Evaluation of the USAID Support for HIV Prevention in Mali from 2000 to 2010

MEASURE Evaluation

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ABBREVIATIONS

AIDS	Acquired immune deficiency syndrome
ANC	Antenatal care
ARCAD-SIDA	Association de recherche et communication et d'accompagnement au domicile des personnes atteintes du VIH et avec le SIDA
ART	Antiretro viral therapy
ARV	Antiretroviral
ASACO	Association de santé communautaire
BCC	Behavior change communication
CAG	Centrale d'Achat des Génériques
CBJ	Congressional Budget Justification
CDC	Centers for Disease Control and Prevention
CESAC	Centre d'écoute, de soins, d'animation, et de conseil pour les personnes vivant avec le VIH/SIDA
CSCOM	Centre de santé communautaire
CSLS	Cellule sectorielle de lutte contre le SIDA
CSW	Commercial sex workers
DHS	Demographic and Health Surveys
FHI	Family Health International
GP/SP	Groupe Pivot/Santé Population
HCNLS	Haut conseil national de lutte contre le SIDA
HIV	Human immunodeficiency virus
IDU	Intravenous drug users
ISBS	Integrated STI Prevalence and Behavior Survey
MOH	Ministry of Health
MSM	Men who have sex with men
NGO	Nongovernment organization
PKC	Project Keneya Ciwara
PNLS	Programme national de lutte contre le SIDA
PSI	Population Services International
SSS	Sentinel Surveillance System
STI	Sexually transmitted infections
UNICEF	United Nations Children Fund
USG	United States Government
USAID	United States Agency for International Development
VCT	Voluntary counseling and testing
WHO	World Health Organization

EXECUTIVE SUMMARY

The USAID Mission in Mali has been supporting the Malian government since the 1990s in its efforts to prevent HIV transmission through a variety of programs that include research and targeted interventions. This report presents the findings from an evaluation of USAID's HIV/AIDS strategies and programs around HIV prevention in Mali. The purpose was to conduct a performance evaluation of HIV prevention strategies and programs sponsored by USAID from 2000 to 2010 in Mali and to document changes in risk behaviors and HIV prevalence over this same period. The results of this evaluation will help inform USAID/Mali's HIV/AIDS program design for 2013–2018.

Following is a list of the evaluation's specific objectives:

- Describe the policies, strategies, and activities of USAID/Mali related to sexually transmitted infection (STI) prevention from 2000 to 2010
- Assess the relevance and appropriateness of these policies and strategies to the situation of the country.
- Show how the various programs were implemented.
- Assess how well programs achieved their objectives.
- Document the trends in risky behaviors, as well as in STI and HIV prevalence over time.

Two main research questions guided the evaluation:

1. How suitable and relevant was USAID's strategy and programming for HIV prevention in Mali between 2000 and 2010?
2. What changes in HIV-related knowledge and behaviors, and HIV and STI prevalence (outcomes) occurred among Malian medium-risk groups (truckers, ticket touts, mobile female food vendors, and household maids) from 2000–2009?

Methodology

The evaluation relied on three sources of data: (1) a document review, (2) key informant interviews, and (3) an analysis of the Integrated STI Prevalence and Behavior Survey (ISBS) data.

Document Review

USAID provided over 200 documents for review, which included documents from the Malian government, USAID, the CDC, and the various collaborating partners that implemented STI prevention programs funded by USAID. The reviewing team examined about 110 documents. The document review provided information relevant to answering key components of the research questions.

Key Informant Interviews

A series of key informant interviews were conducted with 36 individuals involved in planning or implementing HIV prevention programs sponsored by USAID between 2000 and 2010. Key informants were people who had worked for USAID and CDC; government representatives and representatives from the Haut Conseil National pour la Lutte contre le SIDA (HCNLS) and the Cellule Sectorielle de la Lutte contre le SIDA(CSLS); representatives from international nongovernmental organizations (NGOs); and Malian NGOs working in the domain of STI prevention and treatment. The interviews were designed to learn as much as possible about the HIV prevention programs they had planned, directed, or implemented.

ISBS Data

A secondary data analysis used four sequential ISBSs conducted in Mali in 2000, 2003, 2006, and 2009. The purpose of the analysis was to answer the second research question on trends in risk behaviors and in HIV and STI prevalence between 2000 and 2009 for four medium-risk groups: (1) truckers, (2) ticket touts, (3) female ambulatory vendors, and (4) household maids.

Findings

USAID's overall strategy in Mali was to target populations deemed at risk for HIV and to provide products and services intended to help reduce the spread of the virus. This strategy entailed several assumptions, such as the importance of identifying groups that are at medium or high risk for transmission to better target interventions, encouraging behavioral changes through the spread of knowledge, recognizing that marketing has the potential to reduce risky behavior, and advertising the availability of voluntary counseling and testing and STI treatment. Although some of these assumptions led to successful programs and interventions, others neglected populations that might have been at high risk for HIV, and others led to an overestimation of the potential impact of a program or intervention. The document review illustrated that USAID-supported organizations gathered key information about the epidemic and conducted a wide range of HIV prevention activities. Overall, most of the interventions achieved their program objectives; however, the evidence on their impact on behavior outcomes and HIV prevalence is less clear.

Statistical analysis of the ISBS provided information on HIV knowledge, condom use, and HIV and STI prevalence among Malian medium-risk groups (truckers, ticket touts, mobile female food vendors, and household maids) from 2000–2009. In 2003, USAID was following the "abstain, be faithful, and condom use" (ABC) strategy, which was used as a measure of knowledge about ways to prevent HIV transmission. Response to knowledge about HIV transmission differed widely between men and women, but the percentage of all groups that could name all three means of preventing transmission never exceeded 10%. The data showed that among men, knowledge did not increase and the number of men who cited abstaining and faithfulness as prevention measures decreased significantly. The number of women who could name abstinence as a means for prevention increased significantly, but the proportion of women that could name being faithful or using condoms decreased from 2003 to 2009.

Condom use increased among men but not among women. Both truckers and ticket touts appear to have incorporated the importance of using condoms with certain types of partners, and they have found places where they can obtain them. Some of this increase may be attributed to media messages about HIV prevention and the availability of condoms.

HIV prevalence in 2009 was lower than in 2000 for each of the four medium-risk groups, but after controlling for demographic factors only among truckers and vendors was the decrease statistically significant. For STIs, a significant increase was found in truckers for Chlamydia and in ambulatory vendors for gonorrhea; decreases were found in ticket touts for gonorrhea.

Recommendations

Following are recommendations for USAID/Mali's HIV/AIDS program design for 2013–2018:

- Align the overall U.S. Government strategy closely to that of the Government of Mali, as outlined by the HCNLS.
- Diversify the target populations and target locations for HIV prevention interventions.
- Focus on capacity building and expansion of services.
- Develop a definition of target groups based more on a recognition of social and economic mobility than on occupational groups.
- Develop a system of monitoring STI prevalence and treating STIs in identified locations.

- Increase the focus on youth and youth-targeted interventions.
- Develop a system of monitoring STI prevalence and treating STIs in the identified locations.
- Continue to promote voluntary counseling and testing and other prevention measures.
- Conduct additional research on gender differences in HIV prevention programming.
- Design a sound ISBS that will remain consistent for each of the surveys conducted.

1. BACKGROUND

The USAID Mission in Mali has been supporting the Malian government since the 1990s in its efforts to prevent HIV transmission through a variety of programs that include research and targeted interventions. The HIV/AIDS epidemic in Mali often has been described as a generalized epidemic, but HIV prevalence has been found to be concentrated in several specific groups characterized by multiple sexual partners: commercial sex workers, men who have sex with men (MSM), long distance truckers, and male ticket touts and female ambulatory food vendors working in major transport hubs, such as truck and bus stops.

Data on HIV prevalence among the general adult population ages 15 to 49 comes from the three most recent Demographic and Health Surveys (EDSM-III, EDSM-IV, EDSM-V). These data showed a prevalence of 1.7% in 2000, 1.3% in 2005, and between 1.1% and 1.2% in 2011 (results not yet official). The Ministry of Health (MOH) maintained a sentinel surveillance system, with technical assistance from the U.S. Centers for Disease Control and Prevention (CDC), that provided HIV prevalence data on pregnant women who sought antenatal care in health facilities. Prevalence was found to be 3.8% in 2003 and 2.7% in 2009 among these women. Data on HIV prevalence among groups with higher risk of HIV transmission was provided by the four Integrated STI Prevalence and Behavioral Surveys (ISBS) conducted by the Cellule Sectorielle de Lutte contre le SIDA (CSLS), with technical assistance from the CDC in 2000, 2003, 2006, and 2009

This report presents the findings from a performance evaluation of USAID's HIV/AIDS strategies and programs around HIV prevention from 2000 to 2010. The evaluation draws on three sources of information: (1) a review of documents from the Malian government, USAID, the CDC, and the various collaborating partners that implemented sexually transmitted infections (STI) prevention programs funded by USAID; (2) a series of individual interviews (key informant) with program participants of these partners who were active in policy and programs from 2000 to 2010; and (3) data from the four ISBS surveys conducted during this same period. Although each source of data is well suited to answer certain questions, the report seeks to provide an overall picture of the effect and impact of these STI (largely HIV) prevention programs. The main objective of the evaluation is to provide guidelines for future USAID programs based on what has been learned to date.

The purpose of the evaluation was to conduct a performance evaluation of HIV prevention strategies and programs sponsored by USAID from 2000 to 2010 in Mali and to document changes in risk behaviors and HIV prevalence over this same time period to inform future USAID HIV/AIDS programs in Mali.

The evaluation has the following specific objectives:

- Describe the policies, strategies, and activities of USAID/Mali related to STI prevention from 2000 to 2010.
- Assess the relevance and appropriateness of these policies and strategies to the situation of the country.
- Show how the various programs were implemented.
- Assess how well programs achieved their objectives.
- Document the trends in risky behaviors in STI and HIV prevalence over time.

The evaluation posed two main research questions with sub-question:

1. How suitable and relevant was USAID's strategy and programming for HIV prevention in Mali between 2000 and 2010?

- What was USAID's strategy for HIV prevention in Mali from 2000 to 2010?
- What were the assumptions and expectations behind the HIV strategy (with regards to target groups, to social change, to transmission patterns, etc.)?
- How well were these strategies and programs tailored to the risks of HIV infection as experienced by the groups at medium risk for HIV infection?
- What were the populations targeted? What was their relationship to both high-risk groups and the general population?
- Were the targets and objectives that were given to the NGOs reached by program activities?
- How were the programs successful? What challenges did they face?
- What resources (funds, skills, and materials) were placed at the disposition of the implementing NGOs?

2. What changes in HIV-related knowledge and behaviors and HIV and STI prevalence (outcomes) occurred among Malian medium-risk groups (truckers, ticket touts, mobile female food vendors, and household maids) from 2000–2009?

- To what extent did HIV prevention knowledge change among these populations?
- To what extent did consistent condom use change with different kinds of partners?
- To what extent did HIV and STI prevalence change among these groups?
- Do the observed trends in outcomes remain when controlled for demographics and other confounding factors?

The report is organized to respond to these questions with sections dedicated to each question. The final section focuses on the main findings, the way findings overlap or complement or contradict each other, and recommendations for the formulation of a new strategy for USAID support to the Malian government in HIV prevention and treatment.

2. Data Sources and Methodology

The evaluation relied on three sources of data: (1) program documents, (2) interviews with key informants, and (3) analysis of ISBS data. This section describes the data sources and methodology.

2.1 Document Reviews

Nearly 200 documents were available from USAID for review. These materials originated from the government of Mali, CDC, USAID, a collection of relevant outside studies and reports, and the USAID's local implementing partners. The government documents were policy reports and reports on government interventions. The CDC documents reported on the four ISBS surveys conducted. The USAID documents included policy reviews and Requests for Proposals (RFP) that were circulated to potential partners and local nongovernment organizations (NGOs). Program reports were received from the following groups: PSI, Care/Mali, Groupe Pivot/Santé Population (GP/SP), ARCAD-SIDA, and Soutoura. These reports described program activities during specific times. The PSI reports were the most comprehensive. Studies from other sources included two reports prepared by Sarah Castle; one was a study of groups at medium risk for HIV[1]; the other was a study of USAID activities related to HIV prevention and the identification of groups most vulnerable to HIV infection[2].

The reviewing team selected about 110 documents from review (see Appendix A) from the initial group. Each team member read a series of documents and then wrote summaries of the contents, including the target audience, main points, and an assessment of relevance. The team leader then went through most of the documents, made notes, and summarized relevant points.

2.2 Key Informant Interviews

The team conducted individual interviews in Bamako in November 2013 with people involved in planning or implementing HIV prevention programs sponsored by USAID between 2000 and 2010. The interviewees had worked for USAID and the CDC or they were government representatives from the Haut Conseil National pour la Lutte contre le SIDA (HCNLS) and the Cellule Sectorielle de la Lutte contre le SIDA (CSLS).Others were representatives from international NGOs, and Malian NGOs working in the domain of STI prevention and treatment. The 36 individuals interviewed had performed different roles in the STI prevention programs: policy and funding experts, program managers, and peer educators. The peer educators interviewed were all commercial sex workers (CSWs).

The interviews were designed to learn as much as possible about the HIV prevention programs they had planned, directed, or implemented over the years. Interviewers also gathered information about the roles the interviewees played, their views on program achievements and challenges, their judgment on the kinds of HIV prevention activities that would be most effective among groups at risk, and their own understanding of USAID strategy and objectives, and asked them for any suggestions for program improvement.

USAID developed the conversation guides in English and French for use in the key informant interviews with policy and funders, program managers, and peer educators. The guides had an introduction of two paragraphs, followed by a series of open-ended questions on the themes of interest: their current job

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[1] Castle, S. 1999. Identification of medium risk groups for ISBS study in Mali. Report for the CDC.

[2] Castle, S. 2010. HIV prevalence in Mali, current HIV/AIDS related activities, and the identification of new highly vulnerable populations: A strategic review for USAID.

responsibilities, their role in HIV prevention programs in the past, their perspective on the strategy programs followed, strengths and weaknesses they recalled, and suggestions for program improvement. The guides were revised during training for the interviewers to make them more open-ended and less directive. The format was sufficiently open-ended to allow respondents to speak about topics as they chose. The underlying purpose of the guides was to teach the interviewers to obtain the interviewees' perspectives on their responsibilities, the populations targeted, their judgment about how well the programs responded to the needs of members of the targeted groups, the effectiveness of their programs, and ways that they responded to the challenges they faced in program implementation. They also were encouraged to speak to ways that the programs could have been adapted to improve effectiveness.

Research assistants were trained in the study objectives and principles of qualitative research and the principles of obtaining informed consent and interviewing. They participated in the revision of the informed consent form and the simplification of the conversation guides, which were written in French and pre-tested during the training. The guides were organized to allow respondents to add elements that he or she considered important. Copies of the guides are found in Appendix B.

The individuals to be interviewed were selected from a list of organizations and personnel that USAID/Mali generated. USAID provided a list of organizations—government, donors, collaborating partners, and NGOs—that had been involved in interventions for the prevention of HIV/AIDS, along with a list of one or two potential key informants that could be contacted in each organization. The team contacted people listed as directors of the organizations to identify suitable key informants. The key informants interviewed included personnel from the government of Mali in the Programme National de Lutte contre le SIDA (PNLS) and HCNLS, U.S. Government (USG) stakeholders during the time of the programming (USAID and CDC), program managers at major NGOs responsible for programs (Groupe Pivot/Santé Population, Population Services International, Care Mali, and smaller NGOs, such as Soutoura, ARCAD-SIDA, AMADECOS, and JIGI, that work with medium- or high-risk populations.

The team of three trained research assistants conducted most of the interviews; the evaluation lead conducted a few. The interviews were structured loosely according to the conversation guide, and they usually took between 30 to 60 minutes to complete. All interviews were conducted in French after the interviewer obtained an informed consent for the interview and its recording. The recorded interviews later were transcribed and typed in Microsoft Word for analysis. The results from the interviews with the 27 policy and program specialists are incorporated into this report. The interviews with the nine CSWs are not included because USAID/Mali planned to examine those transcripts separately.

2.3 ISBS Data

The team also conducted a secondary data analysis from four sequential ISBS conducted in Mali in 2000, 2003, 2006, and 2009. The secondary analysis sought answers to the second research question on trends in risk behaviors and the correlation between HIV and STI prevalence between 2000 and 2009 for four medium-risk groups: truckers, ticket touts, female ambulatory vendors, and household maids.[3]

Survey Descriptions

The ISBS were designed to monitor risk behaviors and the prevalence of STIs, including HIV, over time in high-risk groups, such as CSWs, and in medium-risk groups that may be playing a bridging role between high-risk high-prevalence groups and the general population. The medium-risk groups, identified in earlier research[4] are long-distance truckers, ticket touts (young men who find passengers

[3] ISBS also were conducted among sex workers, but this report did not include that risk group in the analysis, according to a USAID request.

[4] Castle, S. 1999. "Medium Risk".

for taxis or buses), female ambulatory food vendors (women who carry fruit, snacks, and other goods for sale on the street,), and household maids (young women often from rural areas who work in households in the cities).

The surveys were implemented every 3 years between 2000 and 2009 in six large cities, including Mali's capital city of Bamako, that are considered high-traffic areas or major stopover cities. In the first year, the surveys included six cities (Bamako, Kayes, Gao, Mopti, Segou, and Sikasso). In 2003 and subsequent years, a seventh city was added (Koutiala). The sampling methodology relied on defining clusters, or geographic areas, where the risk groups congregate or work. Clusters were defined differently, depending on the risk group, and generally consisted of trucking companies for truckers; bus stations and truck stops for ticket touts and female ambulatory vendors; and communal dormitories for household maids. After the clusters were identified and listed for each city, the team randomly selected a sample of clusters and interviewed individuals in each cluster until the necessary sample size was obtained. Descriptions of the sampling methods are available in the 2000, 2003, 2006, and 2009 ISBS reports.

The team collected biological samples to estimate the prevalence of Chlamydia trachomatis (Chlamydia), Neisseria gonorrhoeae (gonorrhea), and HIV among the targeted groups. The team obtained respondent consent for the following sample collections:

- Urine samples for polymerase chain reaction PCR testing for C. trachomatis and N. gonorrhea
- Finger stick drops of blood on blotting paper for HIV testing

All of the urine samples that tested positive, and 1 in 10 of the urine tests that tested negative, were sent to CDC in Atlanta for external quality control.[5]

Analysis

For each risk group, the databases from the four rounds of survey were merged. This was complicated because the data from the separate rounds were not compatible (variables were not numbered consistently across surveys, and the skip patterns were not always the same). These complications required considerable recoding. In some cases, question wording changed, which made it impossible to compare responses over time.

This analysis yielded the following three interesting categories of results: (1) knowledge of HIV and HIV prevention, (2) condom use with different types of partners, and (3) HIV and STI prevalence. Box 1 lists the outcome variables. To assess changes over time, bivariate regression was conducted to estimate whether a significant association existed between the year of the survey and each of the outcome variables.

