

**COST AND SUSTAINABILITY ASSESSMENT
OF THE AIDS PILOT CENTER
SUPPORTED BY USAID AIDS/STDs
PREVENTION AND CONTROL PROJECT
NO. 511-608**

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EXECUTIVE SUMMARY

The purpose of this assessment is to evaluate several management issues at the AIDS Pilot Center in La Paz which impact on the sustainability of activities carried out at the clinic under the USAID AIDS/STDs Prevention and Control Project No. 511-0608. The assessment examines patient flow and its impact on income and efficient use of resources, service which includes the frequency of lab tests and patient satisfaction, cost recovery which includes percentages of fixed and variable costs covered with income from health card sales and lab tests, and some suggestions or options for developing a more sustainable program.

The methodology used consisted of a review of documentation, interviews with clinic and project personnel, and patients. A random sample was drawn of thirty-five patients to determine average number of visits for given time periods, frequency of exams, and general trends of attendance. By determining the average number of visits per month per individual and comparing that with the average number of monthly consultations in the clinic, it was possible to estimate the number of individuals being seen. Income was obtained from the actual figures registered in the clinic for health card purchases and cost per visit was calculated using average number of visits per patient for specific time frames.

This assessment found that although patient flow is relatively steady and that doctors have an estimated 600 consultations per week, in practice the pattern of visits is very irregular. The sample indicated that the trend is for a patient to buy a health card¹, have an average of 2.87 visits per month during a three consecutive month period, go a month or so without visits, and then to once again begin regular visits. In one example the month with the highest number of visits is compared to the month with the lowest number of visits for that client. The average for the highest month is 3.857 monthly visits per patient, while the average for the lowest month is .743 visits. Since patient flow remains constant, the implication is that more than 600 individuals are seen over the course of the year. This study estimates that number to be on the order of 800.

The total monthly cost of operating the clinic is estimated at Bs 52,437.38. Variable costs sum Bs 33,468 or 63.8% of the total whereas fixed costs are Bs 18,969.31 or 36.2% of the total. USAID contributions at Bs 31,907.38 constitute 60.8% of the total while those of the National Secretariat at Bs 20,530 make up the other 39.2%. The monthly cost for lab tests is estimated at Bs 13,539.96. Actual income from the sale of health cards totalled Bs 85,716 for the thirteen month period from January 1994 to January 1995, an average of Bs 6,593 per month, while fees collected for VDRL tests averaged Bs 2,031 per month. This

¹These cost Bs 36 and are valid for three months.



income went to the National Secretariat and was not reinvested in clinic activities. Income from these sources would have covered 16.4% of total costs, 27% of variable costs, and 25.8% of the USAID contribution. If the program is to be sustainable after the USAID project is completed, additional sources of income must be identified and a sustainability strategy developed.

Project personnel should work with the National Secretariat of Health to develop a sustainability strategy. Some of the issues which should be addressed during the development of that strategy include 1) reinvestment of income obtained from the sale of cards into the clinic; 2) increasing charges, especially for lab tests; 3) decreasing the number of required visits; 4) limiting the use of a health card to the time period for which it is valid; 5) identifying other sources of income; 6) cutting operating costs at the clinic by improving efficiency; 7) collaborating with other donors. These options are discussed in the report under Sustainability Issues.

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I. INTRODUCTION

The purpose of this assessment is to evaluate several management issues at the AIDS Pilot Center in La Paz which impact on the sustainability of activities carried out at the clinic under the USAID AIDS/STDs Prevention and Control Project No. 511-0608. Issues addressed in this assessment include patient flow and its impact on income and efficient use of resources, service which includes the frequency of lab tests and patient satisfaction, cost recovery which includes percentages of fixed and variable costs covered, and some suggestions for developing a sustainability strategy. These issues were mentioned in the Midterm Evaluation of the Project, and will be useful to guide activities proposed under the Project Amendment so that activities may be extended to other cities. The assessment was carried out by the USAID/Bolivia Evaluation and Monitoring Specialist from January 26 to February 7, 1995.

