	-	200
Facility T	-	200	-	200	-	200	-
Facility U	-	300	450	-	-	300	-
Facility V	300	300	-	-	-	400	-
SUMMARY MEASURES							
Average	580	387	1,186	412	120	473	297
Highest	1,400	960	2,500	990	280	1,200	500
Lowest	30	200	450	200	100	200	100
No. pts seeing staff	259	302	228	295	59	191	106
Average times Pts. seen staff	9	5	8	12	12	12	8



APPENDIX 4: COMPARISON OF DRUG DISPENSE FOR OI DRUGS BETWEEN PRIVATE AND CORPORATE COMPANIES

Drug name	private(100)		corporate(215)		p value
	Freq.	true %	Freq.		
Albendazole tablets	32	32%	57	27%	0.361
Amitriptyline tablets	5	5%	28	13%	0.031
Amoxicillin tablets	10	10%	55	26%	0.001
Ampiclox capsules	3	3%	20	9%	0.053
Ampicillin I/V	3	3%	9	4%	0.661
Antimalarials	35	35%	74	34%	0.862
Calamine Lotion	1	1%	14	7%	0.024
Ceftriaxone	5	5%	9	4%	0.684
Cetirizine	14	14%	35	16%	0.647
Ciprofloxacin tab	8	8%	55	26%	0.0002
Cloxacillin capsules	2	2%	9	4%	0.359
Cold cap capsules	8	8%	44	20%	0.007
Cotrimoxazole tablets	86	86%	208	97%	0.017
Cough expectorant	1	1%	17	8%	0.013
Dexamethazone tablets	0	0%	19	9%	0.002
Dextrose I/V	9	9%	13	6%	0.33
Diazepam tablets	2	2%	9	4%	0.359
Diclofenac tablets	9	9%	73	34%	<0.0001
Doxycycline Capsules	0	0%	23	11%	0.0006
Duocotexin tablets	5	5%	6	3%	0.377
Ecodax	1	1%	9	4%	0.149
Erythromycin tablets	1	1%	36	17%	<0.0001
Fluconazole tablets	8	8%	34	16%	0.053
Folic tablets	5	5%	55	26%	<0.0001
Gentamycin I/V	2	2%	22	10%	0.012
Hydrocortisone	2	2%	13	6%	0.119
Ibuprofen tablets	11	11%	78	36%	<0.0001
Iv fluid	2	2%	10	5%	0.208
Ketoconazole tablets	8	8%	26	12%	0.286
Loratidine tablets	25	25%	14	7%	<0.0001
Mabendazole tablets	0	0%	11	5%	0.023
Magnesium Trisillicate tablets	5	5%	45	21%	0.0003
Metakelfin tablets	0	0%	12	6%	0.721
Metoclopramide tablets	5	5%	4	2%	0.143
Metronidazole tablets	10	10%	44	20%	0.027



Drug name	private(100)		corporate(215)		p value
	Freq.	true %	Freq.		
Multivitamin tablets	28	28%	96	45%	0.004
Nystatin tablets	1	1%	11	5%	0.081
Omeprazole tablets	2	2%	39	18%	0.0001
ORS	0	0%	10	5%	0.023
Paracetamol tablets	24	24%	104	48%	0.455
Pelox tablets	0	0%	10	5%	0.023
Piriton tablets	2	2%	28	13%	0.002
Prednisolone tablets	0	0%	12	6%	0.012
Pyridoxine tablets	4	4%	6	3%	0.645
Tetracycline tablets	1	1%	12	6%	0.044
VitB tablets	3	3%	72	33%	<0.0001
VitC tablets	2	2%	33	15%	0.0006
Xpen tablets	1	1%	12	6%	0.044
Other	39	39%	69	32%	0.223
Total	448		1,721		

A P value <0.05 was considered statistically different and was obtained from the test for difference in proportions

The table above shows significant differences ($p < 0.05$) between the frequency of drug disposal in the Private for profit clinics versus the corporate clinics. Apart from the disposal of loratidine tablets which was prescribed 3 times higher in the private clinic compared to the corporate clinic, the level of drug dispensing was averagely higher in the corporate clinics.