Multivariate regression was used to test the association between year of survey

Box 1: Outcome variables used in the analysis

(1) HIV prevention knowledge
- Knowledge that condom use prevents HIV
- Knowledge that abstinence prevents HIV
- Knowledge that being faithful to only one partner prevents HIV
- Knowledge of all three prevention methods

(2) HIV prevention behaviors
- Condom use with a spouse in the past 6 months (not asked of women)
- Condom use at last sex with a girlfriend or boyfriend
- Condom use at last sex with an occasional partner within the past 6 months
- Condom use with a prostitute within the last 30 days and within the last 6 months (men only)

(3) HIV and STI prevalence
- HIV infection rate
- Chlamydia infection rate
- Gonorrhea infection rate

[5] Additional information on testing procedures can be found in the individual survey reports.

and outcomes while controlling for demographic and socioeconomic characteristics. Control variables included age, region, nationality, marital status, education, salary, and regular migration. For condom use, we also controlled for risk behaviors, such as having more than one partner in the past 30 days and having had relations with a prostitute in the previous 6 months.

In some regression models, control variables had to be recoded or dropped because some categories had insufficient cases. For example, we dropped nationality from the women's models because less than 2% of female respondents were non-Malian. The tables that show the multiple regression findings list the variables that were controlled for.

Some variables also were coded differently for men and women. For example, schooling has three categories for men, (1) none, (2) some primary, and (3) some secondary; but only two categories for women, (1) none and (2) some schooling, because too few female respondents had gone beyond primary schooling (Table 1).

Table 1: Control variables and their categories included in the regression analysis

Control Variables	Men	Women
Nationality	Malian, non-Malian	omitted (too few women were non-Malian)
Region	Bamako, Sikasso, Segou, Mopti, Kayes, Gao, Koutiala	Bamako, Sikasso, Segou, Mopti, Kayes, Gao, Koutiala
Age groups	15–24, 25–34, 35+	15–19, 20–24, 25–34, 35+ (in some cases, 25+)
Marital status	ever married, never married	ever married, never married
Age of first sex	<15, 15–17, 18+	<15, 15–17, 18+
Education	none, primary, secondary and above	none, any (at least 1 year)
Migration (usually migrates annually)	yes, no	yes, no
Salary	Continuous	Continuous
Number of partners in past 30 days	0 or 1 partner, 2 or more partners	0 or 1 partner, 2 or more partners
Sex with a prostitute in past 30 days or 6months	yes, no	omitted (not relevant)
Sex with an occasional partner is past 6 months	yes, no	omitted (too few cases)
STI symptoms in the past 6 months	yes, no	yes, no
Drinks alcohol	yes, no	omitted (asked if partner drinks rather than respondent, no way to know which partner if multiple partners)

Several variables originally proposed for inclusion in the regressions were omitted. Among these was ethnicity, which included too many categories and caused complications with our regression models, and questions on drug use, which were awkwardly phrased and asked directly of male respondents and indirectly of females (for example, does your partner drink). Finally, because only 24 men across all survey years reported having had sex with a man, less than 1% in each group per year, this variable (a man was asked if he had ever had sex with a man) was omitted as well.

We used STATA 11 to conduct all analyses. Consistent with the sampling methodology, we applied no weights. The results of the univariate analyses described all dependent and independent variables, as shown in Section 4, followed by bivariate and multivariate regression analysis for the outcome variables. Section 4 is divided according to the primary outcomes of interest: (1) HIV prevention knowledge, (2) HIV prevention behaviors (condom use), and (3) HIV and STI prevalence.

Response and Testing Rates

Table 2 shows response rates and testing rates for various risk groups. Note that in 2000 a significant portion of HIV test results were omitted from the database we received. The 2000 survey was

conducted in two phases, with the cities of Kayes and Gao completed about 6 months after the first four cities. While biomarkers appear to have been collected for all surveys, the results are missing from the data for Kayes and Gao for 2000. As noted in the 2000 report, Gao is a smaller city on the trucking route between Bamako and Niger, and Kayes is a stopover on the route to Dakar. It is difficult to say how these missing results may have biased the results of this analysis, but this limitation should be kept in mind when interpreting any changes in the HIV and STI infection rates.

Table 2: Response and test rates among types of respondents

	2000	2003	2006	2009
Truckers (N)	**570**	**699**	**746**	**917**
Interview consent rate	100%	94%	96%	96%
Urine test consent rate	86%	75%	84%	84%
Blood test consent rate	82%	71%	80%	81%
HIV test results available (N)	**321**	**489**	**599**	**731**
Actual HIV test rate	56%	70%	80%	80%
% HIV test lost	31%	2%	0%	2%
Touts (N)	**577**	**538**	**649**	**701**
Interview consent rate	100%	97%	98%	98%
Urine test consent rate	91%	81%	89%	92%
Blood test consent rate	88%	78%	86%	92%
HIV test results available (N)	**421**	**410**	**556**	**636**
Actual HIV test rate	73%	76%	86%	91%
% HIV test lost	17%	2%	0%	2%
Vendors (N)	**645**	**699**	**867**	**1,130**
Interview consent rate	99%	98%	97%	97%
Urine test consent rate	92%	92%	93%	82%
Blood test consent rate	92%	94%	94%	89%
HIV test results available (N)	**451**	**655**	**818**	**998**
Actual HIV test rate	70%	94%	94%	88%
% HIV test lost	24%	0%	0%	1%
Maids (N)	**500**	**845**	**600**	**690**
Interview consent rate	99.8%	99.3%	99.7%	99.1%
Urine test consent rate	97%	97%	99%	95%
Blood test consent rate	97%	98%	99%	97%
HIV test results available (N)	**477**	**830**	**591**	**667**
Actual HIV test rate	95%	98%	99%	97%
% HIV test lost	1%	0%	0%	0%

3. PROGRAM SUITABILITY AND RELEVANCE

This section answers the first evaluation question, "How suitable and relevant was USAID's strategy and programming for HIV prevention in Mali between 2000 and 2010?" Section 3.1 focuses on the prevention strategies and discusses the following four sub-questions:

- What was USAID's strategy for HIV prevention in Mali from 2000 to 2010?
- What were the assumptions and expectations behind the HIV strategy (with regards to target groups, to social change, to transmission patterns, etc.)?
- What were the populations targeted? What was their relationship to both high-risk groups and the general population?
- How well were these strategies and programs tailored to the risks of HIV infection as experienced by the groups at medium risk for HIV infection?

Section 3.2 describes USAID's activities in HIV prevention and discusses the following three sub-questions:

- Were the targets and objectives that were given to the NGOs reached by program activities?
- How were the programs successful? What challenges did they face?
- What resources (funds, skills, and materials) were placed at the disposition of the implementing NGOs?

We used both the document reviews and key informant interviews to answer the evaluation questions.

USAID's HIV Prevention Strategy

USAID's 2001–2005 HIV/AIDS strategy for Mali targeted vulnerable populations, youth, community leaders, and the general population through behavior change approaches, voluntary counseling and testing (VCT) services, and qualitative research[6]. The USAID HIV/AIDS strategy has consistently supported data collection on HIV prevalence to inform programs and monitor trends over time; it has supported the MOH in discussions of policy and health systems improvement in its collaboration with the PNLS, HCNLS, and CSLS; it has used the media and peer education to disseminate information about the risks of HIV transmission to the general population, especially to youth; it has offered a package of products and services targeted to groups at high and medium risk for HIV transmission; and it has offered training to personnel of local NGOs working with HIV and STI prevention in the use of information, education and communication (IEC) materials and project management.

In the period just before 2000, USAID funded a seven 7-year project, the AIDS/ST Awareness Project, that began in 1994 and ended in September 2001. A document, Inventory of USAID Interventions in AIDS STIs in Mali [2000], described the project objectives. Project activities focused on "the prevention of sexual transmission of HIV through improved case management of sexually transmitted infections; the prevention of sexual transmission through IEC activities aimed at the general population and high-risk groups to promote behavior change; and effective program coordination and leadership by the National AIDS Committee through activities in the areas of information exchange, policy development and resource mobilization" [p. 1]. The IEC activities focused on the use of the media to disseminate accurate information about HIV transmission, working with bartenders and CSWs in urban areas, and the free distribution of condoms to the general population and members of high-risk groups. The IEC component of this project was implemented by Plan International to promote behavior that would reduce HIV transmission through the use of the media and peer education. GP/SP received a grant to

[6] USAID. 2003. *Mali Country Profile*. Retrieved from http://pdf.usaid.gov/pdf_docs/Pnacw321.pdf

promote HIV prevention through local NGOs. The grant focused on three types of activities: (1) IEC on HIV transmission and behavior change, (2) training, and (3) the distribution of condoms. The Futures Group received a grant for the social marketing of condoms and to promote safer sexual behavior in both high-risk groups and the general population.

In short, in 2000, the USAID strategy for HIV prevention featured IEC programs that targeted the general population, promoted abstinence and condom use, targeted CSWs with interventions, supported the work of the CDC in surveillance, and supported PNLS efforts to develop policies and programs. The strategy was expected to change individual behavior through health education about the risks of HIV transmission, greatly increase condom use through social marketing, and monitor trends over time in HIV prevalence among selected groups. Key informants spoke of this period as a time when USAID used the media and training to promote the ABC (Abstain, Be faithful, Condom use) approach to reduce HIV transmission. A key informant expressed strong criticism of this approach.

A key element in the USAID strategy during the entire period was the identification of groups at higher or lower risk for HIV infection. This issue was addressed explicitly in a report written by Sarah Castle[7] for the CDC that identified groups at higher and lower risk for HIV transmission. The medium-risk groups comprise people who have unprotected sex with people in high-risk groups, such as CSWs and with low-risk groups (general population), thus acting as so-called "bridging populations." Since 2000, USAID has sought to tailor packages of goods and services to these high- and medium-risk groups. The Corridors of Change Project implemented by PSI from 2000 to 2003 illustrates the operation of this strategy; the project targeted the migrant populations that operate along the country's transit routes focused on CSWs, truckers, vendors working along these routes, and youth. The project featured IEC materials designed for behavior change communication (BCC) and included exploratory research to gather data on the response to VCT for HIV.

The review of USAID's HIV and STI strategy by the Synergy Project[8] mentioned these same bridging populations. The study recommended that USAID support interventions that increase the use of preventive services with products such as VCT and practices that reduce HIV transmission. The reports' recommended USAID strategy had the following objectives:

- Prevent STI and HIV infections among the sexual networks of high-risk groups.
- Prevent infection among the sexual networks of bridging populations.
- Strengthen the capacity of the PNLS and NGOs to develop a mutually supportive set of HIV/AIDs responses.
- Promote collaborative programming to expand and sustain HIV/AIDS responses.

The actions, or behaviors, that put individuals at risk for HIV or STI transmission are having multiple sexual partners, having unprotected sex, and leaving an STI without treatment. Thus, the package of products and practices that target medium-risk groups include messages about urging a reduction in the number of sexual partners, the use of condoms outside marriage, and rapid treatment (case management) of STIs. This strategy of targeting populations according to relative risk of HIV transmission has remained part of USAID strategy since 2002. What has shifted somewhat is the identification of the high-risk and medium-risk populations.

The USAID Strategy Statement for 2010 on HIV/AIDS also noted the role of so-called "bridgers" in infecting the general population with HIV. The text stated that USAID works closely with the HCNLS to

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[7] Castle, S. 1999. "Medium Risk"

[8] Barry, S., A. Lo and N. Diarra. 2003. *Recommendations for USAID/Mali's HIV/AIDS Strategy 2003–2012*. The Synergy Project/TvT Associates: Washington, DC.

support a package of preventive interventions that complements the efforts of other donors and USG partners. The main elements of the approach to HIV prevention are BCC, policy advocacy, and the social marketing of condoms. USAID also continued to work closely with the CDC in surveillance activities with the ISBS and Sentinel Surveillance System (SSS); however, the strategy statement text noted that USAID and the USG had developed a new strategy in 2010 in line with the priorities of the government of Mali, the Paris Declaration, U.S. President's Emergency Plan for AIDS Relief, and the Global Health Initiative. Without describing the strategy, the text noted that its objectives were to: reduce the number of new infections among most at-risk populations (MARPs) and bridging populations, strengthen supportive structures, and building capacity among local community organizations to engage in HIV preventive activities.

Another text from 2010, known as the Memorandum for the Strategic Plan for USG Support for Mali's HIV/Aids National Response, states that USG support will focus on both the MARP and those that act as bridgers between the MARPs and the general population. The MARPs are CSWs, MSM, and intravenous drug users (IDU). The bridging populations are people who participate in sexual networks with individuals from both high- and low-risk groups. These bridging groups were identified as long-distance truck drivers, formal and informal gold miners, ambulatory vendors at truck and bus stops, seasonal agricultural workers, and the military.

The overall objective of this USG strategy is to "reduce and mitigate the impact of HIV/AIDS in Mali." The specific strategy included these objectives aimed at the population:

1. Provide a core package of prevention services for MARPs nationwide

- Community-based outreach
- VCT
- BCC programs, including condom distribution
- Diagnosis and treatment of STIs
- Referrals to other centers of care
- Training of service providers to address needs of MARPs

2. Provide core package of prevention services for bridgers nationwide

- Community-based outreach
- VCT
- BCC programs including condom distribution

3. Provide VCT to targeted groups

- Increase demand for VCT
- Mobile VCT units

4. Conduct appropriate health education in general population
5. Support activities with persons living with AIDS

The USAID strategy has offered a similar package of messages and services to high- and medium-risk groups that reduced HIV transmission in several ways: (1) the promotion of condom use greatly reduced the rates of unprotected sex; (2) the promotion of a reduction in the number of partners and an increase in utilization of VCT services; (3) the promotion of VCT services allowed individuals to be counseled and learn their sero status; and (4) social and medical services development for MARPs increased effective case management of STIs including HIV. The funding levels for interventions show a gradual shift in emphasis to more social and medical services for MARPs and high-risk populations.

Further, key informants discussed how USAID funding for HIV prevention has been given for four broad types of activity in Mali: (1) studies that produce data on STI and HIV prevalence among pregnant

women and groups at higher risk of HIV infection, (2) health education through the mass media about HIV transmission and how to prevent it, (3) social marketing of condoms (male and female), and (4) establishment and operation of VCT centers and STI case management.

Two aspects of the current USG strategy have shifted over time: the identification of high- and medium-risk groups and intervention sites. Which of the mobile male populations should be considered as high-priority medium-risk groups? Should all migrant workers in all domains be included? To what extent can interventions target migrant workers, such as those in rice and cotton production? To what extent can NGOs, such as Soutoura and ARCAD-SIDA, expand their services to new urban centers?

The memorandum [2010] cited above provides a list of migrant workers at medium risk. The study by Castle[9] discusses those groups in detail. The identification of the bridging populations of highest priority likely will be determined in consultation with Ministry partners from the HCNLS, CSLS, and GP/SP and others who know the labor patterns in different regions of Mali.

The overall USAID strategy has been exceedingly successful in the promotion of condoms, informing the public about the risks of HIV transmission and improving medical services for MARPs.

Evaluation Question:

What were the assumptions and expectations behind the HIV strategy (with regards to target groups, to social change, to transmission patterns, etc.)?

The assumptions and expectations of the USAID/Mali HIV strategy and how it was formulated are not well documented but inferences can be made as to what they were. The overall strategy follows a classic logic model to HIV prevention (Figure 1).

Figure 1: Logic model for USAID/Mali HIV prevention strategy

Inputs	Processes	Outputs	Outcomes	Impact
• Funding • Data • Policy	• Behavior change activities • Condom promotion and availability • Strengthen VCT and STI services	• Condoms distributed, sold • VCT and STI services provided	• Decreased number of partners • Increased condom use • Increased knowledge of HIV status • Decreased STI transmission	Decreased HIV transmission

Each of the processes mentioned earlier were expected to reduce HIV transmission. The BCC strategy expected that when individuals better understood the risks and dangers of HIV transmission, they would reduce their risky behaviors. The social marketing of condoms and making them generally available also would reduce HIV transmission. The increased use of VCT services would provide not only individual counseling on HIV, but also allow participants to learn their HIV status and take protective measures. The targeting of specific groups with a package of messages and services according to their risk of HIV transmission was a way to maximize the impact of interventions.

In short, the USAID/Mali HIV prevention strategy was based on the notions that the HIV epidemic was concentrated in a few groups known to engage in risky behavior, that interventions should target these groups, that assistance should feature social marketing and communication and improved services, and

[9] Castle, S. 2010. "HIV Prevalence."

that the data on knowledge and behavior among these groups are needed to monitor temporal changes. Table 3 summarizes the inferred assumptions and provides commentary on those assumptions.

Table 3: Assumptions and Commentary

Assumption	Commentary
The labeling of groups of individuals as high risk and medium risk adds to our understanding of how HIV is transmitted	The image of individuals in a group at medium risk of HIV as connecting, or bridging, between the social networks of CSWs and the rest of the population helps in understanding how HIV is transmitted. The clients of CSWs connect commercial sex with their wives, girlfriends, and other partners.
The labeling of groups of individuals as high risk and medium risk will be useful to target interventions	It is useful to identify groups of individuals who are likely to have multiple sexual partners and who may or may not use condoms. This identification is especially important for knowing where to place services. Yet the general population cannot be neglected. Think of the wives who have no partner except their husband. They are at low risk for HIV transmission, but because their husband may have other partners, the wives may still become infected.
When individuals understand their risk of HIV transmission, they will change their behavior to reduce that risk	This assumption lies behind many public health campaigns to educate the public about all sorts of risks to health. The assumption often has been demonstrated to be false. That is, just because individuals understand the health risk they are taking, that does not mean they will change their actions to protect themselves. The literature on what is called the Knowledge Behavior gap has long shown that changes in actions (behavior) do not necessarily follow new knowledge.
Social marketing of public health knowledge of risks of HIV infection will reduce risky behavior	This is a fundamental assumption for all social marketing programs. In the context of Mali, program documents have shown the assumption to be accurate, but accurate knowledge of HIV transmission has not led to a reduction in the number of partners.
Social marketing of condoms will greatly increase condom use	This assumption is a subset of the preceding one, and thus it needs no further comment.
Changes in knowledge will not always result in changes in behavior	This assumption may or may not be shared by the USAID Mission. PSI makes this assumption because the literature contains many studies that show that changes in knowledge are not followed by changes in behavior[10].
Improved availability of VCT and treatment services will help reduce HIV and STI transmission	This assumption underlies the support for new VCT services: the assistance to the government for developing consistent guidelines for VCT, the help in setting up new VCT centers, and the training provided to personnel. Evidence to support this assumption can be indirect only, but the assumption is widely shared among HIV/AIDS experts.

Evaluation Questions:

What were the populations targeted? What was their relationship to both high risk groups and the general population?