The methodology used in the assessment consisted of a review of documentation, interviews with clinic and project personnel, and with patients. A random sample was drawn of thirty-five patients to determine average number of visits for given time periods, frequency of exams, and general trends of attendance at the clinic. Dates of visits and exams over the last eight months were noted, and subsequently these data were expanded based on estimated numbers of individual patients. By determining the average number of visits per month per individual and comparing that with the average number of monthly consultations in the clinic, it was possible to estimate the number of individuals being seen. Income was obtained by looking at the actual figures corresponding to health card purchases and cost per visit was calculated by looking at average number of visits per patient for different time frames. Cost data were gathered from the project accountant housed in the Community and Child Health Project, the administrator at the Pilot Center, and the biochemist who supplied information on the costs of individual exams and estimated the frequency of the three different tests for syphilis.¹

Comparing income and recurring costs provides insight on the cost recovery issue. Gross income from the sale of health cards was compared to total costs of operating the program, those financed by the National Secretariat of Health and the Project, and to only those financed by the Project. Comparing income to variable costs such as lab tests, is an important factor to establish whether or not current charges are sufficient.

Cost analysis feeds into the design of a sustainability strategy to allow activities to continue once the project is completed in

¹R.P.R., V.D.R.L., and FTA-ABS.

1998. Some of the operational costs will probably continue to be funded by the Secretariat of Health. Others may be picked up by donors or by increased usage charges. One issue to be addressed under sustainability is whether income currently collected by the clinic will be available for financing its operations. The current practice is that all funds collected are turned over to the Secretariat where a third are used for production bonuses, and the Secretariat does not return money to the clinic outside of its contribution to providing certain personnel, some supplies, space and utilities. The analyses in this report view the AIDS program in the Pilot Center as a cost center, and report on the proportion of its costs which are being covered by income generated by its users. Suggestions for higher cost recovery are offered and their estimated impacts are discussed.

II. PATIENT FLOW AND ITS IMPACT ON INCOME

Clinic personnel interviewed during this assessment confirmed that patient flow is relatively steady and that doctors see an estimated 600 patients per week or about 2,400 in a given month. Patients pay Bs 36 for health cards which are valid for three months and entitle them to weekly visits during that period. These cards are stamped weekly after the visits. Valid cards with up-to-date stamps are required by law for commercial sex workers (CSWs) who can be arrested without them. A total of 2,381 cards were sold during the thirteen month period from January 1994 through January 1995, generating income of Bs 85,716.²

In theory, 600 individuals would purchase 2,400 cards during a twelve month period, generating Bs 86,400 in income, and if each had an average of four visits per month, the cost per visit would be Bs 3. In practice the pattern of visits is more irregular. The sample indicated that the trend is for patients to buy a card, have an average of 2.87 visits during a consecutive three month period, go a month or so without visits, and then to once again begin regular visits.³ This high variance is illustrated in Table 1. In one example the month with the highest number of visits for a client is compared to the month with the lowest number of visits for that client and is used to calculate the average number of visits for the sample. The average number for the highest month is 3.857 visits per month, over five times the average for the lowest month, of .743 or less than one visit during the month per patient in the sample. Frequency of visits is presented for the sample in Tables 2 and 3. The magnitude of this variance was not reflected in the number of consultations per month nor in the number of cards sold. The implication is

²See Table 10.

³See Tables 1 and 10.

that more than 600 individuals are seen during a month.

Estimates of the number of individuals⁴ seen during a month are presented in Tables 1 and 4. The estimated number of monthly consultations, 2,400, is divided by the average number of visits for a specific time frame. Once again high variance is noted. Given trends noticed on case history cards, i.e. a pattern of regular visits followed by a month or so with visits of one or zero, as well as the number of card purchases, at least 800 individuals are seen over the course of a year, and they probably purchase cards three times a year.⁵ The yearly income generated by these purchases would be Bs 86,400, identical to that generated by 600 individuals purchasing four cards a year. Clinic personnel reported that while a card is valid until a certain date, in practice, if a patient has only used the card for a month, then not visited the clinic, and returns after the card has expired, he/she is allowed to use the expired card until twelve visits have been completed.

Patient flows are regulated by assigning appointments in the morning or afternoon on specific days. Staff estimate that 90% of the patients show up on schedule. When they arrive, they receive a number and are seen on a first-come-first-serve basis. Waiting periods vary from fifteen to forty minutes depending on time of arrival and on whether the patient has had lab tests and is waiting for the results. The average length of a consultation with the doctor is from 5-7 minutes. Hours for appointments are from 8:30 to 12:00 in the mornings and 2:00 to 5:30 in the afternoons.

Staff to handle patient appointments consist of three part-time doctors⁶, the USAID project doctor who fills in as-needed, four part-time auxiliary nurses,⁷ four university graduate nurses, the program director who also fills in as-needed. A part-time physician, according to Secretariat regulations, has a four hour work day of which three hours are to be spent seeing patients, and the fourth hour in preparation or training. During the morning shift once doctor works from 8:30 to 11:30 and the other works from 9:00 to 12:00. In the afternoon the part time doctor

⁴Individuals as opposed to the number of consultations.