According to the documents reviewed, the overall strategy of USAID/Mali assistance between 2000 and 2010 was based on the premise that HIV prevalence is concentrated in certain groups that exhibit actions that put them at higher risk for HIV transmission. In 1999, relatively little reliable data on HIV

[10] Hornik, Robert. 2002. Public Health Communication: Evidence for Behavior Change. Mahweh, NJ: awrence Erlbaum Associates, Inc.

prevalence was available for either the general population or for specific sub-groups. Small surveillance studies had been conducted earlier among CSW and truckers[11]. The identification of certain groups at higher risk than the general population but not as high as that of CSWs and truckers stems in part from a study conducted for USAID and the CDC in 1999 in several cities in Mali on the identification of medium-risk groups. These medium-risk individuals "exhibit behavior that puts them at greater risk of HIV infection and transmission than the general population"[12]. It was thought that these medium-risk groups act as bridging groups for HIV transmission between high-risk groups and the general population.

The medium-risk groups identified were long-distance truckers, ticket touts, female ambulatory food vendors, and household maids. Although once included in the lists, bar clients were soon dropped from the ISBS study because it was not possible to obtain permission from bar owners to interview them. The ISBS in 2000 found that maids had a similar HIV prevalence to that of the general population (1.7%), and therefore, were not considered at higher risk[13]. The same study found that truckers had an HIV prevalence of 4.1%, which put them in the medium-risk category and not the high-risk category (see Table 4).

Table 4: HIV prevalence in different risk populations in Mali

Population	HIV Prevalence (%)	Source
General Population	1.2	DHS 2001
Urban Men	1.6	DHS 2001
Urban Women	2.2	DHS 2001
Pregnant Women	3.8	MOH 2003
Truckers (male)	4.1	ISBS 2000
Ticket touts (male)	5.7	ISBS 2000
Ambulatory vendors (female)	6.5	ISBS 2000
CSW	28.9	ISBS 2000

The designation of CSWs and long-distance truck drivers as high risk for HIV likely was based on various studies in West and East Africa that found relatively high HIV prevalence among these groups. The Corridors of Change Project was based on the Prevention du SIDA sur les Axes Migratoires de l'Afrique de l'Ouest (PSAMAO) project. The AWARE II Project on MARPs in West Africa, however, found that CSWs, clients of CSWs, MSM, and IDUs were the groups that had the highest risk of HIV infection[14]. Members of these groups are vulnerable because they have many different sexual partners or they are exposed to injections.

The MOH had its own view at the time as to which groups were the most vulnerable to HIV infections. According to the overview of the strategy of the Malian government and the PNLS, the high-risk groups

[11] Castle, S. 1999. "Medium Risk."

[12] Castle, S. 1999. "Medium Risk," p. 1

[13] Although maids had a low risk for HIV infection, they were included in the behavior and HIV prevalence analysis in Section 4 because they were thought initially in 1999 to be vulnerable to HIV transmission.

[14] Dutta, A., and Maiga, M. 2011. *An Assessment of Policy toward Most-at-Risk Populations for HIV/AIDS in West Africa.* Accra, Ghana: Action for West Africa (AWARE-II) Project.

were CSWs, truckers, migrant workers, rural population, and children[15]. The document goes on to say that Mali has a "concentrated epidemic." This same document identified the following risky practices:

- Having multiple sexual partners
- Having sexual relations without a condom
- Early initiation of sexual relations

The discussion among government officials and donors sought to identify the population groups most at risk and to support interventions that would target those groups directly. Other groups sometimes mentioned in some circles as higher-risk groups were miners and the military. These two groups were added to the list of medium-risk groups in the Strategy Memorandum of 2010.

The problem of designating which populations to target for special attention in HIV prevention remains a subject of discussion among government agencies, donors, and health care providers. All agree that CSWs should continue to be targeted with special programs. Some experts in the government and among donors also advocate identifying and working with MSM to reduce HIV transmission. The current levels of HIV infection among truckers, ticket touts, and female ambulatory vendors who interact at truck and bus stops along major transport routes suggest that these groups in these locations deserve special attention as well. Concern about young domestic servants has waned since their HIV prevalence is no greater than among women in general. Judging from the HIV prevalence among sub-groups of the population in Mali, funding from USAID has been targeting people most at risk for HIV. Because organizations such as PSI and others have targeted gold miners, migrant workers, and workers in cotton production and rice fields suggests that HIV prevention efforts should target those groups as well as the groups targeted by the ISBS.

Evaluation Questions:

How well were these strategies and programs tailored to the risks of HIV infection as experienced by the groups at medium risk for HIV infection?

The definition of risky behavior used in this context includes three elements: (1) having multiple or numerous sexual partners, (2) having sexual relations without a condom, and (3) leaving an STI untreated. Individuals who have social interactions that include one of the three elements are considered at higher risk of HIV infection. CSWs have multiple partners by definition, but they may or may not fit with the other two elements. Long-distance truck drivers are thought to have several partners, but also may not fit with the other two elements. The case for individuals at medium risk is less obvious, but it seems that ticket touts and female ambulatory vendors at bus and truck stops have the opportunity to have multiple sexual partners. These groups all have more opportunities for risky behavior than the general population.

USAID/Mali's approach to HIV prevention focused on the sexual behavior of targeted populations. CSW, truckers, ticket touts, ambulatory vendors, and youth were considered the main populations to target. PSI project activities for youth included conducting focus groups to obtain information on how to market VCT services, encouraging peer education through local NGOs to educate youth on the risks of HIV transmission and the dangers of having multiple sexual partners; and promoting condom use. One of the key informants from a local NGO suggested that the approach to youth focus directly on sexual relations rather than mainly on the use of condoms.

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[15] Ministry of Health et al. 2004. Enquête intégrée sur la prévalence et les comportements en matière d'IST (ISBS) menée au Mali de mars à septebre 2003.

USAID's HIV Prevention Programming and Implementation

This section discusses three evaluation questions on program activities, the successes and challenges of the programs, and the resources the implementing NGOs used. Before answering these questions, it is important to describe the activities that USAID supported from 2000–2010. Review of the documents showed that USAID assistance took two main forms: (1) the provision of data on HIV-risk behaviors and HIV and STI prevalence through SSS and population-based surveys and (2) HIV prevention and support programs that featured health education and condom promotion and the provision of social and medical services for people affected by HIV.

Surveillance and Surveys

In 1999, little reliable data on HIV prevalence was available for either the general population nationally or for specific sub-groups. A few HIV surveillance studies had been conducted among high-risk populations (CSWs and truckers) [FHI Behavioral Surveillance Surveys 1990]. Yet it was unclear to what extent certain populations should be targeted with specific interventions, or if a strategy that targeted adults would be effective. To generate the information needed to target interventions, USAID supported the collection of reliable data on HIV-risk behaviors and prevalence through the activities listed below. The CDC was USAIDs implementing partner for the Sentinel Surveillance and ISBS surveys.

- **Sentinel Surveillance:** With USAID funding CDC provided technical assistance to the MOH CSLS for the SSS maintenance from 2003 to 2009 to assess HIV prevalence among women who attended antenatal care. Testing of blood for HIV prevalence was conducted in 2003, 2005, 2007, and 2009. Surveillance began with 10 largely urban sites in 2003 and expanded to 20 sites in 2009.
- **ISBS:** In 2000, the PNLS conducted the first of four ISBS among higher-risk groups in six cities with technical assistance from the CDC and funding from USAID[16]. The sample was drawn from clusters of five groups: CSWs, long-distance drivers (truckers), male ticket touts, female ambulatory vendors, and domestic servants (maids). The surveys produced data on socio-demographic variables, HIV knowledge, sexual relations, condom use with different types of partners, STIs (Chlamydia and gonorrhea), and HIV prevalence. Subsequent surveys used more or less the same questionnaire and the same types of samples.
- **Population-based Surveys:** USAID supported two rounds of Demographic and Health Surveys (2001 and 2006) that included HIV-risk behavior indicators and HIV prevalence.
- **Targeted Surveys:** PSI also conducted periodic surveys among targeted groups in various parts of the country from 2001 to 2010 to either establish a baseline or help monitor program effects. For example, in 2001 PSI conducted one survey among higher-risk groups in Bamako, Kayes, and Sikasso to collect data on their knowledge of HIV and AIDS, their sexual relations, their ideas about condom use, and reported condom use. A similar survey was conducted at the same time among younger people in the general population. Both surveys were designed to serve as baselines before the project began.

Interventions for Health Education, Condom Use, and Social and Medical Services

The major portion of funding from USAID for HIV prevention was devoted to a series of interventions with local and international partners. The interventions included media programs to educate the public on HIV prevention and the use of condoms, VCT centers, and syndromic treatment for STIs. Following is a list of the main partners involved:

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[16] Ministry of Health et al. 2001. Integrated STI Prevalence and Behavior Survey (ISBS) Conducted in Mali from March–December 2000. Mali National AIDS Control Program (PNLS).

- **Population Services International (PSI),** which led two successive projects: Corridors of Change and then Pathways to Health, both focused on HIV and STI prevention among high-risk groups
- **CARE Mali's Project Keneya Ciwara (PKC)** included an HIV component in its assistance to maternal and child health services
- **Groupe Pivot/Santé Population (GP/SP)**, an umbrella organization that supervises numerous small NGOs that conduct training, workshops, condom distribution, health education, and other activities with a wide range of target groups, including MSM
- **Soutoura, an NGO**, initially supervised by GP/SP, which had activities in four urban areas and focused on the provision of social and medical services to CSW and their partners (the CDC was an implementing partner with USAID for the work of Sountoura)
- **ARCAD-SIDA**, an NGO that has been collaborating with GP/SP. The organization, along with its treatment partner branch CESAC, has been providing social and medical services to people diagnosed as HIV positive since the mid-1990s

Evaluation Question:

Were the targets and objectives that were given to the NGOs reached by program activities?

Next we use as examples the program activities that the partners mentioned earlier implemented. We examine the evaluation question to see if the NGOs reached program activity targets and objectives.

PSI

The Corridor of Change project (2000–2003) sought to reduce the transmission of HIV among the populations that move along the main transport routes from large urban centers in Mali to Côte d'Ivoire, Burkina Faso, and Senegal. According to project reports, these populations are mainly long-distance truck drivers, CSWs, female vendors, and youth ages 15 to 24. The dominant image underlying the project is the groups of individuals engaging in actions that increase their risk of HIV all along these major truck and bus routes leading to and from neighboring countries. The project relied on five strategic components: (1) consumer based research; (2) voluntary counseling and testing; (3) mass media information, education and communication; (4) interpersonal behavior change communication; (5) access to prevention products [pg. 1][17].

PSI launched its communication campaign with billboards and other promotional materials in August before its own survey results became available. The messages focused on the risks of having multiple partners, the need to seek care rapidly for STIs, and encouraging consistent condom use for all sexual relations. It also broadcast programs on the radio and television on trust between sexual partners. Through partnering NGOs, the project also trained more than 100 peer educators in the use of IEC materials and added numerous outlets where condoms could be purchased easily. More than 1.5 million condoms were sold from July through December 2001. PSI also established a new VCT center in Bamako called "l'Eveil" offering rapid testing and counseling for HIV. The project also conducted a study of client satisfaction with VCT services at l'Eveil center.

In 2003, PSI conducted a baseline survey in Timbuctou, Gao, and Kidal, as well as three mining centers, to establish a baseline for certain variables before expansion of the program into those regions. The

[17] Population Services International. 2003. Pathways to Health: An integrated social Marketing Program. Report submitted to USAID April 14, 2003.

groups targeted were younger people in the general population (ages 15 to 35), CSWs, truckers, female mobile vendors, and workers in gold mines. The main topics covered were knowledge of HIV and STIs, individual sense of risk for HIV infections, ideas about condom use, and the nature of risky behavior. Risky behavior involved having multiple sexual partners, having sex without a condom, and avoiding treatment of an STI. A follow-up survey was conducted in 2006.

At the end of 2003, PSI received major funding for a new project called the Pathways to Health Project: about $7.5 million from USAID and $4.3 million from German assistance. The groups targeted by this new program were CSWs, long-distance truckers, female mobile vendors at bus and truck stops, and migrant seasonal workers in rice fields, cotton fields, and mines. Some 23 NGOs were implicated in this new program. The objective of the Pathways to Health was to "reduce morbidity and mortality due to HIV/AIDS by increasing the adoption of safer sexual practices among persons engaged in high-risk sexual practices." In other words, the project sought to persuade people engaged in high-risk practices to change to lower-risk practices. Project success was measured by the degree it reached its objectives, which were the numbers of reproductive health products distributed (mainly condoms) and indicators of knowledge measured by PSI periodic surveys.

The PSI approach to behavior change is guided by its Behavior Change Framework. PSI seeks to persuade individuals to change how they interact with others in three ways: (1) to have fewer sexual partners, (2) to use condoms more often, and (3) to treat STI more rapidly. All three of these actions dependent not only on the availability and affordability of condoms, but also certain psychological concepts that may or may not be linked to actions, such as self-efficacy, solution efficacy, social support, and personal risk assessment. This view of how social change occurs is common in social marketing, but has not always fulfilled its promise.

The activities of Pathways to Health were presented as milestones:

- **Milestone #1:** Extension of the media campaign for the prevention of HIV and STIs to the northern regions of Timbuktu and Gao that features 6,500 radio spots in local languages on HIV prevention and STI treatment.
- **Milestone #2:** PSI signed a contract with GP/SP to conduct training and workshops on BCC through a group of 23 local NGOs linked to GP/SP. BCC materials were developed and personnel trained to present them to higher-risk groups in cities around the country.
- **Milestone #3:** Advocacy with religious leaders from the northern regions of Timbuktu, Gao, and Kidal. Three training workshops were organized to train Muslim leaders to discuss HIV prevention.
- **Milestone #4:** Behavior communication campaign for youth that featured radio and television spots about the risks of HIV transmission and the need for parents and children to discuss such issues. An interactive web site was developed with health information and interactive games.
- **Milestone #5:** Assessment of the quality of VCT services at l'Éveil sites in Bamako, Kayes, and Segou, and media campaigns to encourage HIV testing. The l'Eveil centers tested 4,000 clients from July 2003 through March 2004.
- **Milestone #6:** Partnership with the Centrale d'Achats Générique (CAG) to increase the distribution of social marketing products, particularly condoms. A new distribution system was created to facilitate condom distribution around the country. PSI provided the CAG with technical assistance sales training and management, budgeting, and marketing and distribution surveys. New packaging and pricing structure for protector condoms were discussed.
- **Milestone #7:** A survey among higher-risk groups (CSWs, truckers, roadside vendors, and youth ages 15–19 on their sexual partners, HIV and STI knowledge, and condom use.

The milestone section is followed by several pages of key indicators, which are a list of project activities (radio spots, TV spots, materials distributed, and leaders trained), the number expected, the numbers

achieved, and a percentage of achievement compared with the target. PSI exceeded its targets for half the indicators.

A technical report on PSI activities from October 2004 to September 2005 describes activities that continued from the previous year, combined with a description of special activities to further train personnel in communication for behavior change and to set up a system for supervision of project activities. GP/SP continued its supervision of the 23 NGOs committed to project activities. A major part of program activity was devoted to retraining of NGO personnel and setting up a system to monitor and report project activities.

The period of October 2005 to September 2006 saw a continuation and expansion of activities from the previous two years, plus a survey among members of the higher-risk groups to assess their knowledge and behavior related to HIV and their use of condoms. The accomplishments during this period included broadcasting 257,526 radio spots in the northern regions to promote HIV/AIDS awareness and prevention, conducting 214 assessments of events to promote HIV awareness, and distributing more than 62,000 female condoms. Although the exact ways of reaching such estimates is unclear, the 23 NGOs estimated that they reached more than 600,000 (615,410) individuals with their messages and materials. In addition, 7,485 text messages and spots were shown on television to target higher-risk groups and youth and 14,802 individuals were counseled and tested for HIV at VCT centers.

The 2006 PSI survey interviewed individually about 500 CSWs, 500 truckers, and 500 female ambulatory vendors with a questionnaire to compare results with the 2003 survey. Researchers found a relation among CSWs who were exposed to messages about condoms and actual condom use. Researchers found no changes in a personal sense of being at risk for HIV or other indicators of behavior change.

According to the PSI report, the survey among the three at-risk groups did not show the expected changes in knowledge or behavior when compared to earlier surveys. The report recommended to do more of the same: **Redouble** efforts to improve knowledge of HIV; **Widen** communication for behavior change; and **Improve** the communication for behavior change. The report implied that given more time, behavior change will follow.

PSI activities from October 2006 to September 2007 widened to include more media campaigns that targeted the general population rather than mainly groups at higher risk for HIV infection. Project activities featured four themes: (1) continued assistance to GP/SP, and the distribution of female condoms, (2) training of more religious leaders, (3) more active promotion of VCT services and the establishment of new VCT centers, and (4) collaboration with the CAG to increase the availability of condoms around the country. Nearly 10.5 million condoms were sold in 2007.

An end-of-project final report for Pathways to Health was written in 2009 to report on PSI activities through December 2008. Accomplishments of the last year or two included heightened collaboration with GP/SP to identify NGOs to work with high-risk groups; development of reporting and evaluation tools, increased use of mass media to discuss stigma, risk prevention, and condom use; and continued expansion of VCT centers and evaluation of services offered. PSI received another $6.6 million for a 3-year follow-on project in October 2008, and a portion of those funds went to HIV prevention. PSI used the funds to promote and improve condom distribution, to expand the mobile VCT program and to continue to monitor the quality of VCT services. In the final year of the project, PSI collaborated with ARCAD-SIDA to extend their services for MSM to Mopti and Kayes. For several years, ARCAD-SIDA had been offering screening and treatment services for MSM in numerous sites in Bamako.

The leitmotif of PSI assistance was the social marketing of products and services: to persuade targeted populations to change their sexual relations to reduce their risk of HIV and STIs. The message was carried utilizing media, materials, and individual discussions and drew on images from popular culture in Mali to publicize the messages. Each year PSI found new ways to disseminate messages about HIV prevention. PSI set goals for the number of messages diffused or the number of events held or the

number of people trained or condoms distributed. In many cases, PSI exceeded its own goals. Seen in this light, PSI appeared to succeed quite well in reaching its goals.

The overall impact of all of these programs is less clear; neither PSI nor USAID described the objectives in terms of specific impact indicators. The overall objective of the Corridors of Change and Pathways to Health projects was to reduce the incidence of HIV infection or to reduce the morbidity and mortality resulting from HIV infection.

Groupe Pivot, Santé Population

GP/SP played a major role in the prevention of HIV/AIDS and STI programs from 2003 to 2006 in its coordination of NGOs that were invited to participate in the project. USAID provided funding to GP/SP, and passed funds to local NGOs that submitted proposals to GP/SP and received approval for funding. The project had four target groups: (1) CSWs, (2) truck drivers in bus and truck stops, (3) ambulatory vendors in these same locations, and (4) seasonal migrant workers. The project did not target either maids or ticket touts at bus and truck stops, but both groups were still exposed to media messages on behavior change. Much of the project interventions took place along the major transport routes out of Bamako and Sikasso. In addition, the project operated in the areas around gold mining, cotton production, and sugar refineries.

GP/SP signed agreements with each of the 23 NGOs that outlined their workplan and budget items for each year. GP/SP emphasized the use of peer educators and community volunteers *(*animateurs) to communicate messages. Peer educators gave health talks, showed videos, made house calls, and distributed radio cassettes dealing with topics related to HIV prevention, and they prepared short radio spots for local broadcasting. The GP/SP organized two rounds of supervision for each NGO, visits that served to bolster relations between the NGOs and local institutions, and provided technical support as needed. GP/SP received assistance from PSI in the identification of local NGOs working with high-risk groups, the training of peer educators, and the development of communication materials.

CARE Mali

Care Mali received a major contract in August 2003 to increase the use of health care services and to improve health practices in the home through a project called Project Keneya Ciwara (PKC). The project had three main objectives: (1) to improve the quality of health service delivery; (2) to promote the adoption of healthy household practices and services; and (3) to create a social and community context that seeks to improve health. In short, the project was to operate at the level of the community by strengthening of community health associations and civil society organizations at the household level through health education and behavior change and at the health service facility by integrating services at the community health centers. The project operated in all regions of the country.

This first 5-year contract for community-based health care improvement included a subcontract with GP/SP to build the capacity of NGOs working to improve health. GP/SP worked with PKC to evaluate the experiences and expertise of NGOs that apply for funds to implement projects; however, neither the technical application for the project nor the final performance report mention specific interventions related to HIV/AIDs or STIs. Most of the interventions involved training in community-based activities and improvements in maternal and child health services.

The follow-on project, known as Project Keneya Ciwara II (PKCII), continued the emphasis on the training of community health workers and improvement of MCH services, but it also added support for NGOs that promote awareness and treatment of STIs and HIV among higher-risk groups. The groups identified were CSWs, ticket touts and ambulatory vendors at bus and truck stops, MSM, and seasonal migrant workers. The NGOs distributed materials for BCC on HIV/AIDS that were prepared following the methods developed by PSI and GP/SP, actively promoted testing for HIV and STIs, gave out or sold condoms, and trained peer educators in knowledge of HIV/AIDS and communication skills. During the

final year of the project, PKCII reached an estimated 25,000 ticket touts, 25,000 ambulatory vendors, and more than 13,000 CSWs with HIV/AIDS messages.

The HIV/AIDS component of PKCII was relatively small compared to child health that focused on prevention of malaria, diarrhea, and malnutrition; however, considering the large project area and its multilayered approach, the component has the potential to reach a large number of people at higher risk of HIV. GP/SP trained and supervised the leaders of nine NGOs to promote accurate knowledge and awareness of testing and treatment options among groups at higher risk of HIV and STIs.

Soutoura

Soutoura was founded in 2000 as an NGO to provide health services for CSWs and their clients in Bamako. Soutoura is part of the consortium of NGOs that were supervised initially by GP/SP. The founders sought to provide a place where women at higher risk for HIV and STIs could feel safe and secure in seeking treatment and support. The group began activities in Bamako in 2000, and by 2004 it was active in Kati, Kayes, and Niono and received funding in 2002 from the CDC. The CDC helped Soutoura organize syndromic treatment of STIs and conduct testing and counseling for HIV. After 2012, Soutoura began to receive funds directly from USAID.

Soutoura provides counseling and HIV testing for CSWs and their clients who are willing to be identified and STI diagnosis and treatment. The goal of medical services is to provide a physical exam every month for CSWs registered by Soutoura. Services offered include health education about the risks of HIV and STI transmission through public meetings and peer education; screening, diagnosis, and treatment for STIs at Soutoura clinics; HIV counseling and testing; referral of HIV positive individuals to antiretroviral (ARV) treatment centers; social support for people living with HIV; and the sale of condoms.

Each medical center is served by a doctor trained in the syndromic treatment of STIs and the treatment of common illnesses provoked by HIV infections. Each center also has on staff several current or former sex workers who serve as counselors and peer educators who also visit hotels and bars to sell condoms and encourage women to visit the Soutoura sites. The periodic reports submitted by Soutoura show great attention to detail about the clients they have served each month and the exact services rendered. Yet Soutoura is relatively small, and it operates in only four urban centers.

According to a report from 2010, Soutoura had screened about 3,600 CSWs and had communicated messages about HIV prevention to about 32,000 sex workers. It also sold more than 1 million condoms. It seems critical that such services also be offered in other urban centers, such as Sikasso, Segou, and Mopti.

ARCAD-SIDA

ARCAD-SIDA (L'Association d recherche et communication et d'accompagnement au domicile des personnes atteintes du VIH et avec le SIDA) is another NGO that has been collaborating with GP/SP. The organization, along with its treatment partner branch CESAC (Centre d'écoute, de soins, d'animation, et de conseil pour les personnes vivant avec le VIH/SIDA), has been providing social and medical services to people diagnosed as HIV positive since the mid-1990s. CESAC provides HIV and CD4 count testing and ARVs and follow-up services that promote adherence to antiretroviral therapy (ART). ARCAD-SIDA works mostly with MSM, CSWs, prisoners, the disabled, and child victims of sexual violence. They provide counseling and referrals to social services for members of these groups. For some years, they received USAID funds through PSI. After 2009, they began receiving funds directly from USAID.

Both Soutoura and ARCAD-SIDA seek to educate their clients about the risks of STI and HIV transmission by training peer educators for continual health education. They also operate medical centers where clients receive counseling, screening, and treatment for STIs, HIV testing, and ARVs.

These NGOs have sought to develop social and medical services tailored to the special needs of sex workers, their clients, and MSM.

Evaluation Questions:

How were the programs successful? What challenges did they face?

Successes

The financial assistance provided by USAID has led to several major achievements. First, through the CDC, it has provided data on HIV prevalence among pregnant women and several high-risk groups in a context where no data had been available. Second, through GP/SP and the American partner NGOs, the assistance has supported health education campaigns for the general population about the dangers of HIV/AIDS and has made male condoms generally available throughout the country. The major player in this realm has been PSI, which has also been able to set up a system for making condoms available throughout the country. Third, USAID has funded the establishment and operations of VCT centers and centers for STI treatment and ART programs. The government and other donors have been active in providing STI and HIV treatment in the past 8–10 years, but the HIV prevention activities related to health communication has been funded largely by USAID.

Largely through GP/SP and PSI, beginning in 2001, USAID has funded health education about HIV/AIDS through the mass media, mainly television and local radio stations. PSI used more than 100 local radio stations to broadcast messages about HIV transmission and ways to prevent it. Both groups also have produced great quantities of print materials to educate the general public, with a special emphasis on youth. PSI also targeted CSWs, truckers, and female vendors at truck and bus stops to follow the regional HIV prevention programs in West Africa that focused on these occupational groups.

The social marketing of condoms was dominated by PSI, which received several million dollars for health communication and social marketing early in the period. Working with GP/SP, PSI distributed funds to local NGOs to promote condom use through not only the media, but also through public meetings, videos, and peer education. Project objectives were described in terms of how many people were contacted, condoms were distributed, and messages were disseminated. According to one respondent, PSI conducted surveys every six months to see if its messages had been understood and if condoms were available. PSI has also conducted studies to better identify factors that impede the use of condoms; however, as one key informant remarked, "behavior change is a slow process, and our projects have a limited time duration." Changes in approaches also can be disruptive, the informant noted.

Serious interest in the promotion of HIV testing and the establishment of VCT centers in Mali began in 2004. Soon afterward, USAID began supporting the CDC in developing algorithms for treatment of STIs and training of health care personnel in STI case management throughout the country. HIV prevalence data were produced through the SSS and surveys in urban areas among groups at elevated risk of HIV infection. Several individuals that work for a government agency were interviewed and spoke with great appreciation of this type of support, which produced data they found useful. They would appreciate some group to provide the technical assistance needed to continue with the SSS and ISBS. They realize that the funding relationship between the CDC and USAID shifted in 2009, and thus another group, such as Columbia University, may lead the technical assistance and funding for more rounds of SSS or ISBS.

Government agency staffs that work with HIV/AIDS praised highly the USAID funding of the CDC until 2009 because they benefitted from the data produced on HIV prevalence. Those staff members also urged all donors to follow the same priorities and align themselves with the national strategic plan in any proposed activity. Representatives of Malian NGOs spoke more about how limited funds and short-

term projects shaped what they were able to accomplish. They relied heavily on training of peer educators to communicate their messages.

Challenges

We asked the key informants about the challenges they faced in program design or implementation. Here are some of the issues they listed:

- So many projects are of short duration, so by the time we prepare our personnel and materials for distribution or train the peer educators, the project has ended.
- Funding is often uncertain.
- Many respondents mentioned the lack of coordination among donors that fund HIV prevention and treatment.
- Soutoura and ARCAD-SIDA expressed concerns that the general population does not accept or understand that CSWs and MSM need medical and social services. Many people consider the offer of such services to be a sign of condoning the activities of the group.
- Assistance projects are often of short duration, yet behavior change comes very slowly.
- Several representatives of NGOs noted that NGOs do not sufficiently collaborate among each other or share news of their activities.

Informants also were asked if they could make suggestions for improving projects funded by USAID. Here are some of the recommendations offered:

- HIV prevention programs should not focus on HIV/AIDS, but rather on sexual relations.
- HIV prevention efforts should target young people and their sexual relations.
- USAID should be far more flexible when it comes to funding mechanisms; they should be more like UNICEF and other United Nations agencies in that regard.
- Extend project lengths to more than 5 years because behavior change occurs very slowly.
- Support the CDC or another entity to provide technical assistance for another ISBS and the dissemination of the results.
- Expand the scope and reach of prevention of mother-to-child transmission services.
- Donors now need to learn and follow the priorities and principles of the Ministry of Health as outlined in its most recent Strategic Plan for HIV/AIDS activities; donors must put aside their own programs they would like to implement.
- Provide a steady source of funding for a series of programs to introduce stability in funding and permit longer-term planning.

The challenges and suggestions for future programs derived from the key informant interviews focus on the short duration of many contracts for interventions, limited funds available, and the need to revise at-risk target populations. Representatives of smaller NGOs were the most concerned with short-term projects with limited funds, but many noted that changes in behavior occur slowly, while projects are limited in time. Government representatives (HCNLS and CSLS) talked about the importance of aligning USAID strategy with that of the Ministry of Health, and of the importance of USAID providing technical assistance to facilitate the collection of reliable data on HIV prevalence and conducting pertinent analyses to enable the government to monitor the situation.

Evaluation Question:

What resources (funds, skills, materials) were placed at the disposition of the implementing NGOs?

In the following paragraphs we summarize the USAID financial resources placed at the disposition of implementing NGOs; information on other nonmonetary resources is unavailable. Table 5 shows the level of effort in funding for fiscal years 2002–2010 for the groups or organizations that received the most funding.

The document review showed USAID support in a rather complex set of relationships that involve GP/SP, PSI, CARE, many local NGOs, and government entities. The complexity of the funding mechanism makes it difficult to set up a system to monitor and assess accountability. A number of people involved in planning and directing preventive activities in small NGOs spoke extensively about the problems of short projects with uncertain funding. As several noted, the capacities of small NGOs to manage funds and personnel and implement programs varied tremendously.

Table 5: USAID funding support for HIV/AIDS in Mali 2002-2010 (in U.S. dollars)

	2002	2003	2004	2005	2006	2007	2008	2009	2010
CDC	1,383,411	1,000,000	500,000	800,000	1,261,834	1,681,122	500,000	500,000	500,000
PSI	811,739	1,675,279	1,721,764	1,522,508	797,526	652,825	200,590	550,050	609,527
MOH	192,550	169,250	200,000	147,534	237,300	48,055	231,000	NL*	NL*
Futures	300,000	350,000	390,000	250,000	450,000	350,000	400,000	400,000	505,000
CARE	NL*	200,000	NL*	NL*	NL*	NL*	781,000	904,962	891,465
ARCAD-SIDA	NL*	NL*	NL*	NL*	NL*	47,111	NL*	203,300	NL*

*Not listed

Total funds allocated were approximately USD $3,000,000 in 2002, 2008, 2009, and 2010, and 4,000,000 in 2003, 2004, 2005, 2006, and 2007.

4. Changes in Outcomes 2000–2009

This section addresses the second evaluation question, "What changes in HIV-related knowledge and behaviors, and HIV and STI prevalence (outcomes) occurred among Malian medium-risk groups (truckers, ticket touts, mobile female food vendors, and household maids) from 2000–2009?" and the sub-questions:

- To what extent did HIV prevention knowledge change among these populations?
- To what extent did consistent condom use change with different kinds of partners?
- To what extent did HIV and STI prevalence change among these groups?
- Do the observed trends in outcomes remain when controlled for demographics and other confounding factors?

The questions are answered through the secondary analysis of the four rounds of ISBS data. The section starts with demographic characteristics of survey respondents for each year. The first three sub-questions are then answered, incorporating the answer to the fourth.

Demographic Characteristics

Age

Table 6 shows the age distribution of the various risk groups by year of the survey. Maids were the youngest group and drivers were the oldest, and there appears to be a slight shift toward older ages for all groups over time.

Table 6: Age distribution of respondents by risk group and year of survey

	2000	2003	2006	2009
Truckers (N)	**570**	**660**	**715**	**880**
15–24 (%)	46.5	47.3	39.9	39.8
25–34 (%)	35.1	29.4	39.7	34.8
35+ (%)	18.4	23.3	20.4	25.5
mean age	27.5	28.5	28.5	29.1
Ticket Touts (N)	**577**	**521**	**636**	**685**
15–24 (%)	40.7	39.5	35.4	38.8
25–34 (%)	35.2	36.1	39.0	35.0
35+ (%)	24.1	24.4	25.6	26.1
mean age	29.1	29.2	29.9	29.6
Maids (N)	**499**	**839**	**598**	**684**
15–24 (%)	95.4	90.4	85.3	92.0
25–34 (%)	4.0	8.7	13.2	7.3
35+ (%)	0.6	1.0	1.5	0.7
Mean age	17.4	18.1	19.0	18.3
Female Ambulatory Vendors (N)	**640**	**683**	**845**	**1,092**
15–24 (%)	74.5	66.9	63.0	66.9
25–34 (%)	18.4	23.0	23.6	22.3
35+ (%)	7.0	10.1	13.5	10.8
mean age	21.5	22.9	23.6	23.0

Marital Status

From 2000 to 2009, nearly two-thirds of the men surveyed in the groups of truckers and ticket touts were single or never married. The proportion of men that were married increased over the time of the surveys for truckers (from 28–40%) and more moderately for ticket touts (from 33–38%). For both groups, the proportion of men that had more than one spouse ranged between 6–8% across all years.

The vast majority of maids (around 80%) were single or never married. The proportion of maids in the 2006 sample that were married (25%) was somewhat higher than in the other three samples (16–18%). Between 5–6% of maids indicated they were married and had co-wives, though in 2006 the proportion jumped to 11% (Table 7).Among female ambulatory vendors, the number of single, never-married women decreased from 61–49% between 2000 and 2009, and 8–16% reported being married and having co-wives.

Table 7: Marital status of respondents by risk group and year of survey

	2000	2003	2006	2009
Truckers (N)	**570**	**660**	**715**	**878**
Single/never married (%)	70.7	63.5	62.7	58.7
Currently married (%)	28.3	35.3	35.8	39.6
Divorced/widowed (%)	1.1	1.2	1.5	1.7
Currently married with >1 spouse (%)	7.4	8.0	6.0	6.5
Ticket Touts (N)	**577**	**521**	**636**	**686**
Single/never married (%)	65.0	60.8	60.5	60.9
Currently married (%)	33.1	36.3	37.3	37.6
Divorced/widowed (%)	1.9	2.9	2.2	1.5
Currently married with >1 spouse (%)	6.9	6.1	5.2	6.4
Maids (N)	**499**	**839**	**598**	**684**
Single/never married (%)	82.4	79.4	73.6	80.6
Currently married (%)	16.2	18.2	24.8	18.1
Divorced/Widowed (%)	1.4	2.4	1.7	1.3
Currently married with one or more co-wives (%)	5.8	5.0	11.4	6.0
Ambulatory Vendors (N)	**640**	**683**	**845**	**1,092**
Single/never married (%)	61.3	52.9	50.2	48.7
Currently married (%)	31.3	36.9	42.1	43.8
Divorced/Widowed (%)	7.5	10.3	7.7	7.5
Currently married with one or more co-wives (%)	8.1	14.6	15.7	13.9

Age at first marriage

Among respondents that had married, the mean age at first marriage was fairly consistent across time for all groups. Men married on average 10 years later than women. Among women, ambulatory vendors married slightly later than maids.

Table 8: Mean age at first marriage, by risk group and year of survey

	2000	2003	2006	2009
All Truckers	N= 167 (26.2)	26.1 (n=240)	26.3 (n=261)	26.9 (n=351)
Ticket Touts	27.1 (n=199)	26.1 (n=202)	26.6 (n=244)	26.1 (n=262)
Maids	16.3 (n=87)	16.2 (n=171)	16.0 (n=155)	16.3 (n=129)
Ambulatory Vendors	16.8 (n=248)	16.9 (n=320)	16.9 (n=420)	16.8 (n=557)

Sex with different partner types

Table 9 shows the proportion of respondents who reported sexual relations with different types of partners over time for each group. The proportion of truckers that reported sex with a prostitute dropped from 24 to 14% in 2003 and 2006, while that proportion among ticket touts changed very little over time. The proportion of maids and vendors that reported sex with boyfriends and occasional partners changed little over time.

Table 9: Proportion of respondents who had sexual relations by partner type

	2000	2003	2006	2009
Truckers				
Is currently married (proxy for sex with spouse)	28.3	35.3	35.8	39.6
Has a girlfriend (proxy for sex with a girlfriend)	44.9	40.5	38.0	41.4
Had sex with an occasional partner in last 6 months	24.7	17.4	18.5	22.9
Had sex with prostitute in last 6 months[1]	23.6	13.6	13.7	18.0
Ticket Touts				
Is currently married (proxy for sex with spouse)	33.1	36.3	37.3	37.6
Has a girlfriend (proxy for sex with a girlfriend)	44.5	41.1	40.4	42.9
Had sex with an occasional partner in last 6 months	24.7	25.3	23.7	26.1
Had sex with prostitute in last 6 months[1]	24.4	20.6	18.1	21.4
Maids				
Is currently married (proxy for sex with spouse)	16.2	18.2	24.8	18.1
Has a boyfriend (proxy for sex with those that reported sex with boyfriend)	15.0	18.4	15.7	18.6
Had sex with an occasional partner in last 6 months (among those who have ever had sex)	6.1	8.0	4.9	8.2
Ambulatory Vendors				
Is currently married (proxy for sex with spouse)	31.3	36.9	42.1	43.8
Has a boyfriend (proxy for sex with a boyfriend)	33.3	35.4	29.5	26.1
Had sex with an occasional partner in last 6 months (among those who have ever had sex)	8.2	7.4	7.1	5.3

[1] Includes respondents who answered having sex with a prostitute in the past 30 days or in the past 6 months.