⁵Card purchases are not tracked by name, but given irregular attendance patterns, three purchases a year seems reasonable.

⁶All doctors are trained gynecologists. Two work in the mornings and one in the afternoon.

⁷There are five auxiliary nurses listed on the payroll, but only four work in the program on a given day. The fifth rotates between the STD clinic and the vaccination program.

sees patients from 2:30 to 5:30 in the afternoon, and is assisted by the full time physician who begins consultations at 2:00 and finishes at 5:00.⁸ Assuming two doctors in the morning and afternoon, this translates into 60 hours a week, or 6 minutes per patient if 600 patients are seen, or about 5 minutes per patient if 700 patients are seen.

III. SERVICES AND THEIR COSTS

Over the past year this clinic has provided four kinds of service to its patients. These include examinations by trained gynecologists, lab tests frequently with results in a matter of minutes, limited pharmaceutical facilities,⁹ and training.¹⁰ Most of these services are included in the cost of the health card. Additional charges are made for some of the lab tests, especially when they are not done at the clinic.

Internal examinations are typically conducted during her/his regularly scheduled appointments. There is no additional charge for these exams. Physicians examine the patients and look for signs of STDs; if symptoms are present, additional lab tests may be ordered. On the first visit a medical history is recorded for each patient.

Lab tests are administered according to specific schedules. These tests are 1) gonorrhea, primary and complete, 2) FA Chlamydia, 3) RPR, 4) RPR+FTA-ABS, 4) VDRL, 5) gram stain, 6) fresh slide exam, 7) HIV, 8) pap smear.¹¹ Primary gonorrhea, gram stain, fresh slide, and FA Chlamydia are done every two months. In about 20% of the cases, when the patient tests positive in the primary gonorrhea, a complete test or series of cultures is carried out and this doubles the cost. Three tests for syphilis are used: RPR, VDRL, and RPR+FTA-ABS. RPR and VDRL are each administered to all patients once every three months. If a patient tests positive (about 10%), then the RPR+FTA-ABS is done. The cost of VDRL (about Bs 1.78) is less than that of RPR (Bs 3.32); however, the disadvantage of using VDRL, is that once a batch is opened, it must be used within a week. VDRL tests on

⁸The director reported that patients are seen for three and a half hours in both the morning and the afternoon.

⁹A limited variety of medicines are sold at cost in the clinic. Usually these are used to treat the specific STDs identified by the lab tests. They are prepackaged with the correct number for the treatment and are sold at cost.

¹⁰Training is not currently being carried out, but has been in the past.

¹¹See Table 11 for the cost of each test.

done on-site in the lab at the clinic and a charge of Bs 10 is levied. A patient who tests positive is retested in six weeks. Tests for HIV are carried out every six months. The patient is given a prescription at the Pilot Center, but goes to another clinic (ILASA) in Miraflores to have the test done, and is charged there. Pap smears are given on the premises every 12 months.

The quarterly costs per patient of the exams administered at the Pilot Center are listed on Table 11. They range from Bs 42.17 to Bs 73.96, depending on whether or not results on a given test are positive so that more follow-up tests are needed. These costs do not include salaries of lab personnel. The monthly costs of lab tests to the program were calculated using an average of 600 patients a month.¹² Under this scenario the monthly average cost for tests administered on-site is Bs 13,539.96, without including the salaries of the lab technicians or biochemist. The sample was used to calculate the number of times a patient was tested for syphilis each year. The number of tests per patient in a specific time frame was annualized and these were used to determine the average for the sample. If patients were keeping regular appointments, one would expect the average number of tests per year to be four. However, as Table 8 demonstrates, they range from 1.76 to 2.49¹³. Using income received for VDRL tests during 1994¹⁴ to estimate the total number of tests administered, the result is 2,470 tests. This would be approximately the equivalent of 600 patients receiving tests quarterly, or 800 patients receiving tests three times a year.

Patients interviewed expressed satisfaction with the quality of the services. Results from tests for syphilis and chlamydia are available on the spot. Results from tests for gonorrhea are available in forty-eight hours. One person interviewed expressed a desire for more frequent tests and said she would be willing to pay.

Limited pharmaceutical facilities are available at the clinic. These consist of medicines packaged to treat the diseases most often diagnosed. They are sold at cost. A number of clients recommended that more drugs be stocked, including birth control pills.