Nationality

Across the years and across the groups' surveys, the majority of respondents were Malian. For ticket touts, maids, and female ambulatory vendors, more than 95% of respondents were from Mali. It was more common for truckers to be foreigners, although the proportion of foreign truckers decreased substantially between 2000 (24%) and 2009 (9%). Outside of Mali, the highest representation among truckers came from Senegal, Ivory Coast, Burkina Faso, and Ghana (Table 10).

Table 10: Nationality of respondents by risk group and year of survey

	2000	2003	2006	2009
All Truckers	**570**	**634**	**695**	**877**
Mali (%)	76.1	79.0	90.5	91.0
Ivory Coast (%)	4.7	4.4	3.5	2.9
Burkina Faso (%)	4.4	2.2	3.9	1.7
Ghana (%)	2.8	3.9	0.7	0.2
Nigeria (%)	0.5	0.2	0.0	0.2
Senegal (%)	9.1	10.3	1.4	0.3
Other (%)	2.3	0.0	0.0	3.7
Ticket Touts (N)	**577**	**519**	**618**	**684**
Mali (%)	96.4	97.9	95.6	93.6
Ivory Coast (%)	1.9	0.0	2.4	3.5
Burkina Faso (%)	1.0	1.5	1.9	1.6
Ghana (%)	0.7	0.0	0.0	0.2
Nigeria (%)	0.0	0.2	0.0	0.0
Senegal (%)	0.0	0.4	0.0	0.0
Other (%)	0.0	0.0	0.0	1.2
Maids (N)	**499**	**839**	**598**	**684**
Mali (%)	99.4	99.8	98.8	98.7
Ivory Coast (%)	0	0	0	0.4
Burkina (%)	0.6	0.2	1.2	0.9
Ambulatory Venders (N)	**640**	**678**	**837**	**1091**
Mali (%)	98.4	98.4	97.9	96.7
Ivory Coast (%)	0.6	0.6	0.8	1.4
Burkina (%)	0.5	0.9	0.8	0.9
Ghana (%)	0.3	0.0	0.0	0.1
Nigeria (%)	0.0	0.0	0.0	0.1
Senegal (%)	0.2	0.2	0.5	0.1
Other (%)	0.0	0.0	0.0	0.7

Migration

Respondents were asked if they usually migrate, for example for agricultural work or to visit relatives in the family. Migration was reported most frequently by maids and least frequently among truckers. The proportion reporting migration varied across years without any clear pattern for any group (Table 11).

Table 11: Proportion of respondents who report usual migration by risk group and year of survey

	2000	2003	2006	2009
All Truckers	37.4 (n=570)	18.6 (n=660)	30.1 (n=715)	33.9 (n=881)
Ticket Touts	50.8 (n=577)	32.6 (n=521)	46.4 (n=636)	36.6 (n=686)
Maids	44.5 (n=499)	49.1 (n=839)	52.5 (n=598)	53.2 (n=684)
Ambulatory Vendors	31.1 (n=640)	38.2 (n=683)	34.6 (n=845)	41.5 (n=1091)

Schooling

All groups experienced increases in the proportion who had attended school (Table 12). About half of the men surveyed had some years of schooling, and the percentage who had some schooling increased from 2000 to 2009 for truckers (from 46–59%) and for ticket touts (from 49–56%). For both groups, the average number of years of schooling for those having attended was close to six. Maids had the lowest levels of schooling, with the proportion having had any schooling ranging from 8% in 2000 to 22% in 2009. Among those with some schooling, the average number of years was consistently less than four. The proportion of female ambulatory vendors who had some schooling increased from 27–38% between 2000 and 2009, with modest gains in the average duration of schooling from 5.2 to 5.6 years. Among these sample populations, men had a great deal more education than women.

Table 12: Proportion of respondents with some schooling and average years of schooling by risk group and year of survey

	2000	2003	2006	2009
All Truckers (N)	**570**	**660**	**714**	**879**
Some schooling (%)	45.8	46.1	54.3	59.3
Among those with some school, number of years (mean)	5.8	5.8	6.1	5.9
Ticket Touts (N)	**577**	**521**	**635**	**684**
Some schooling (%)	49.4	45.7	51.4	55.7
Among those with some school, number of years (mean)	6.0	5.5	6.0	6.3
Maids	**499**	**839**	**598**	**684**
Some schooling (%)	7.8	10.5	16.4	22.0
Among those with some school, number of years (mean)	3.8	3.6	3.6	3.8
Ambulatory Venders	**640**	**683**	**845**	**1092**
Some schooling (%)	26.9	27.5	32.5	38.0
Among those with some school, number of years (mean)	5.2	5.3	5.2	5.6

Income

Between 2000 and 2009, the average monthly income or salary of truckers and ticket touts fluctuated at about 40,000 CFA. The average monthly income of the women surveyed was lower than that of men. Female ambulatory vendors made about half as much as the male truckers and ticket touts. While they saw increases in their average income in 2003, this lowered again in 2009. The average income of maids was considerably lower than other groups, but did see some increase between 2000 and 2009 from CFA 5000 to 8000 per month (Table 13). Considering inflation,[18] none of the groups experienced much of an increase in income from 2000 to 2009.

Table 13: Average income of respondents by risk group and year of survey

	2000	2003	2006	2009
All Truckers	33,983 (n=517)	40,558 (n=321)	36,372 (n=554)	44,712 (n=793)
Ticket Touts	46,956 (n=529)	37,284 (n=252)	31,328 (n=486)	41,360 (n=609)
Maids	4,920 (n=488)	5,141 (n=833)	5,948 (n=591)	7,947 (n=680)
Ambulatory Vendors	15,424 (n=357)	30,408 (n=562)	27,908 (n=549)	23,855 (n=950)

[18] According to the CIA Factbook of 2010, the average annual inflation rate (consumer price index) from 2000 to 2009 was about 3%.

Changes in Outcomes

Evaluation Questions:

To what extent did HIV prevention knowledge change among these populations?

Do the observed trends in outcomes [HIV prevention knowledge] remain when controlled for demographics and other confounding factors?

This section answers this evaluation sub-question, shows trends in knowledge over time for each group, and summarizes results of the regression analysis to assess whether trends in knowledge remain when controlled for demographic characteristics and other confounding factors. The assessment includes responses to questions about two areas:

- Awareness of HIV
- HIV prevention methods

The tables show trends from 2003 to 2009 because most of the knowledge questions were not asked in 2000. The exception is a question about knowledge of transmission of HIV from mother to child, which was asked of women only in 2000 and 2009.

Awareness of HIV

In all three surveys where the question was asked, awareness of HIV is consistently near 100% for all groups (Table 14).

Table 14: Proportion of respondents who have ever heard of HIV

	2003	2006	2009
Truckers	99.7% (n=660)	100.0% (n= 715)	100.0% (n=874)
Ticket Touts	100.0% (n=521)	99.8% (n=635)	99.4% (n=685)
Maids	98.6% (n= 839)	98.7% (n=598)	99.1% (n=684)
Ambulatory Vendors	100.0% (n= 683)	99.8% (n=845)	99.7% (n=1089)

HIV Prevention Methods

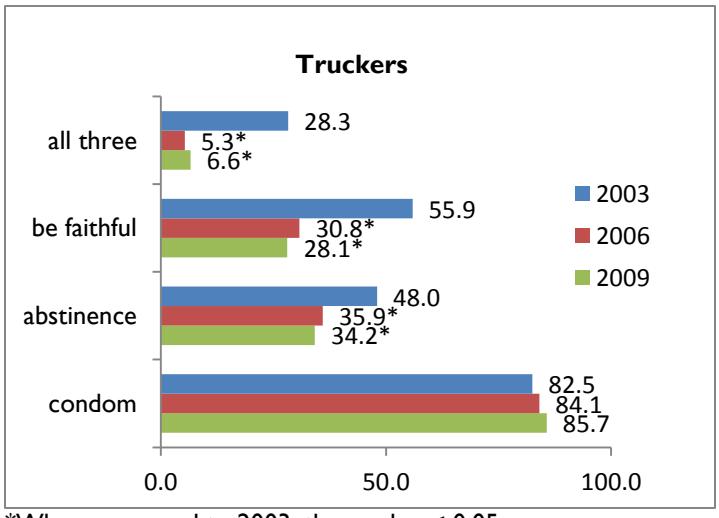
Respondents were asked to spontaneously name ways of preventing HIV infection. We examine the proportion that cite condom use, abstinence, and faithfulness, as well as the proportion that cite all three methods.

Across all groups, respondents were most likely to name condoms as an effective method for preventing HIV. Abstinence and faithfulness were less frequently cited as preventive measures in all groups (Figures 2-5). Women, and maids in particular, had lower levels of knowledge overall as compared to the male respondents. One notable exception is that female ambulatory vendors are the most likely group to mention faithfulness as an effective prevention strategy.

Among truckers and ticket touts, the proportion that cited condoms as a method to prevent HIV infection increased slightly between 2003 and 2009 (from 83 to 86% and 88 to 89%, respectively), although the change does not achieve statistical significance for either group (Figures 2 and 3). On the other hand, for both truckers and touts, the percentage who name abstinence and faithfulness as preventive measures decreased significantly after 2003. Awareness of faithfulness as an effective

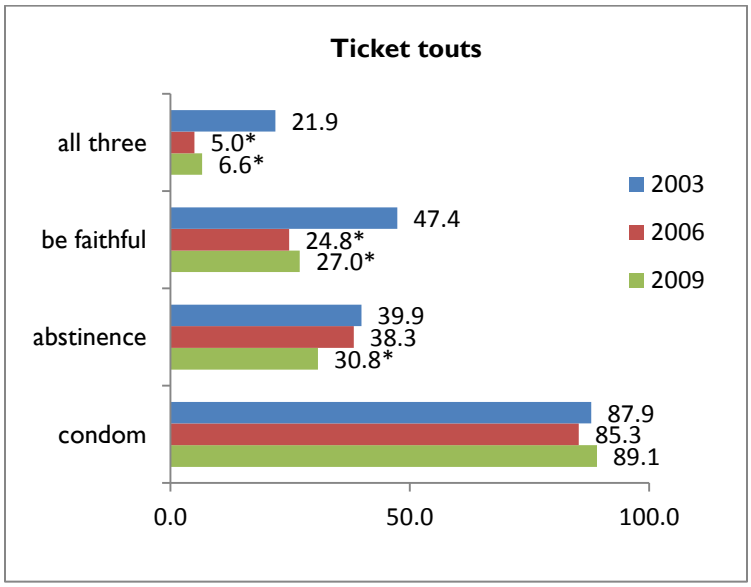
prevention measure showed the largest decline, dropping from 56% to 28% among truckers and from 47% to 27% among ticket touts from 2003 to 2009. The proportion of truckers and touts who could name all three prevention measures (ABC) was significantly lower in 2006 and 2009 as compared to 2003.

Figure 2: Proportion of truckers citing different methods of HIV Prevention



*When compared to 2003, the p value ≤ 0.05.

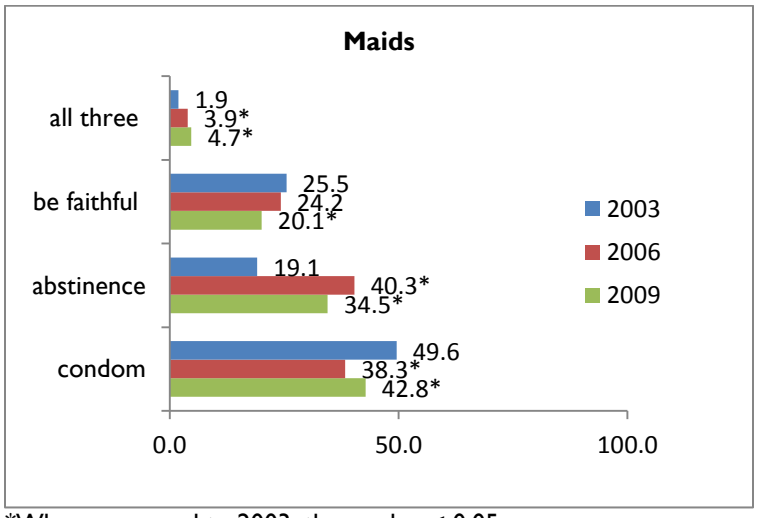
Figure 3: Proportion of ticket touts citing different methods of HIV Prevention



*When compared to 2003, the p value ≤ 0.05.

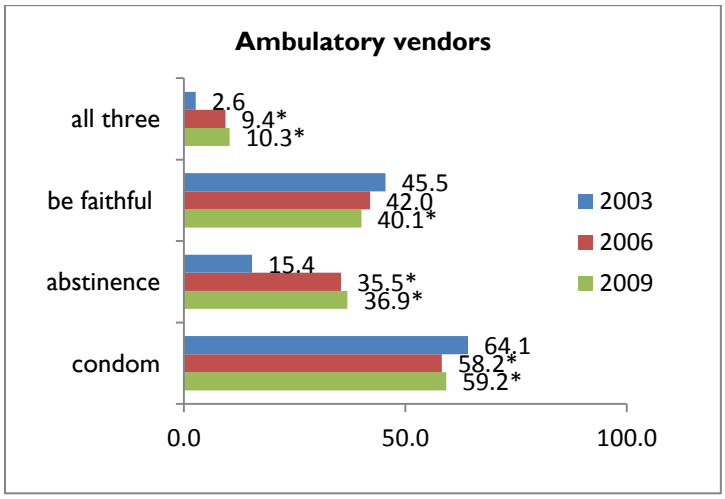
Among maids and female ambulatory vendors, only knowledge of abstinence increased significantly between 2003 and 2009 (from 19 to 35% and 15 to 37%, respectively), whereas the proportion that cited condoms and faithfulness as effective prevention methods showed small but significant declines over the same time (Figures 4 and 5). While remaining very low, the proportion that cited all three prevention methods did increase significantly over time (from 2% to 5% among maids and 3% to 10% among ambulatory vendors).

Figure 4: Proportion of maids citing different methods of HIV prevention



*When compared to 2003, the p value ≤ 0.05.

Figure 5: Proportion of female ambulatory vendors citing different methods of HIV prevention



*when compared to 2003, the p value ≤ 0.05In 2000 and 2009,

Women were asked whether HIV can be transmitted from mother to child (MTCT). Among both maids and female ambulatory vendors, knowledge of MTCT decreased significantly from 2000 to 2009 (Table 15). Knowledge of MTCT was higher among female ambulatory vendors than among maids.

Table 15: Proportion of women who had heard about mother to child transmission of HIV

	2000	2003	2006	2009
Maids	82.4 (n=324)	n/a	n/a	72.4* (n=528)
Ambulatory Vendors	86.0 (n=480)	n/a	n/a	80.1* (n=920)

*When compared to 2000, the p value ≤ 0.05.

The trends in knowledge described above remain after controlling for demographic and personal characteristics, namely age, education, nationality, salary, region, and whether the respondent usually migrates (Table 16). These results confirm that among men, knowledge of condom use as an effective preventive measure is statistically unchanged over time, whereas the odds of citing abstinence or faithfulness as HIV prevention methods decreases significantly after 2003. Knowledge of all three methods also decreased statistically over time; the odds of knowing all three preventive measures are 0.11 for truckers and 0.17 for touts in 2009 compared to 2003 after controlling for other factors.

After controlling for demographic and personal factors, knowledge of all three methods combined is two times higher among maids and almost five times higher among vendors in 2009 compared to 2003. When considered separately, only knowledge of abstinence increases over time, with the odds ratios in 2009 being 2.11 for maids and 3.28 for vendors, compared to 2003. Knowledge that condoms and faithfulness help prevent HIV decreases significantly. In 2009, both maids and vendors were significantly less likely to know that HIV could be transmitted from mother to child as compared to 2000 (odds ratio of 0.54 and 0.47, respectively).

Table 16: Adjusted odds ratios[1] for knowledge of HIV prevention methods

Men		**Truckers (N=1,631)**		**Touts (N=1,305)**	
Method of HIV prevention	**Year**	**Odds Ratio**	**95% Confidence Level**	**Odds Ratio**	**95% Confidence Level**
Condoms	2003(ref)				
	2006	1.16	0.77–1.74	0.71	0.42–1.18
	2009	1.39	0.94–2.05	0.88	0.53–1.48
Abstinence	2003(ref)				
	2006	0.39*	0.29–0.52	0.82	0.59–1.13
	2009	0.35*	0.26–0.46	0.56*	0.41–0.77
Being faithful	2003(ref)				
	2006	0.27*	0.20–0.37	0.35*	0.25–0.50
	2009	0.24*	0.17–0.32	0.34*	0.24–0.47
All three (ABC)	2003(ref)				
	2006	0.09*	0.06–0.15	0.19*	0.11–0.32
	2009	0.11*	0.08–0. 17	0.17*	0.11–0.27
Women		**Maids (N=2,079)**		**Vendors (N=2,056)**	
Method of HIV prevention	**Year**	**Odds Ratio**	**95% Confidence Level**	**Odds Ratio**	**95% Confidence Level**
Condoms	2003(ref)				
	2006	0.54*	0.43–0.68	0.71*	0.55–0.92
	2009	0.64*	0.51–0.79	0.68*	0.54–0.86
Abstinence	2003(ref)				
	2006	2.68*	2.09–3.43	2.93*	2.18–3.94
	2009	2.11*	1.65–2.70	3.28*	2.49–4.31
Being faithful	2003(ref)				
	2006	0.84	0.65–1.08	0.80	0.62–1.03
	2009	0.70*	0.54–0.91	0.79*	0.63–0.98
All three (ABC)	2003(ref)				
	2006	1.73	0.89–3.38	4.33*	2.32–8.08
	2009	2.36*	1.25–4.44	4.80*	2.64–8.71
Knows about MTCT	2000 (ref)				
	2009	0.54*	0.37–0.78	0.47*	0.31–0.72

*$p \leq 0.05$ when compared to the reference year (2003).

[1] Controlling for nationality, region, age, education, whether the respondent usually migrates and salary.

Condom Use by Partner Type

Evaluation Questions:

To what extent did consistent condom use change with different kinds of partners?

Do the observed trends in outcomes [condom use] remain when controlled for demographics and other confounding factors?

The next section examines the evaluation questions around condom use by partner type.

Respondents were asked whether they used a condom with various types of partners. Male respondents were asked about condom use with their spouse, girlfriends, occasional partners and prostitutes, whereas women were only asked about condom use with boyfriends and occasional partners. The timing of condom use varied somewhat depending on the type of partner. The survey asked about condom use at last sex with different partners, except for spouse where the men were asked about condom use at any time within the past six months. Results are summarized in Tables 17 and 18.

In general, men reported lowest levels of condom use with a spouse (11% for both truckers and touts in 2009) and the highest with a prostitute (88% and 94% in 2009 for truckers and ticket touts, respectively). Condom use with occasional partners is higher (around 70% for both groups) than with girlfriends (40% and 49% for truckers and ticket touts in 2009, respectively).

Among truckers and ticket touts, condom use with all types of partners increased significantly over time between 2000 and 2009, though not always in a linear fashion. The only notable exception is that the small gains in condom use at last sex with a prostitute remained statistically insignificant for truckers.

The largest increases in condom use occurred with occasional partners for both truckers (from 49–70%) and ticket touts (from 51–71%) between 2000 and 2009. And although the numbers remain modest, it should be noted that condom use with a spouse more than doubled over this time, increasing from 5% to 11% among truckers and from 4% to 10% among ticket touts.

While condom use at last sex with a girlfriend did increase statistically over time, fewer than half of truckers and touts report this behavior in 2009.

Among women, there were no significant changes in condom use with any type of partner between 2000 and 2009. Among maids, condom use with a boyfriend shows an upward trend between 2003 and 2009, although it does not achieve statistical significance. For female ambulatory vendors there was a significant decrease in condom use with a boyfriend between 2000 and 2003, but no statistical differences between condom use in 2000 and in 2006 or 2009. For both maids and ambulatory vendors, only one in five women report condom use at last sex with a boyfriend in 2009.

Condom use with occasional partners appears to increase after 2000 for maids, remaining stable at around 12% thereafter; however, the number of maids reporting an occasional partner, and therefore responding to the question on condom use, was too small to test for changes over time. Among female ambulatory vendors, there are no significant changes in condom use at last sex with an occasional partner over time.

Table 17: Condom use by partner type among truckers and ticket touts

	2000	2003	2006	2009
Truckers				
Spouse [a]	5.0 (n=161)	9.2 (n=228)	9.8 (n=256)	11.0* (n=344)
Girlfriend [b]	30.6 (n=252)	45.6* (n=263)	33.5 (n=272)	39.6* (n=361)
Occasional partner [b]	48.5 (n=136)	68.9* (n=106)	60.5* (n=129)	70.3*(n=192)
Prostitute [b]	85.4 (n=130)	82.4 (n=85)	89.5 (n=95)	88.1 (n=151)
Ticket Touts				
Spouse [a]	3.7 (n=191)	10.6* (n=189)	11.4* (n=237)	10.8* (n=250)
Girlfriend [b]	30.7 (n=254)	47.9* (n=213)	49.8* (n=255)	49.3* (n=294)
Occasional partner [b]	51.1 (n=141)	60.9 (n=128)	69.1* (n=149)	71.7* (n=173)
Prostitute [b]	79.1 (n=139)	78.1 (n=105)	89.5* (n=114)	93.7* (n=142)

[a] Condom use at any time in past 6 months.

[b] Condom use at last sex.

* $p \leq 0.05$, as compared to the 2000 reference period.

Table 18: Condom use by partner type among maids and female ambulatory vendors

	2000	2003	2006	2009
Maids				
Boyfriend [a]	11.1 (n=63)	16.4 (n=146)	16.1(n=81)	23.3 (n=116)
Occasional partner [b]	0 (n=14)	11.1 (n=36)	11.7 [c] (n=17)	12.1 (n=33)
Ambulatory Vendors				
Boyfriend [a]	22.1(n=208)	12.9* (n=241)	25.9 (n=239)	22.2 (n=275)
Occasional partner [b]	30.2 (n=43)	22.7 (n=44)	31.4 (n=51)	31.9 (n=47)

[a] Condom use at last sex with a boyfriend.

[b] Condom use at last sex with an occasional partner within last 6 months.

[c] These estimates are not reliable given the very small number of women reporting (N).

* $p \leq 0.05$ as compared to the 2000 reference period.

After controlling for demographic and behavioral factors, the findings of the multivariate regression are consistent with the bivariate findings described earlier. Tables 19 and 20 show the odds of using a condom with different partners in subsequent rounds of surveys compared to the 2000 baseline, after controlling for possible confounding factors.

Among truckers, for all types of partners except prostitutes, the odds of using condoms significantly increased between 2000 and 2009 after controlling for confounding factors. The odds of truckers using a condom with a spouse were 2.8 times higher in 2009 as compared to 2000, 1.84 times higher with girlfriends, and 2.85 times higher with occasional partners. The trends were not necessarily linear over time, and the odds of using a condom with girlfriends or occasional partners seem to have dipped and lost significance in 2006 before rising again in 2009.

Among ticket touts, the increase in condom use with a spouse is significant for all years, but it was not as high in 2009 as it was in 2006. For touts, the odds of using condoms with prostitutes increased each consecutive year, and in 2009 the odds were 7.43 higher than in 2000. The odds of using a condom with a girlfriend were 2.1 times higher in 2009 than in 2000 and 2.4 times higher with an occasional partner. For these partners, the odds ratios fluctuated very little for 2003, 2006 and 2009.

Table 19: Adjusted odds ratios[1] for condom use by partner type among truckers and ticket touts

Men	Truckers		Touts	
	Odds Ratio	95% Confidence Level	Odds Ratio	95% Confidence Level
Last sex with spouse	**N= 682**		**N= 606**	
2000 (ref)				
2003	1.49	0.50 – 4.43	3.51*	1.13 – 10.90
2006	2.29	0.86 – 6.09	4.01*	1.51 – 10.65
2009	2.76*	1.10 – 6.94	2.99*	1.16 – 7.73
Last sex with girlfriend	**N= 915**		**N= 815**	
2000 (ref)				
2003	1.78*	1.10 – 2.87	2.14*	1.32 – 3.48
2006	1.36	0.88 – 2.10	2.08*	1.36 – 3.19
2009	1.84*	1.23 – 2.74	2.09*	1.38 – 3.18
Last sex with occasional partner in the past 6 months	**N= 523**		**N= 497**	
2000 (ref)				
2003	3.55*	1.71 – 7.41	2.23*	1.11 – 4.47
2006	1.67	0.98 – 2.84	2.25*	1.30 – 3.89
2009	2.85*	1.72 – 4.72	2.42*	1.41 – 4.16
Last sex with a prostitute within last 30 days or 6 months	**N= 370**		**N= 368**	
2000 (ref)				
2003	0.85	0.30 – 2.41	1.63	0.62 – 4.29
2006	1.51	0.56 – 4.03	2.89*	1.13 – 7.39
2009	1.83	0.74 – 4.48	7.43*	2.43 – 22.71

*$p \leq 0.05$.

[1] Controlling for nationality, region, age, marital status (depending on the partner considered in outcome), education, whether the respondent usually migrates, salary, number of partners in the past 30 days, current STI symptoms, whether the respondent drinks alcohol, and concurrent partner types.

Among women, there are no significant differences in condom use between 2000 and 2009. The only significant change in condom use over time among women was a decline in condom use with boyfriends for ambulatory vendors between 2000 and 2003 (Table 20). The decline seems to reverse in 2006 when the odds of using a condom with a boyfriend are not different than in 2000. Too few maids reported occasional partners to be able to run multivariate regressions on condom use with these partners.

Table 20: Adjusted odds ratios[1] of condom use with a boyfriend or occasional partner among maids and female ambulatory vendors

Women	Maids		Vendors	
	Odds Ratio	95% Confidence Level	Odds Ratio	95% Confidence Level
Last sex with boyfriend	**N= 395**		**N= 748**	
2000 (ref)				
2003	1.60	0.62 – 4.13	0.42*	0.23 – 0.77
2006	1.74	0.61 – 4.93	1.01	0.59 – 1.73
2009	2.49	0.94 – 6.59	0.87	0.52 – 1.46
Last sex with occasional partners			**N=143**	
2000 (ref)	n/a			
2003	n/a		0.45	0.13–1.60
2006	n/a		1.09	0.34–3.56
2009	n/a		0.74	0.23–2.35

*p≤ 0.05

[1] Controlling for region, age, marital status, education, whether the respondent usually migrates and salary and number of partners in the past 30 days, current STI symptoms. Among women, we could not control for nationality because very few were from other countries.

HIV Prevalence

Evaluation Question:

To what extent did HIV and STI prevalence change among these groups?

HIV prevalence was lower in 2009 than it was in 2000 for all groups surveyed (Figure 6); however, when tested using bivariate regression analysis, the results showed a significant decline in HIV prevalence between 2000 and 2009 only among female ambulatory vendors (Table 21). HIV rates between 2000 and 2006 among ticket touts showed a significant decline, but the prevalence in this group increased again in 2009 to levels not statistically different than the 2000 baseline.

Figure 6: HIV prevalence rates over time for select risk groups in Mali

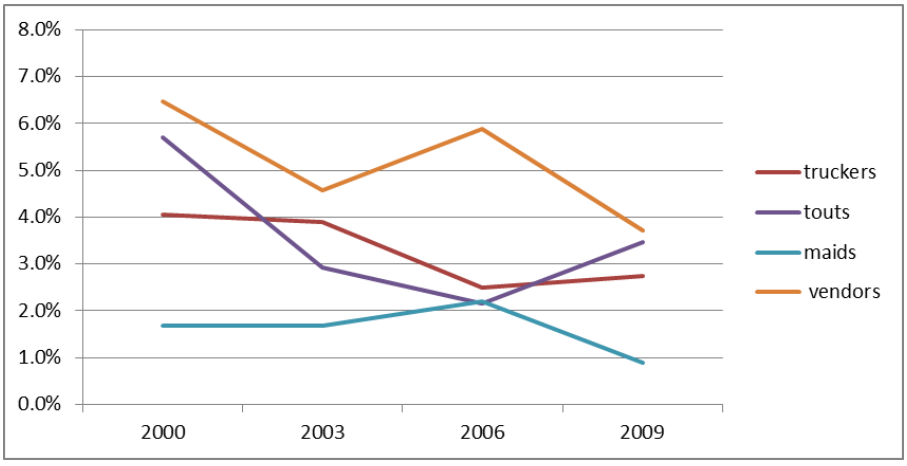


Table 21: HIV prevalence over time for select risk groups in Mali

	2000	2003	2006	2009
Truckers	4.1 (n=321)	3.9 (n=489)	2.5 (n=595)	2.7 (n=731)
Ticket touts	5.7 (n=421)	2.9 (n=409)	2.2* (n=555)	3.5 (n=636)
Maids	1.7 (n=477)	1.7 (n=830)	2.2 (n=591)	0.9 (n=667)
Ambulatory Vendors	6.5 (n=488)	4.6 (n=655)	5.9 (n=818)	3.7* (n=998)

* $p \leq 0.05$ as compared to the 2000 reference period.

Multivariate Results

Evaluation Question:

Do the observed trends in outcomes [HIV and STI prevalence] remain when controlled for demographics and other confounding factors?

After controlling for demographic and other characteristics, the decline in HIV prevalence among truckers became significant. The odds of testing positive for HIV among truckers was 0.40 in 2009, compared to 2000. For other groups, the results for multivariate analysis were similar to bivariate analyses results. Female ambulatory vendors had significantly decreased odds of testing positive in 2009 than in 2000. Ticket touts and maids experienced declines in HIV prevalence, but the odds were not statistically different in 2009 as compared to 2000.

Table 22: Results of adjusted odds ratios[1] for testing HIV positive in multiyear surveys of truckers and ticket touts

	Truckers		Touts	
Men	**Odds Ratio**	**95% Confidence Level**	**Odds Ratio**	**95% Confidence Level**
HIV Infection	**N= 1,412**		**N= 1, 517**	
2000 (ref)				
2003	0.53	0.18–1.49	0.61	0.23–1.63
2006	0.31*	0.12–0.85	0.35*	0.14–0.86
2009	0.40*	0.17–0.96	0.52	0.25–1.08

[1]Controlling for age, marital status, schooling, nationality, region, migration, salary, and years in profession.

Table 23: Adjusted odds ratios[1] of testing positive for HIV by survey round among maids and female ambulatory vendors

	Maids		Vendors	
Women	**Odds Ratio**	**95% Confidence Level**	**Odds Ratio**	**95% Confidence Level**
HIV Infection	**N= 2,540**		**N=2,219**	
2000 (ref)				
2003	0.74	0.28–1.93	0.51*	0.27–0.97
2006	0.80	0.30–2.14	0.88	0.48–1.61
2009	0.41	0.13–1.30	0.53*	0.29–0.97

[1] Controlling for age, marital status, schooling, region, salary and migration.

Across the years, among the men surveyed, HIV infection rates were highest in Bamako and Sikasso. Gao had no HIV infection (Table 24). Ségou had high rates of HIV in 2000 and 2003 among ticket touts, but no reported HIV rate in 2006 and 2009. It seems likely that the sample of ticket touts for 2006 and 2009 differed somewhat from the sample of the two earlier surveys because HIV prevalence was 8.3% in 2003 and none in 2006. Across the years, among the women surveyed, HIV infections were highest in Bamako and Sikasso.

Table 24: HIV infection rates for men and for women by site and year of survey

Men	2000	2003	2006	2009
All Truckers				
Bamako % (n)	6.5 (n=93)	8.8 (n=91)	3.4 (n=177)	4.9 (n=224)
Sikasso % (n)	6.8 (n=88)	5.0 (n=121)	1.7 (n=60)	5.8 (n=86)
Segou % (n)	0.0 (n=65)	2.4 (n=41)	3.0 (n=100)	0.8 (n=127)
Mopti % (n)	1.3 (n=75)	4.3 (n=46)	3.3 (n=30)	0.0 (n=40)
Kayes % (n)	n/a (n=n/a)	1.5 (n=65)	2.7 (n=110)	0.9 (n=110)
Gao % (n)	n/a (n=n/a)	0.0 (n=79)	0.0 (n=76)	0.0 (n=87)
Koutiala % (n)	n/a (n=n/a)	2.2 (n=46)	2.4 (n=42)	3.5 (n=57)
Total % (n)	**4.0 (n=321)**	**3.9 (n=489)**	**2.5 (n=595)**	**2.7 (n=731)**
Ticket Touts				
Bamako % (n)	6.3 (n=127)	2.7 (n=74)	2.5 (n=157)	4.1 (n=197)
Sikasso % (n)	7.2 (n=97)	5.0 (n=80)	1.4 (n=70)	8.1 (n=86)
Segou % (n)	6.5 (n=108)	8.3 (n=24)	0.0 (n=32)	0.0 (n=54)
Mopti % (n)	2.2 (n=89)	3.3 (n=92)	1.9 (n=103)	1.3 (n=77)
Kayes % (n)	n/a (n=n/a)	0.0 (n=28)	3.7 (n=54)	3.3 (n=30)
Gao % (n)	n/a (n=n/a)	1.2 (n=81)	1.0 (n=98)	2.6 (n=153)
Koutiala % (n)	n/a (n=n/a)	0.0 (n=30)	4.9 (n=41)	2.6 (n=39)
Total % (n)	**5.7 (n=421)**	**2.9 (n=409)**	**2.2 (n=555)**	**3.5 (n=636)**
Maids				
Bamako % (n)	0.76 (n=132)	0.56 (n=179)	3.25 (n=246)	0.0 (n=280)
Sikasso % (n)	1.79 (n=112)	1.18 (n=169)	0.0 (n=84)	2.11 (95)
Segou % (n)	3.45 (n=116)	4.2 (n=143)	1.39 (n=72)	1.2 (83)
Mopti % (n)	0.85 (n=117)	1.1 (n=91)	0.0 (n=61)	0.0 (64)
Kayes % (n)	n/a (n=n/a)	1.03 (n=97)	7.84 (n=51)	1.75 (n=57)
Gao % (n)	n/a (n=n/a)	1.47 (n=68)	0.0 (n=32)	0.0 (37)
Koutiala % (n)	n/a (n=n/a)	2.41 (n=83)	0.0 (45)	3.92 (n=51)
Total % (n)	**1.69 (n=477)**	**1.69 (n=830)**	**2.2 (n=591)**	**0.9 (n=667)**
Ambulatory Vendors				
Bamako % (n)	13.16 (n=114)	4.97 (n=181)	6.5 (n=246)	5.4 (n=278)
Sikasso % (n)	3.7 (n=108)	5.05 (n=99)	10.47 (n=86)	5.36 (112)
Segou % (n)	4.5 (n=111)	5.66 (n=106)	5.71(n=140)	2.33 (n=172)
Mopti % (n)	4.32 (n=115)	5.19(n=77)	5.13 (n=78)	2.13 (n=94)
Kayes % (n)	n/a (n=n/a)	4.92 (n=61)	2.88 (n=104)	2.08 (n=144)
Gao % (n)	n/a (n=n/a)	1.96 (n=51)	5.38 (n=93)	5.45 (n=110)
Koutiala % (n)	n/a (n=n/a)	2.5 (n=80)	4.23 (n=71)	1.14 (n=88)
Total % (n)	**6.47 (n=448)**	**4.58 (n=655)**	**5.87 (n=818)**	**3.71 (n=998)**

Chlamydia and Gonorrhea

Test results for Chlamydia and gonorrhea are available for 2003, 2006, and 2009. Over this time, Chlamydia prevalence among truckers increased significantly from 3–7.1%, but no significant changes occurred for ticket touts (4–4.4%) or maids (3.2–5.2%) (Figure 7 and Table 25). Chlamydia among

female ambulatory vendors decreased significantly in 2006 (4%); however, in 2009, prevalence increased again (6.3%) to levels not significantly different that 2003 (7%).

For gonorrhea (Figure 8 and Table 25), levels were low across all groups, generally less than 2%. Female ambulatory vendors experienced a significant increase in prevalence from 0.7% in 2000 to 2.3% in 2009; whereas ticket touts experienced significant declines from 4.7% to 0.9%. Maids and truckers did not experience significant changes in gonorrhea prevalence between 2003 (1% to 1.4%, respectively) and 2009 (0.6% to 1.7%, respectively).