¹²Although more individuals are treated, their attendance is irregular, and 600 patients each month is the equivalent of 800 patients three quarters of the year.

¹³Averages may be skewed because some patients may have a quarter without visits, and accordingly, without tests.

¹⁴Assuming Bs 10 per test.

Courses are not currently being offered, although they have been during the last year. Training is on-going and includes developing negotiation skills to convince clients to use condoms. It is currently in a transition/planning stage as trainers are working accommodate content materials and schedules to the needs of the women. A full-time trainer is paid by the Secretariat to coordinate these activities. There is no additional charge to the patients for training.

IV. COST RECOVERY

Cost data were collected from the project accountant at the Community and Child Health Project, which handles the HIV/STD project, from the administrator at the Pilot Center, and from other professional personnel at the center, including the biochemist who is in charge of the lab. These costs have been listed by who covers them (see Tables 5 and 6), and subsequently classified as fixed and variable (see Table 7). Fixed costs were defined as minimum personnel, services, supplies and materials necessary for the clinic to provide these services¹⁵, costs pertaining to building maintenance, office supplies, and miscellaneous. Variable costs include salaries to personnel employed to handle increased number of patients, including additional doctors, nurses, auxiliaries, lab technicians, trainers, costs of lab tests, disposable materials, medical supplies, office and educational supplies.

Fixed and variable costs are summarized on Table 7. The total monthly cost of operating the Pilot Center clinic is Bs 52,437.38.¹⁶ Variable costs sum Bs 33,468 or 63.8% of the total, whereas fixed costs are Bs 18,969.31 which is 36.2% of total costs. Contributions from USAID and the National Secretariat of Health¹⁷ are reported in Tables 5 and 6 respectively. USAID contributions at Bs 31,907.38 constitute 60.8% of the total while those of the Secretariat, Bs 20,530 are 39.2% of total costs. The monthly cost of lab tests, estimated at Bs 13,539.96¹⁸, is

¹⁵Fixed costs include salaries and benefits for the director, one full-time doctor, one biochemist, one nurse and one lab technician.

¹⁶Costs were collected for a typical month. Both variable costs and income tend to decrease in months that have extended holidays such as February with Carnival, April with Holy Week, and December with Christmas.

¹⁷The National Secretariat of Health is referred to on the tables as the Ministry of Health in this assessment.

¹⁸This does not include salaries of lab personnel.

40% of variable costs, 42.4% of the USAID contribution, and 25.8% of total costs.

Table 10 presents actual income from the sale of health cards and estimated income from charges for VDRL tests over the thirteen month period from January 1994 to January 1995. It also indicates what proportion of total costs, USAID contributions, and variable costs, would have been covered by total estimated income, had this income returned to the clinic. Estimates show that income covers 16.4% of total costs, 27% of variable costs, and 25.8% of the USAID contribution. Estimated monthly income from VDRL exams during the period averaged Bs 2,031 which only covers 15% of the cost of Bs 13,539.96. To cover estimated variable costs at the current patient level, income would have to increase by 3.7 times; to cover the current USAID contribution, it would need to be 3.9 times greater; to cover half of total costs (a goal mentioned in the project paper amendment) it would have to increase threefold¹⁹. Funds collected from lab charges would have to be 6.7 times greater to cover lab test costs.

Bookkeeping procedures are fairly well institutionalized in the clinic and conform to regulations of the National Secretariat of Health. Accordingly, the accuracy of recorded income figures can be trusted. Patients buy health cards from the clinic's cashier which is located in a section of the building separate from the consultation section. Funds collected are recorded in a log book, and purchasers receive official receipts. The log book is divided into sections according to sources of income, so that funds received from card purchases are recorded in one section whereas those received for VDRL tests are included in another. The clinic is a regional office from which eight different disease control programs are operated including TB, polio, cholera, malaria, yellow fever, leishmaniasis, as well as AIDS/stds. In addition, a vaccination program is run. Income from each of these programs is recorded in the book. The book is closed monthly. Cash collected is deposited in the bank within twenty-four hours after it comes in. The clinic's cashier passes the money to one of two regional cashiers who are responsible for its deposit. Three internal auditors are assigned to the regional clinic; their offices are in Miraflores.

V. SUSTAINABILITY ISSUES

If the program is to be sustainable after the USAID project is completed, additional sources of income must be identified and a sustainability strategy developed. It is expected that the support provided by the Ministry of Health will continue after the project completion date. However, the portion of costs being provided by USAID will need to be covered, or, from another

¹⁹Variable costs are more than half of total costs.