Figure 7: Chlamydia prevalence rates over time for select risk groups in Mali

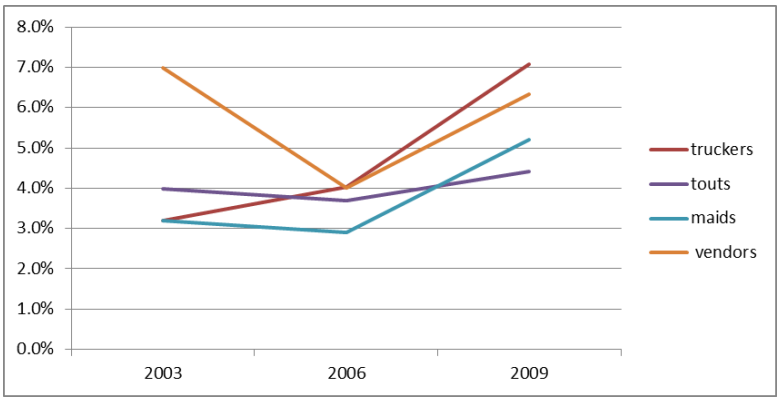


Figure 8: Gonorrhea prevalence rates over time for select risk groups in Mali

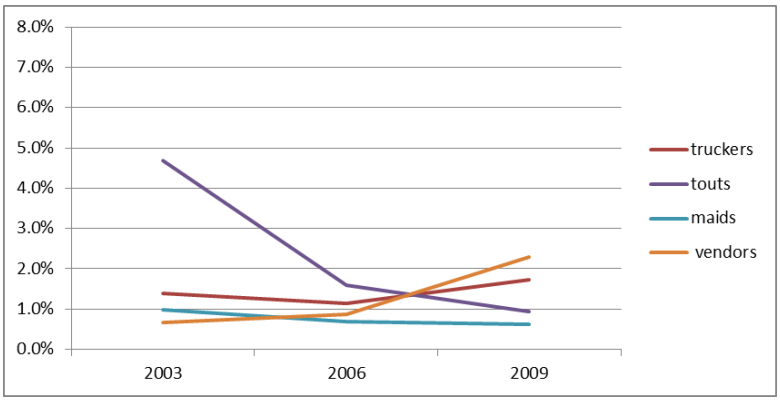


Table 25: STI prevalence among select risk groups in Mali

	2003	2006	2009
Truckers			
CT (% positive)	3.0 (n= 500)	4.1 (n=616)	7.1* (n=750)
GC (% positive)	1.4 (n=500)	1.1 (n=613)	1.7 (n=749)
Ticket Touts			
CT (% positive)	4.0 (n=426)	3.7 (n=539)	4.4 (n=636)
GC (% positive)	4.7 (n=426)	1.6* (n=499)	0.9* (n=636)
Maids			
CT (% positive)	3.2 (n=812)	2.9 (n=588)	5.2 (n=652)
GC (% positive)	1.0 (n=812)	0.7(n=588)	0.6 (n=651)
Ambulatory Vendors			
CT (% positive)	7.0 (n=601)	4.0* (n=801)	6.3 (n=915)
GC (% positive)	0.7 (n=601)	0.9 (n=801)	2.3* (n=915)

* $p \leq 0.05$ as compared to the 2003 reference period.

Results from the multivariate regression generally are similar to those of the bivariate analysis.

Only truckers show significant differences in the odds of testing positive for Chlamydia between 2003 and 2009, with the odds in 2009 being 3.65 times higher than in 2003 after controlling for demographic and personal characteristics (Tables 26 and 27).

For gonorrhea, the reduced prevalence over time remains significant for ticket touts, with the odds of testing positive in 2009 being 0.14 as compared to 2003. No other risk group shows statistical differences in gonorrhea over time.

Table 26: Adjusted odds ratios[1] of truckers and ticket touts testing positive for HIV or other STIs in multiple surveys

Men	Truckers		Touts	
	Odds Ratio	95% Confidence Level	Odds Ratio	95% Confidence Level
Chlamydia Infection	**N=1,316**		**N=1,124**	
2003 (ref)				
2006	2.12	0.71–6.36	1.06	0.43–2.57
2009	3.65*	1.27–10.44	1.36	0.59–3.15
Gonorrhea Infection	**N=1,167**		**N=849**	
2003 (ref)				
2006	0.95	0.23–4.02	0.25*	0.08–0.77
2009	1.56	0.42–5.84	0.14*	0.05–0.43

[1]Controlling for age, marital status, schooling, nationality, region, migration, salary, and years in profession.

Table 27: Adjusted odds ratios[1] of being testing positive for HIV or other STI by survey round among maids and female ambulatory vendors

Women	Maids		Vendors	
	Odds Ratio	95% Confidence Level	Odds Ratio	95% Confidence Level
Chlamydia Infection	**N=2,036**		**N= ,820**	
2003 (ref)				
2006	0.88	0.47–1.66	0.52*	0.30–0.91
2009	1.68	0.97–2.90	0.84	0.54–1.33
Gonorrhea Infection	**N=1,860**		**N=1,820**	
2003 (ref)				
2006	0.62	0.18–2.15	0.64	0.14–2.88
2009	0.56	0.16–1.94	2.74	0.91–8.25

[1] Controlling for age, marital status, schooling, region, salary and migration

5. Conclusion and Recommendations

Conclusions

In this section, we summarize the answers to the evaluation questions and list our recommendations that are derived from the answers to the evaluation questions and suggestions from key informants.

Evaluation Question One:
How suitable and relevant was USAID's strategy and programming for HIV prevention in Mali between 2000 and 2010?

- What was USAID's strategy for HIV prevention in Mali from 2000 to 2010?
- What were the assumptions and expectations behind the HIV strategy (with regards to target groups, to social change, to transmission patterns, etc.)?
- How well were these strategies and programs tailored to the risks of HIV infection as experienced by the groups at medium risk for HIV infection?
- What were the populations targeted? What was their relationship to both high risk groups and the general population?
- Were the targets and objectives that were given to the NGOs reached by program activities?
- How were the programs successful? What challenges did they face?
- What resources (funds, skills, materials) were placed at the disposition of the implementing NGOs?

Based on the notion that the epidemic was concentrated in groups that engaged in risky behavior, USAID's overall strategy in Mali was to target populations deemed at risk for HIV and to provide products and services intended to help reduce the spread of the virus. Several assumptions and expectations were behind this strategy. One was the focus on the importance of labeling high-risk and medium-risk groups as a way to understand how HIV is transmitted and target interventions toward these groups. It is, however, important not to neglect the general population because an individual's risk might increase through his or her partner's risk behavior. Another assumption was based on the notion that the understanding of risk will lead to risk-reduction behavior. Research has shown, however, that the understanding of one's health risks does not always lead to changes in behavior to mitigate those risks. The push for social marketing assumed that various forms of marketing had the potential to reduce risky behavior and increase condom use. Further, as promoted by HIV/AIDS experts, the HIV strategy assumed that the improved availability of VCT and STI treatment services would help reduce HIV transmission.

USAID-supported organizations gathered key information about the epidemic and conducted a wide range of HIV prevention activities. Many of the HIV prevention programs were successful in extending their reach, increasing the provision of high-quality HIV prevention services, and increasing the promotion of risk-reduction behaviors. USAID provided monetary funds to several organizations to carry out their program activities. Overall most of the interventions achieved their program objectives for the number of interventions implemented. Yet, the evidence is less clear on these programs' impact on behavior outcomes and HIV prevalence, and their success as will be seen in the answers to the second set of evaluation questions.

Evaluation Question Two:
What changes in HIV-related knowledge and behaviors, and HIV and STI prevalence (outcomes) occurred among Malian medium-risk groups (truckers, ticket touts, mobile female food vendors, and household maids) from 2000-2009?

- To what extent did HIV prevention knowledge change among these populations?
- To what extent did consistent condom use change with different kinds of partners?
- To what extent did HIV and STI prevalence change among these groups?
- Do the observed trends in outcomes remain when controlled for demographics and other confounding factors?

Next, we summarize the evidence for changes in knowledge, behavior, and HIV and STI prevalence in medium-risk populations from 2003 to 2009.

HIV Knowledge

It is reasonable to expect that if targeted populations understand ways to avoid HIV transmission, they would change over time with peer education and mass media communication. The ISBS had only one way to measure knowledge of HIV transmission; the surveys asked respondents to list all the ways they knew to avoid transmission. In 2003, USAID was promoting the ABC strategy: Abstain, Be faithful, and Condom use. This approach was reflected in the messages disseminated in media campaigns and interpersonal communication, which in turn was reflected in how responses to the survey questions were coded. The responses to knowledge about how to avoid HIV transmission differed widely between men and women, although the percentage of all groups that could name all three means of preventing transmission (abstinence, faithfulness, and condom use) never exceeded 10%, and condom use was mentioned more often than other methods.

The surveys found no increase in the knowledge of these three methods among men. In fact, the proportion of men who cited abstinence and faithfulness and all three dropped over time, and the decrease was statistically significant. The failure to increase knowledge among men may be due to ineffective interventions or to differences in how surveys were administered over time (for example, interviewers may not have probed for additional responses as much in later years).

Women's general knowledge of means to prevent HIV transmission was lower than that of men. The proportion of women who could name abstinence as one means to prevent HIV transmission increased significantly, and the proportion of maids and ambulatory vendors who could name all three means also increased significantly. The proportion of women who could name being faithful or using condoms significantly decreased from 2003 to 2009. It is possible, although not certain, that the increase in the accuracy of knowledge about abstinence among women was partially due to interventions such as peer education or mass media messages.

Female target groups (maids and ambulatory vendors) appear to have different patterns than the male groups (truckers and ticket touts) in knowledge acquisition and changes in risk behaviors. The female risk groups exhibit decreased knowledge of condoms and stagnant levels of condom use, whereas males increased in both. Female groups increased in knowledge of HIV prevention methods only for abstinence, whereas male respondents decreased in knowledge or recall of abstinence as a prevention method.

Condom Use

From 2000 to 2009, condom use had a statistically significant increase among men but not among women, and HIV prevalence decreased among the four target groups; that decrease was significant only among truckers and vendors. Knowledge among the male respondents about condom use as a way to

prevent HIV transmission remained high (above 80%) without any significant changes; knowledge of condom use among female respondents was much lower (less than 50% for maids and about 60% for ambulatory venders) and declined significantly from 2003 to 2009. During that period, condom use among men also increased significantly. Both truckers and ticket touts appear to have incorporated the knowledge of the importance of using a condom with certain types of partners and found places where condoms could be obtained. Some of the increase in condom use may be attributed to media messages about HIV prevention and increased availability of condoms.

The surveys revealed that among women (maids and ambulatory vendors), no statistical difference in condom use occurred between 2000 to 2009, which could be due in part to women having a more limited say (than men) in whether a condom is used. The lack of increase in condom use may be related to women not being reached in sufficient numbers by communication campaigns, the messages not being appropriate, low access to condoms, or that condom use among women is determined by other factors.

HIV Prevalence Rates

The past three DHS surveys in Mali (EDSM-III, EDSM-IV, and EDSM-V) have shown a decrease in HIV prevalence among adults ages 15–49 years from 1.7% to 1.2% in 2012. The ISBS also have shown a decrease in HIV prevalence among targeted populations, although perhaps less of a decrease than expected. As seen in Figure 4 and Table 21, HIV prevalence in 2009 was lower than in 2000 for each of the four groups, but only among truckers and vendors was the decrease statistically significant after controlling for demographic factors. Prevalence among ticket touts decreased significantly in 2006 before increasing again in 2009. Just as with the general population, HIV prevalence has been decreasing overall in these groups. It is hard to imagine these decreases without the health education campaigns, promotion of condoms, and increased access to testing, screening, and treatment for STIs.

It is important to note that the mobility variable from the ISBS survey showed no association with HIV infection for any of the four risk groups surveyed after controlling for demographic and behavior factors; however, the question on mobility is oddly worded, which makes it difficult to interpret. The question asks about habitual annual trips to other localities for purposes such as agricultural work or to visit families; and thus, individuals who move a lot, but who are not in a seasonal or annual pattern, may answer no to this question. Among truckers, for example, who are permanently mobile, only about a third report "yes" for this variable.

STI Prevalence Rates

The prevalence of chlamydia and gonorrhea varied significantly from 2003 to 2009. Chlamydia in truckers increased significantly, and gonorrhea in ambulatory vendors increased significantly. The rate of gonorrhea among ticket touts decreased. All other changes were not significant.

Recommendations

In the following paragraphs, we list the recommendations that came out of this baseline assessment, based on the document review, interviews with key informants, and ISBS analysis. These recommendations offer guidelines to help USAID formulate strategy for HIV prevention in Mali, taking into consideration USAID's principles of development assistance:

- Concentrate on the resources and skills in which you excel (comparative advantage).
- Seek at all times to build local capacity to sustain project activities.
- Work back from the national objectives stated in the national strategic plan (Cadre Stratégique National) to plan projects that facilitate the attainment of those objectives.

Align HIV strategies: Align the overall USG strategy closely to that of the government of Mali as outlined by the HCNLS. Any strategy will be more effective if it serves to complement other efforts in the same direction. It is important to make decisions on which groups or locations to target in close

collaboration with the Malian government. USAID has a comparative advantage in the collection and diffusion of high-quality data on HIV and STI prevalence, one of the objectives laid out in the HCNLS. Although USAID continues to finance the DHS and other surveys, the USG also should provide training and data processing and analysis to build more capacity in the CSLS for data collection and analysis.

Diversifying target population and target locations: The strategic objectives of the USG going forward should focus on the social and health service needs of mobile populations around the country. For some time now, these have included CSWs, truckers, ticket touts, and female vendors; however, many other groups that also may play the same role in HIV transmission received less attention: migrant workers in rice and cotton production, miners in formal and informal gold mines, the military, and prisoners. Individuals who move to a new location for work will form new social and sexual networks in these new locations. These locations should be targeted for particular health education activities, condom distribution, and associations that meet to discuss ways to avoid HIV and STI transmission. For example, if the Global Fund is investing in support for the military, truckers, and ambulatory vendors, then the USG should focus on migrant workers to provide information on how to avoid HIV transmission, promote VCT, and offer treatment for STIs.

We recommend that the USG proceed in steps. First, hold discussions with the HNCLS and other stakeholders to discuss the social and health service needs of mobile populations. Second, identify the locations of major centers where mobile, migrant workers operate. Third, identify the government agencies or donors that will take the lead in addressing the support needs in each of the main locations. Fourth, begin planning the activities of the USG to address the needs of the target groups they have accepted to serve. If the Global Fund plans to support the military and truckers, then the USG may well provide services in locations where gold miners and workers in rice and cotton production are operating. Considering the history of mobile CSWs in Mali, much of the clientele to be served in these locations will be CSWs and their clients.

Capacity building and expansion of services: USAID should consider supporting activities that build capacity to collect and analyze data on HIV and STIs. USAID could devote resources to improve the technical expertise of organizations that implement HIV prevention programs and NGOs' project management, monitoring and evaluation, and drug and medical service provision capacities. Further, USAID should support expanding access to VCT services to regions that are not well served and increasing support for social and medical services to people who are HIV positive. NGOs that provide social and medical services should receive funding to expand services, monitor their activities, and evaluate effectiveness in reducing HIV and STI transmission.

A definition of target groups based more on a recognition of social and economic mobility than on occupational groups needs to be developed. This shift is already occurring in practice, but it would be useful to make the definition more explicit. One common thread to the circumstances of truckers, ticket touts, gold miners, migrant workers of all kinds, and the military, is that they are on the move. By developing interventions that target locations as much as specific groups, it will be easier to understand the kinds of social interactions that facilitate HIV transmissions in specific sites.

Develop a system of monitoring STI prevalence and treating STIs in the identified locations: Formative research among miners, migrant workers, and the military can be used to better tailor interventions to their specific needs and verify the extent to which CSWs have been drawn to these locations. A series of surveys similar to the ISBS could provide data to monitor trends over time. In addition, assistance is needed to evaluate program activities to identify the most effective services. Focus is needed on services that are the most effective in reducing HIV transmission.

Youth-focused activities: Several key informants reported that HIV prevention programs should focus on sexual relations among youth. The assistance could take the form of improving reproductive health services, organizing services to welcome young people, making condoms available, encouraging prompt treatment for STIs, and providing HIV testing and counseling aimed specifically at youth.

Mitigate problems associated with short projects and uncertain funding: One way to minimize problems associated with short term project and uncertain funding would be to channel most of the assistance offered into one or two large and longer-range projects. Projects of a certain size and length can better include a system of monitoring and periodic evaluation of activities. If USAID focused on two large projects, then administration by USAID would be simpler and more transparent, and the project would not struggle with funding uncertainty.

Continued promotion of VCT and other prevention measures: Some interventions funded by USAID and other donors have promoted condom use and VCT among youth, and that should be continued. VCT offered an opportunity for individual counseling about STI and HIV transmission to people who have recently initiated their sexual relations. Funding also should be devoted to establish and promote STI and HIV preventive and treatment services where migrant workers operate. The services should include VCT, rapid treatment, counseling on the prevention of STIs, and provision of ARVs for people with HIV infection. Promoting and establishing services should occur at the same time. The Soutoura model of creating centers for CSWs to meet and discuss issues of interest, as well as be treated for illnesses, in a place where they are not stigmatized is a model that could be followed productively in new locations for migrant workers.

Additional research on gendered differences in HIV Prevention Programming: Findings from this study indicate that female target groups (maids and ambulatory vendors) appear to have different patterns than the male groups (truckers and ticket touts) in knowledge acquisition and changes in risk behaviors. These patterns could be explained by differences in how prevention messages and interventions were targeted to female and male target groups. Low levels of knowledge and condom use among female respondents also could be due to gender roles and relations in Mali, which impede women from negotiating or demanding condom use from their partners. Additional research could investigate barriers to condom use among women and focus on how best to target prevention messages to different risk groups, based on gender, but also based on the specific risks specific groups face.

APPENDIX A. LIST OF DOCUMENTS REVIEWED

Data Source	Year	Document Type	Description
CDC	2003	CDC/USAID PASA SEMESTRIAL REPORT	Jan 2003–Sept 2003 USAID Indicators: Strategic Objective Level, IR Level, Impact Indicators, Process Indicators. Major Achievements, Lessons Learned, Problems and Constraints, and Next Semester Programming Plan
CDC	2004	CDC/USAID PASA SEMESTRIAL REPORT	Oct 2003–March 2004 Accomplishments, Lessons Learned, Obstacles/Challenges, Key Activities in next 6months, Key Indicators
CDC	2004	CDC/USAID PASA SEMESTRIAL REPORT	April 2004 – Sept 2004 Accomplishments, Lessons Learned, Obstacles/Challenges, Key Activities in next 6months, Key Indicators, Annual Narrative Summary, Annual Indicators Table
CDC	2005	CDC/USAID PASA SEMESTRIAL REPORT	April 2005 – Sept 2005 Accomplishments, Lessons Learned, Obstacles/Challenges, Key Activities in next 6months, Key Indicators, Annual Narrative Summary, Annual Indicators Table
CDC	2006	CDC/USAID PASA SEMESTRIAL REPORT	April 2006 – Sept 2006 FINAL REPORT Accomplishments, Lessons Learned, Obstacles/Challenges, Key Activities in next 6months, Key Indicators, Annual Narrative Summary, Annual Indicators Table
Government of Mali	multi	Mali National AIDS Strategy	2005–2010 Mali National AIDS Strategy with ANNEX
Government of Mali	multi	HIV/AIDS Indicators	Table of HIV/AIDS Indicators 2006–2010
Government of Mali	2009	Risk Mapping	Mapping HIV risk in Mali - epidemiology, risk zones
Government of Mali	multi	Mali - National Expenditure on Health	1995–2009 National Expenditure on Health
Government of Mali	multi	PDDSS 1998–2007	Development plan for prioritizing and addressing the health and development needs of Mali
Government of Mali	2010	Sentinel Surveillance Data	Annex - regional breakdown of epidemiologic results
Government of Mali	2009	Sentinel Surveillance Report on HIV and Syphilis	
Government of Mali	2011	Assessment Plan Summary	Summary of the Health and Social Development Assessment Plan for Mali
Mali Study	2011	Mali Indicator Overview	Presentation of Mali's performance on MCC's FY 2011 eligibility criteria
Other Study	2008	West Africa HIV/AIDS Epidemiology	The Global HIV/AIDS Program - The World Bank: West Africa HIV/AIDS Epidemiology and Response Synthesis (includes Mali)
Other Study	2011	USAID West Africa MARPS assessment	USAID West Africa - An assessment of policy toward most at risk populations for HIV/AIDS in West Africa (includes Mali)

Other Study	2009	AIDS behavior study	Common Factors in Effective HIV Prevention Programs
Other Study	2009	Document Analysis Study	Article that examines the function of document Analysis as a Qualitative Research Method
Other Study	2002	Integrated STI prevalence and behavior surveys	The feasibility of integrated STI prevalence and behavioral surveys in developing countries
Other Study	2010	HIV Modes of Transmission in West Africa	UNAIDS: New HIV Infections by mode of transmission in West Africa (Excludes Mali)
Care PKC	2003	CARE PKC Proposal	CARE technical application for Ciwara Project in Mali
Care PKC	2004	CARE Cooperative Agreement	ENGLISH Estimated project amount $13,996,112 ($18,588,376 with additional two years). Estimated duration of project: Aug 2003 to July 2006 with option for two, one year extensions.
Care PKC	2004	CARE PKC Partnership Protocol	FRENCH Discusses how the groups will engage with each other, how the budget will look, and any special provisions
Care PKC	2008	CARE PKC final report	Results achieved over the five years for each high impact service, cross cutting intervention achievements, lessons learned, conclusions and recommendations
Care PKC	2009	PKC II Year One Activities	excel document detailing planned activities
Care PKC	2009	PKC II First Semester Report	Oct 08–March 09: Narrative Report, List of Acronyms, Executive Summary, Introduction, Accomplishments over last six months, Lessons Learned, Obstacles/Challenges, Key activities for next six months, key process indicators, upcoming events
Care PKC	2009	PKC II Second Semester Report	April 09–Sept 09: Introduction; High Impact Services – Malaria, Reproductive Health/Family Planning, Diarrhea, HIV/AIDS/STIs; quality improvement; cross cutting issues And lessons learned, key targets, key activities planned in next 6 months
Care PKC	2010	PKC II Annual Report	Oct 09–Sept 10: Introduction; High Impact Services – Malaria, Reproductive Health/Family Planning, Diarrhea, HIV/AIDS/STIs; quality improvement; cross cutting issues and lessons learned, key targets, key activities planned in next 6 months
Group Pivot	2002	Final Program Report	ENGLISH June 2002–Sept 2003 - Introduction, Achievements, Narrative, Major Events, Setting up steering committee, capacity building of GP/SP, training NGO staff, monitoring activities, lessons learned
Group Pivot	2003	Annual Report	ENGLISH Jan 2003–Sept 2003 Introduction, Achievements, Narrative Report, Major Event, Selecting partner NGOs, Capacity Building Activities, training of NGO staff, monitoring activities, activities scheduled

Group Pivot	2004	Annual Report	FRENCH Oct 03–Sept 04 Introduction, Status of Activities, Results, Narratives, difficulties encountered, proposed solutions, lessons learned, major challenges, conclusion
Group Pivot	2005	Annual Report	FRENCH Oct 04–Sept 05 Introduction, program activities, results, difficulties encountered, proposed solutions, lessons learned, challenges, activities for the next year
Group Pivot	2006	Annual Report	FRENCH Oct 05–Sept 06 Introduction, program activities, results, difficulties encountered, lessons learned, success stories, challenges, activities for the next year
Group Pivot	2007	Annual Report	FRENCH Oct 06–Sept 07 Introduction, project update, program activities, program results, difficulties encountered, lessons learned, success stories, challenges, activities for the next year, conclusion
Group Pivot	2008	Annual Report	FRENCH Oct 07–Sept 08 Introduction, project update, program activities, program results, difficulties encountered, lessons learned, success stories, challenges
Group Pivot	2009	Annual Report	FRENCH Oct 08–Sept 09 Introduction, Interventions and activities, lessons learned, obstacles and challenges, activities for the next year
Group Pivot	2011	Annual Report	FRENCH Oct 10–Sept 11 Introductions, Interventions, activities, lessons learned, obstacles/challenges, conclusion
PSI	2003	High Risk Group Research	PowerPoint presentation outlining results of a survey – Methodology, Principal results, programmatic implications
PSI	2003	Proposal	Pathways to Health: An Integrated Social Marketing Program Proposal - introduction, proposed activities, target groups, social marketing plan, HIV/AIDs context, family planning context, child survival context, Monitoring and Evaluation Plan
PSI	2003	Baseline Survey	Results of the Baseline survey in the northern cities and mining areas
PSI	2004	Annual Report	July 2003–Sept 2004, accomplishments, lessons learned, difficulties encountered, future plans, key indicators, other events
PSI	2004	Map of risk groups	Identification of sites and risk groups for HIV/AIDS
PSI	2004	Annex of Semester Report	BCC Frameworks for HIV and MCH/Malaria, Group Pivot Quarterly reports
PSI	2004	Technical Report	July 03–March 04, HIV accomplishments, TA to Group Pivot, BCC activities, VCT activities, advocacy activities, key indicators
PSI	2004	VCT Report	FRENCH April 04–Sept 04 data analysis from VCT clinics
PSI	2005	Technical Report	Oct 04–Sept 05 HIV prevention, community-based prevention activities, advocacy with religious and community leaders, BCC targeting youth, quality assurance and promotion of VCT, partnership with CAG, Monitoring and Evaluation

PSI	2006	Technical Report	Oct 05–Sept 06, HIV prevention, community-based prevention activities, advocacy with religious and community leaders, BCC targeting youth, quality assurance and promotion of VCT, partnership with CAG, Monitoring and Evaluation
PSI	2008	End of Project Report	Submitted Dec 08. HIV prevention, community-based prevention activities, advocacy with religious and community leaders, BCC targeting youth, quality assurance and promotion of VCT, partnership with CAG, Monitoring and Evaluation
PSI	2010	Follow on Technical Annual Report	Oct 09–Sept 10: Overview of Family Planning, HIV/AIDS Prevention, Malaria, and Diarrhea activities, Research
PSI	2011	Follow on Project Semester Report	Oct 10–March 11 Overview of Family Planning, HIV/AIDS Prevention, Malaria, and Diarrhea activities, Research
PSI	multi	End of Project Report	Oct 08–Sept 11 Overview of Family Planning, HIV/AIDS Prevention, Malaria, and Diarrhea activities
Soutoura	2004	activity report	April 04–Sept 04 Results per activity
Soutoura	2005	Activities and results	Jan 05–Dec 05 activities and their results
Soutoura	2005	activity report	Oct 04–March 05 Results per activity
Soutoura	2007	Results Reported	Feb 07–April 07 deliverables reported
Soutoura	2007	Results Reported	Oct 07–March 08 results reported
Soutoura	2007	Results Reported	Jun–07
Soutoura	2007	Results Reported	May–07
Soutoura	2008	Activities report	Oct 07–Sept 08 report of activities and results achieved on indicators
Soutoura	2010	Interim Progress Report	Oct 09–Sept 10 objectives and results achieved
Soutoura	2010	results reported	Oct 09–Sept 10 Results achieved, targets compared to actual performance
Soutoura	2010	Interim Progress Report	July 10–Sept 2010 Record of performance
Soutoura	2011	Results Reported	Oct 10–Sept 11 Results achieved, targets compared to actual performance
Soutoura	2011	Results Reported	Oct 10–March 11 Results achieved, targets compared to actual performance
Soutoura	2011	Results Reported	Jan 11–March 11 Results achieved, targets compared to actual performance
Soutoura	2011	Accomplishment Report	April 11–June 11 results achieved, targets compared to actual performance
Soutoura	multi	5 year indicator report	HIV Indicators from Oct 07–Sept 11 and summary of trends
USAID	2002	Annual Report	Program data sheets, performance narratives, resource requests – Annex included
USAID	2003	Recommendations for USAID Mali's HIV/AIDS Strategy	situational analysis, proposed ten year HIV/AIDS Strategic plan, results and reporting, budget and USAID management, special concerns
USAID	2003	CBJ	outline of USAID funded projects in 2003

USAID	2004	Annual Report	program performance summary, performance narratives, challenges, indicator table
USAID	2004	CBJ	outline of USAID funded projects in 2004
USAID	2004	Results Attained	FRENCH condom and ITN distribution achievements in 2004
USAID	2005	Annual Report	program performance summary, performance narratives, challenges, indicator table
USAID	2005	CBJ	Outline of USAID funded projects in 2005
USAID	2006	Annual Report	List of evaluations, program performance summary, performance narratives, challenges, indicator table
USAID	2006	CBJ	Outline of USAID funded projects in 2006
USAID	2007	HIV Indicators	Breakdown of HIV indicators for Mali
USAID	2007	HIV narrative	HIV performance narrative
USAID	multi	Performance Targets	2004, 2005, 2006, 2007 OU performance results
USAID	2008	PPR Health narrative	Health section of program area achievements
USAID	2008	indicator tables	Table of health indicators
USAID	2008	PPR HIV narrative	Program achievements in HIV narrative
USAID	2009	PPR Health narrative	Narrative of health section of PPR
USAID	2009	PPR HIV narrative	HIV specific narrative for PPR
USAID	multi	HIV/AIDS Strategic Plan	USG support of Mali's HIV/AIDS National Response: Strategic Plan 2010–2015, context, partners, implementation, strategic overview, oversight, inter-sectoral response, logistics
USAID	2010	Strategic Review for USAID	Prevalence in Mali, Current HIV/AIDS related activities and the identification of new highly vulnerable populations: A strategic review for USAID Mali
USAID	multi	social marketing program assessment	2000–2010 Mali Social Marketing Program Assessment of Progress
USAID	multi	USAID Mali HIV Strategy	USAID Mali HIV/AIDS Strategy 2003–2012
ISBS	multi	Analyses of ISBS	Analyses of the Integrated STI (Sexually Transmitted Infection) and Behavior Surveillance Survey (ISBS) 2000, 2003, 2006, and 2009
ISBS	multi	Bivariate Analyses	Variables, odds ratio, confidence interval
ISBS	2000	2000 ISBS Mali	Site specific HIV/STI Prevalence
Mali Study	multi	HIV by Year by group	2000 2003 2006 2009 HIV by Year by Group
Mali Study	?	HIV and STI by site	Breakdown of HIV and STI rates by site, year unknown
ISBS	?	HIV prevalence by MARPS group	Breakdown of HIV prevalence by high risk group, year unknown
ISBS	?	HIV and STI by MARPS group	Breakdown of HIV and STI rates by MARPS group, year unknown
ISBS	multi	mean monthly salaries of risk groups	2000, 2003, 2006, 2009 Mean monthly salaries of high risk-groups in Mali
ISBS	?	level of education and monthly income in risk	Years of schooling and monthly income of risk groups

		groups	
ISBS	?	selected variables	Variable selection list
ISBS	multi	variable description	2000 2003 2006 2009 variable description
Mali Study	?	list of target regions	List of target regions
USAID	?	Increased Utilization of High Impact Services and Healthy Behaviors	Mapping of results and illustrative activities
ISBS	2000	ISBS report 2000 Mali	Part 1, rest missing
ISBS	2006	ISBS Report 2006 Mali	Part 1, Part 2, Part 3
ISBS	2009	ISBS Report 2009 Mali	Full report
ISBS	1999	Castle High Risk groups in Mali	Identification of high risk groups in Mali
ISBS	2010	Castle High Risk groups in Mali	Identification of high risk groups in Mali
ISBS	2003	ISBS report 2003	Parts 1–12

APPENDIX B. CONVERSATION GUIDES

A. Conversation Guide for Policy Experts

Guide d'entretien pour expert en planification et/ou finance

Introduction:

Salutations d'usage

Nous venons vous voir dans le cadre d'une évaluation rétrospective sur la prévention du VIH/ SIDA au Mali; nous voulons parler de votre participation auprès des projets d'intervention. Vos avis nous sont très importants, mais comprenez bien que :

- Votre participation est libre et volontaire; aucune obligation
- Vos réponses et les prises de notes seront confidentielles
- On vous offre l'anonymat à 100%
- Donc vous pouvez parler à votre aise

Ces entretiens durent moins d'une heure normalement.
Est-ce que vous que vous avez des questions à me poser?
Pour avoir d'amples informations, vous pourriez joindre Mr Jean Marie N'Gbichi
de MEASURE Evaluation dont le numéro est : 20 73 02 80 et 76 72 36 38.
Avec votre permission, est ce que nous pouvons enregistrer?

Objectifs

Les entretiens se feront avec des personnes qui ont participé à l'élaboration et à la mise en œuvre des projets et programmes dans le cadre de la prévention du VIH/SIDA.
Nous voulons comprendre la mise en œuvre des différents projets/programmes des ONGs et Ministère favorisant la prévention du VIH/SIDA.

Guide d'entretien pour expert en planification et/ou finance

1) **Quelles sont vos occupations actuelles dans ce service ?**

   Combien de temps ?
   Devoirs et responsabilités ?
   Connaissances et spécialisations ?

   Phrase de transition : On nous a dit que vous étiez un planificateur, financeur ou expert de la politique de la prévention du VIH/SIDA pendant les récentes années.

2) **S'il vous plait parlez-nous de votre implication dans ce projet/programme?**

   Rôle ;
   Activités principales ;

Quelles sont les aspects qui vous ont le plus marqués.

3) Quelles étaient les stratégies du projet/programme au tout début?

Objectifs ;
Population cible ;
Zones d'intervention ;
Temps d'intervention;
Activités/méthode ;
Contrainte/défis.

4) Les résultats/ déroulement du projet/programme?

Quelles sont les difficultés rencontrées dans la mise en œuvre ;
Différentes solutions trouvées ;
Points forts et les points à améliorer ;
Objectifs atteints ;
Perception du projet/programme par la population.

5) Suggestions et recommendations

Amélioration de la stratégie ;
Population cible ;
Services fournis par le projet/programme.

B. Conversation guide for program experts

Guide d'entretien pour les gérants de programmes/projets

Introduction :

Salutations d'usage

Nous venons vous voir dans le cadre d'une évaluation rétrospective sur la prévention du VIH/ SIDA au Mali; nous voulons parler de votre participation auprès des projets d'intervention. Vos avis nous sont très importants, mais comprenez bien que :

- Votre participation est libre et volontaire; aucune obligation
- Vos réponses et les prises de notes seront confidentielles
- On vous offre l'anonymat à 100%
- Donc vous pouvez parler à votre aise

Ces entretiens durent moins d'une heure normalement.
Est-ce que vous que vous avez des questions à me poser?
Pour avoir d'amples informations, vous pourriez joindre Mr Jean Marie N'Gbichi
de MEASURE Evaluation dont le numéro est : 20 73 02 80 et 76 72 36 38.
Avec votre permission, est ce que nous pouvons enregistrer?

Objectifs

Les entretiens se feront avec des personnes qui ont participé à l'élaboration et à la mise en œuvre des projets et programmes dans le cadre de la prévention du VIH/SIDA.
Nous voulons comprendre la mise en œuvre des différents projets/programmes des ONGs et Ministère favorisant la prévention du VIH/SIDA.

Guide d'entretien pour les gérants de programmes/projets

1) Quelles sont vos occupations actuelles dans ce service ?

Combien de temps ?
Devoirs et responsabilités ?
Connaissances et spécialisations?

Phrase de transition : On nous a dit que vous étiez un gestionnaire de programme de la prévention du VIH/SIDA pendant les années récentes.

2) S'il vous plait parlez-nous de votre implication dans ce projet/programme?

Rôle ;
Activités principales ;
Quelles sont les aspects qui vous ont le plus marqués.

3) Quelles étaient les stratégies du projet/programme au tout début?

Objectifs ;
Population cible ;
Zones d'intervention ;
Temps d'intervention;
Activités/méthode ;
Contrainte/défis.

4) Résultats/déroulement du projet/programme?

Quelles sont les difficultés rencontrées dans la mise en œuvre ;
Différentes solutions trouvées ;
Points forts et les points à améliorer ;
Objectifs atteints ;
Perception du projet/programme par la population.

5) Suggestions et recommendations

Amélioration de la stratégie ;
Population cible ;
Services fournis par le projet/programme.

C. Conversation guide for peer educators (PS)

Guide d'entretien pour les Paires Educatrices/Animatrices

Introduction :

Salutations d'usage

Nous venons vous voir dans le cadre d'une évaluation rétrospective sur la prévention du VIH/ SIDA au Mali; nous venons vous voir pour parler de votre participation auprès du projet paires éducatrices. Vos avis nous sont très importants, mais comprenez que :

- Votre participation est libre et volontaire; aucune obligation
- Vos réponses et les prises de notes seront confidentielles
- On vous offre l'anonymat à 100%
- Vous pouvez arrêter la conversation à tout moment
- Donc vous pouvez parler à votre aise

Ces entretiens durent moins d'une heure normalement.
Est-ce que vous que vous avez des questions à me poser?
Si vous voulez avoir d'amples informations, vous pourriez joindre Mr Jean Marie N'Gbichi
de MEASURE Evaluation dont le numéro est : 20 73 02 80 et 76 72 36 38.

Avec votre permission, est ce que nous pouvons enregistrer?

Objectifs

Nous voulons comprendre la mise en œuvre des différents projets/programmes des ONGs et Ministère favorisant la prévention du VIH/SIDA, donc le projet de paires éducatrices.
Les entretiens se feront avec des personnes qui ont participé à l'élaboration et à la mise en œuvre des projets et programmes dans le cadre de la prévention du VIH/SIDA.

Guide d'entretien pour les Paires Educatrices/Animatrices

Introduction

Comme vous le savez, nous sommes en train de parler avec les gens qui ont été impliqués d'une manière ou d'une autre dans les programmes de la prévention du VIH pendant les dix dernières années. Avant que nous n'abordions ces sujets, s'il vous plait, **expliquez nous pourquoi vous avez décidez d'être paire éducatrice ?**

1) Quelles sont vos expériences en tant que paire éducatrice ?

Critères de sélection ;
Formation suivie ;
La durée ;
Les devoirs et responsabilités ;
Bénéfices.

2) Est-ce que vous pouvez nous décrire le projet de paire éducatrice ?

Description ;
Objectifs ;
Services rendus ;
Nombre de femmes touchées.

3) **Résultats**

Obstacles rencontrées
Solutions différentes trouvées ;
Points forts et les points à améliorer ;
Objectifs atteints ;
Perception du projet/programme par la population.

4) Suggestions/recommendations ?

Amélioration de la stratégie ;

5) Autres idées ?