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perspective, variable costs are only about 5% above the USAID contribution should be covered to attain sustainability.

Developing a sustainability strategy early on during the project extension is imperative. This process should include dialogue with the National Secretariat of Health, to discuss issues identified in this assessment and various options. Some of the issues which should be addressed during the development process are outlined below.

1. Reinvestment of income obtained from the sale of health cards into the clinic. This would provide income to cover about 27% of variable costs.²⁰ The approximately 33% of card income used to pay production bonuses could be used for that salary component of employees at the clinic.
2. Lab test costs are the largest component of variable costs, and charges levied for VDRL tests only cover 15% of these costs. Project personnel should explore the possibility of raising charges for lab tests. Were patients to be charged Bs 36 for a 3-month health card and the full costs of the tests, this would result in income of Bs 13,539.96 a month, which, if added to health card income would total Bs 20,133.50, sufficient to cover 60% of variable costs. However, it would also mean increased charges to the patients of from 89%-139%²¹.
3. Maintaining the health card charge at Bs 36 for three months, but only requiring visits every two weeks would increase income by permitting greater numbers of individuals to be seen. If the number of individuals seen were to increase to 1,200, income from that source could increase by 50% to Bs 10,800 a

²⁰Currently these funds are transferred to the National Secretariat where about thirty-three percent are used to pay salary bonuses. Bonuses are provided to personnel to compensate for specialized training, specific positions, seniority, etc. It is estimated that bonuses increase base pay at the clinic from about 6% to 91%.

²¹This scenario assumes a patient currently pays quarterly Bs 36 for a health card and Bs 10 for a VDRL test. Under the new pricing system the patient would continue to pay Bs 36 for the health card and from Bs 42.17 to Bs 73.96 additional for a lab test. See Table 11.

month²². If, in addition, patients were required to pay the full costs of lab tests, approximately Bs 24,339 would be generated, enough to cover about 71% of variable costs.²³

4. Limit the use of a health card to the time period for which it is valid. This might well encourage patients to visit regularly because they would understand that they had prepaid for services.
5. Look for other sources of income. Currently CSWs pay Bs 40 every three months in matriculation fees for a card from the police. If 75% of this income were to be used for the STD program, that would increase income by an estimated Bs 6000 to Bs 12,594 which would cover about 36% of variable costs. Owners of establishments where the CSWs work might also be asked to contribute to health costs.

Project personnel, along with the Secretariat of Health, should study all of these options and also study ways to lower operational costs of the clinic. Sustainability will probably require using suggestions from a number of the options listed, i.e. raising lab charges, but continuing a subsidies; decreasing the number of required clinic visits, and identifying other sources of income. Other donors could also be identified and approached.

A final aspect is that beneficiaries of this program number far more than the CSWs who visit the clinic. A multiplier factor operates since every partner of the CSWs, and their partners, in turn, benefit from this program. It is estimated that it costs approximately Bs 629,248 or US\$ 133,883 a year to operate the Pilot Center. If one calculates that each of the approximately 800 CSWs has an average of ten partners a week, then that is a cost of Bs 71.50 or US\$ 15.21 per person per year, and with the multiplier factor, the cost to beneficiary ratio decreases more.

²²This is calculated by assuming that 1,200 women would buy cards 3 times a year. Monthly income = $(1,200 \times 3 \times 36)/12$.

²³Patients could be seen during current time slots without hiring another physician. Another lab technician would be needed to process additional tests at a cost of approximately Bs 676 a month.

ANNEX A
TABLES

1. AVERAGE NUMBER OF MONTHLY VISITS & COST PER VISIT

	4th Qtr. CY/94	Last 4 months CY/94	3 consec. months w/ highest # visits from 6/94-1/95	3 consec. months w/ lowest # visits from 6/94-1/95 ²	1 month w/ highest number of visits per patient ³	1 month w/ lowest number of visits per patient ⁴
Avg. # monthly visits per individual	2.124	2.179	2.87	1.77	3.857	.743
Total # estimated individuals ⁵ seen per month	1,130	1,101	836	1,356	622	3,230
Cost per visit ⁶	Bs 5.65	Bs 5.51	Bs 4.18	Bs 6.78	Bs 3.11	Bs 16.15

¹Using case histories, a three month period with the highest number of visits per patient was selected. A monthly average (based on these three months) was calculated for each patient and these in turn were averaged to determine the monthly average for the sample.

²Uses case histories to determine the 3 month period in which each patient had fewest visits. Monthly averages for each patient are calculated and these are subsequently used to determine the monthly averages for the sample.

³Case histories are used to determine the month with the highest number of visits for each patient, and these are used to calculate the monthly average for the sample.

⁴Case histories are used to determine the month with the lowest number of visits for each patient. Total number of visits for the lowest month for each patient are summed and used to calculate the average for all patients in the sample.

⁵To estimate patients seen in a month, 2,400 is divided by the average number of visits per person for the time period.

⁶Assumes that each patient buys a health card which costs Bs 36 and is valid for three months. The average number of monthly visits is multiplied by three and divided into Bs 36.

2. FREQUENCY OF AVERAGE NUMBER OF MONTHLY VISITS FOR SAMPLE¹

	4th Qtr. CY/94	Last 4 months CY/94	3 consec. months w/ highest # visits from 6/94-1/95 ²	3 consec. months w/ lowest # visits from 6/94-1/95 ³
Average no. monthly visits	No. of Patients	No. of Patients	No. of Patients	No. of Patients
< 1	2	2	0	5
1 to < 2	12	13	4	16
2 to < 3	14	12	13	10
3 to < 4	6	7	10	3
4 to > 4	1	1	8	1

¹Sample size: 35 patients

²Using case histories, a three month period with the highest number of visits per patient was selected. A monthly average (based on these three months) was calculated for each patient and these in turn were averaged to determine the monthly average for the sample.

³Using case histories, a 3 month period with the lowest number of visits for the patient was selected. A monthly average (based on these three months) was calculated for each patient and these in turn were averaged to determine the monthly average for the sample.

**3. FREQUENCY OF NUMBER OF MONTHLY
VISITS FOR SAMPLE¹
USING HIGHEST AND LOWEST MONTHS**

	1 Month with Highest Number of Visits per Patient from 6/94-1/95²	1 Month with Lowest Number of Visits per Patient from 6/94-1/95³
Number of monthly visits	No. of Patients	No. of Patients
< 1	0	18
1 to < 2	0	11
2 to < 3	5	4
3 to < 4	6	1
4 to > 4	24	1

¹Sample size: 35 patients

²Case histories are used to determine the month with the highest number of visits for each patient, and these are used to calculate the monthly average for the sample.

³Case histories are used to determine the month with the lowest number of visits for each patient. Total number of visits for the lowest month for each patient are summed and used to calculate the average for the sample.

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**4. ESTIMATED NO. OF INDIVIDUAL PATIENTS SEEN PER MONTH
AND CORRESPONDING INCOME FROM CARDS¹**

	4th Qtr. CY/94	Last 4 months CY/94	3 consec. months w/ highest number of visits from 6/94-1/95	3 consec. months w/ lowest number of visits from 6/94- 1/95	1 month w/ highest number of visits per patient	1 month w/ lowest number of visits per patient
AVG. NO. OF INDIVIDUALS SEEN PER MONTH	1,130	1,101	836	1,355	620	3,230
MONTHLY INCOME FROM CARDS	Bs 10,170	Bs 9,909	Bs 7,524	Bs12,195	Bs 5,580	Bs29,070

¹Number of individuals estimated given an average of 600 consultations a week and 2,400 per month. 2,400 was divided by the average number of visits in sample for each time period. See Table 1. Income was calculated using the assumption that each individual purchases 3 cards per year; i.e. estimated number of patients x 36 x 3. Three cards purchased per year seems reasonable given the high variation in number of visits. See Tables 1-3.

5. MONTHLY COSTS PAID BY USAID PROJECT (in bolivianos)

I. SALARIES AND BENEFITS¹

1 doctor (full time)	4,550.00
2 nurses (part time) 1114.72 ea. ²	2,415.22
1 biochemist (full time)	3,671.42
1 lab technician (part time)	676.28
1 lab technician (contracted part time)	524.00
Transportation	460.00
Total	12,296.92

II. LAB EXAMS³

Gonorrhea (primary) ea. 18.84 ⁴	4,521.60
Gonorrhea (complete) ⁵	2,260.00
FA Chlamydia ⁶ ea. 9.42	2,826.00
RPR, ⁷ ea. 3.32	665.94
VDRL ea. 1.775	235.50
FTA-ABS ea. 10.81 ⁸	216.20
Gram Stain ea. 4.70 ⁹	1,401.00
Fresh slide exam ¹⁰ ea. 4.70	1,401.00
Total	13,539.96

¹ Adjusted to include Christmas bonus.

² One works morning shift while the other works afternoon shift.

³ An average of 600 patients was used to estimate monthly costs of exams. However, this may be underestimated because over the course of a year the clinic sees more than 600 patients, since patients tend to visit regularly during the quarter for which their card is valid and then to drop out for several months before returning. However, patients who drop out are replaced by others, and accordingly, in a given month, the patient flow remains regular. It is estimated that from 800 to 1,100 individuals are seen over the course of a year. Exchange rate used to estimate boliviano costs is US\$1 = Bs4.71

⁴ Given every two months. Monthly cost estimated at $18.84/2 \times 600 \times .8$. For about 80% of the clients the primary culture is sufficient. 20% test positive and need the complete culture.

⁵ Requires additional cultures. Given to patients who test positive, about 20% of those given primary test. Accordingly, it is also carried out once every two months. $37.68/2 \times 600 \times 2$.

⁶ Given every two months. Monthly cost estimated at $9.42/2 \times 600$.

⁷ RPR Tests for syphilis; given approximately every 3 months. Estimated monthly cost $3.3297/3 \times 600$. All patients in addition receive VDRL tests for which they pay Bs10. Those with positive RPR tests receive FTA-ABS.

⁸ About 10% of the patients test positive on the RPR and are given the FTA-ABS in addition. Cost = $10.81/3 \times 600 \times .1$.

⁹ Administered every 2 months. Cost = $4.70/2 \times 600$.

¹⁰ Administered every 8 weeks. Monthly cost estimated at $4.70/2 \times 600$.

7. FIXED AND VARIABLE COSTS PAID BY USAID AND MINISTRY¹

FIXED COSTS

Staff & Benefits	13,768.31
Utilities & Repairs	1,417.00
Travel	2,117.00
Miscellaneous	1,467.00
Office Supplies	200.00

Total 18,969.31

VARIABLE COSTS

Staff & Benefits	12,924.61
Lab Tests	13,539.46 ²
Disposable Materials	6,071.00
Medical Supplies	400.00
Office & Educational Supplies	533.00

Total 33,468.07

GRAND TOTAL 52,437.38

¹Fixed costs are defined as minimal costs necessary to run the program whereas variable costs vary according to the number of patients seen during a given period. Fixed staff costs include one director, one full-time doctor, one biochemist, one nurse, one secretary, one lab technician and benefits such as transportation.

²Calculated based on 600 patients seen each month. The probable number of individuals is closer to 800, but they tend not to come every month. 800 patients with regular visits for the equivalent of 9 months a year would result in income and costs equal to 600 patients attending 12 months a year.

8. AVERAGE NO. SYPHILIS TESTS PER WOMAN PER YEAR¹

TIME PERIOD	LAST 8 MONTHS CY 94 (6/94-12/94)	4TH QTR. CY94	LAST 4 MONTHS CY94	LAST 4 MONTHS (10/94-1/95)
AVG. NO. TESTS PER YEAR ²	1.76	2.17	2.49	1.89

**9. ESTIMATES OF MONTHLY INCOME FROM VDRL TESTS
BY ESTIMATES OF PATIENT FLOW³**

ESTIMATED NO. OF INDIVIDUAL PATIENTS SEEN	ESTIMATED MONTHLY INCOME ⁴
1,130	Bs 3,766
1,101	Bs 3,670
836	Bs 2,787
1,356	Bs 4,520
622	Bs 2,073
3,320	Bs 10,767

¹Calculated using sample of 35. Uses various time frames as identified in table.

² Number of total visits was summed and divided by n=35 and then annualized.

³Estimated patient flows identified in table 1.

⁴Assumes each individual is tested quarterly and that cost is Bs 10 per test. Estimated income = # patients x Bs 10/3.

III. DISPOSABLE MATERIALS

	6,071.00
Total	6,071.00
GRAND TOTAL	31,907.38

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6. MONTHLY COSTS PAID BY MINISTRY OF HEALTH (in bolivianos)

I. SALARIES AND BENEFITS¹

3 doctors (half time) ² 1,200 ea.	3,900.00
2 nurses w/ univ. degree (part time) ³ 1050 ea.	2,275.00
4 nurses aids (part time) ⁴ 618 ea.	2,678.00
Director of Program (full time)	2,383.00
Trainer ⁵ (full time)	2,340.00
Secretary	670.00
Transportation	150.00

Total 14,396.00

II. UTILITIES AND REPAIRS 1,417.00

III. SUPPLIES

Office and Educational	733.00
Medical	400.00

Total 1,133.00

IV. TRAVEL 2,117.00

V. MISCELLANEOUS

Snacks	400.00
Cleaning	580.00
Uniforms	417.00
Communication	70.00

Total 1,467.00

GRAND TOTAL 20,530.00

¹Adjusted to include benefits.

²Half-time as defined by the Ministry of Health means 3 hours a day of patient consultant and using the fourth hour for study or preparation. Two doctors work in the morning and one in the afternoon. There should be an additional half time doctor in the afternoon. Currently, the project doctor fills in, but his duties are coordination and training personnel at other clinics rather than seeing patients. One of the half-time physicians currently earn Bs 1,200 per month. Two have salaries of Bs 712 each, but expect to present documentation showing their certification in gynecology to the Ministry within the next few months so that their salaries will also increase to Bs 1,200 a month paid retroactively to the first of the year.

³Part time is defined by the Ministry as 4 hours of work and 2 hours for study. One nurse works in the morning and one in the afternoon.

⁴Part time as defined by the Ministry is the same for aids, 6 hours a day, of which 4 are spent working with patients. 2 aids work in the morning and three in the afternoon.

⁵The trainer supervises and sets up courses.

10. COST COVERAGE WITH INCOME FROM HEALTH CARDS AND LAB CHARGES

MONTH	TOTAL INCOME FROM HEALTH CARDS ¹	TOTAL NUMBER CLIENTS PURCHASING CARDS	TOTAL INCOME FROM LAB CHARGES ²	PERCENT OF TOTAL COSTS COVERED W/ LAB & CARD INCOME	PERCENT OF USAID COSTS COVERED W/ LAB & CARD INCOME	PERCENT OF TOTAL VARIABLE COSTS COVERED W/ LAB & CARD INCOME
JAN '95	7,560	210	2,330	18.9	31.0	29.6
DEC '94	7,128	198	2,190	17.8	29.2	27.8
NOV	7,560	210	2,330	18.9	31.0	29.6
OCT	6,624	184	2,040	16.5	27.2	25.9
SEPT	6,336	176	1,950	15.8	26.0	24.8
AUG	7,596	211	2,340	18.9	31.1	29.7
JULY	7,560	210	2,330	18.9	31.0	29.6
JUNE	7,020	195	2,160	17.5	28.8	27.4
MAY	6,048	168	1,860	15.1	24.8	23.6
APR	5,148	143	1,590	12.8	21.1	20.1
MAR	6,444	179	1,990	16.1	26.4	25.2
FEB	5,148	143	1,590	12.8	21.1	20.1
JAN	5,544	154	1,710	13.8	22.7	21.6
TOTAL	85,716	2,381	26,410	16.4	27.0	25.8

¹Actual income received as officially recorded. All income is in bolivianos.

²Income collected for charges in Jan. '95 is actual. For all other months it is estimated. All income is in bolivianos.

**11. COSTS OF LAB TESTS PER PATIENT
OVER 3 MONTH PERIOD
(in bolivianos)**

LOW ESTIMATE		HIGH ESTIMATE	
GONORRHEA (primary)	18.84	(complete)	37.68
CHLAMYDIA	9.42		9.42
RPR	3.33	+ FTA-ABS	14.13 ¹
VDRL	1.18		1.18 ²
Gram Stain	4.70		4.70
Fresh Slide	4.70		4.70
Total	42.17		73.96

¹FTA-ABS is given when the patient tests positive on RPR.

²VDRL is required by the Ministry of Health of all patients who are charged Bs 10 for each test. Tests are given once every 3 months.

ANNEX B

PERSONS AND INSTITUTIONS CONTACTED

PERSONS AND INSTITUTIONS CONTACTED

CENTRO PILOTO

Lic. Rita Condorri, Técnico de Laboratorio.
Dr. Eduardo Negrón, Jefe Programa.
Sra. Zaida Tavel, Secretaria.
Lic. Freddy Tinajeros, bioquímico.
Sr. Constantino Vargas, Administrador.
Dr. Juan Vega, ginecólogo.
Dra. Ana Maria Wayar, capacitación.
Lic. Telva Zapata, Supervisión Enfermería.

PROGRAMA DE CONTROL DE ETS/SIDA

Fabio Ortega, Gerente Administrativo del Proyecto.

USAID/BOLIVIA

Paul Ehmer, Chief of Health and Human Resources.
Isabel Stout, Project Coordinator.