# "Mid-Term Performance Evaluation of USAID's Bilateral VIH Program in Nicaragua"

**Solicitation Number:** (SOL-524-13-000006)

## Component: Assessing PrevenSida Coverage and Quality (Q7, Q8)

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## GLOSSARY

| | |
|---|---|
| ADESENI | Asociación por los Derechos de la Diversidad Sexual Nicaragüense (*Association for the Rights of Sexual Diversity*) |
| AHCV | Asociación de Hombres contra la Violencia (*Association of Men against Violence*) |
| AIDS | Acquired Immunodeficiency Syndrome |
| AMODISEC | Asociación de Movimiento de la Diversidad Sexual Costeña (*Association of the Coastal Sexual Diversity Movement*) |
| ANICP + VIDA | Asociación Nicaragüense de Personas Positivas por la Vida (*Nicaraguan Association of Positive Persons Fighting for Life*) |
| ASONVIHSIDA | Asociación Nicaragüense de VIH/SIDA (*Nicaraguan Association of People Living with HIV/AIDS*) |
| CEPRESI | Centro para la Educación y Prevención del SIDA (*Center for AIDS Education and Prevention*) |
| CI | Confidence Index |
| CONISIDA | Comisión Nicaragüense del SIDA (*Nicaraguan AIDS Commission*) |
| CP | Combination Prevention |
| GAO | Asociación Grupo de Autoayuda de Occidente (*Self-Help Group Association in the West Region*) |
| GF | Global Fund |
| GSB | Gender-Sensitive Budgeting |
| HIV | Human Immunodeficiency Virus |
| M&E | Monitoring and Evaluation |
| MARP | More-at-Risk Population |
| MOH | Ministry of Health |
| MOSAFC | Modelo de Salud Familiar y Comunitario (*Family and Community Health Model*) |
| MOVITEP | Movimiento de Teatro Popular sin Fronteras (*Movement of Popular Theater without Borders*) |
| MSD | Movement for Sexual Diversity |
| MSM | Men who have sex with men |

| | |
|---|---|
| NGO | Nongovernmental organization |
| OR | The ratio of odds of an event occurring |
| OVI | Asociación Organización Vida Integral (*Integral Life Organization*) |
| PLHIV | Persons living with HIV |
| PLACE | Priorities for Local AIDS Control Efforts |
| PPA | Priority Prevention Area |
| PrevenSida | Program for Preventing Transmission of HIV/AIDS among High Risk Populations in Nicaragua |
| RAAN | North Atlantic Autonomous Region |
| RAAS | South Atlantic Autonomous Region |
| STI | Sexually Transmitted Infection |
| SW | Sex Workers |
| TOR | Terms of Reference |
| TRANS | Transgender |
| UR | Unique Register |
| USAID | U.S. Agency for International Development |
| VCT | Voluntary Counseling and Testing for HIV |
| WHO | World Health Organization |

## EXECUTIVE SUMMARY

The findings of the "Assessing PrevenSida Coverage" study, a component of the "Mid-Term Performance Evaluation of USAID's HIV Program in Nicaragua," are presented here. The study was conducted to determine project coverage and effectiveness, with a view at identifying factors that enable or hinder MARP access to preventive activities and their impact on HIV protection capacities. Additionally, the study was seen as an opportunity to apply the main elements of the PLACE approach and methodology proposed by MEASURE/USAID for local epidemic studies. The most relevant evidence and PLACE methodological validation will strengthen the project at its second implementation phase.

The PrevenSida management team selected 29 Priority Prevention Areas (PPAs/PLACE) in five regions based on HIV positive rapid tests performed in the last three years, and other risk and accessibility criteria. A total of 1,393 MARP interviews were conducted, of which 48% were MSM, 32% SW, and 20% TRANS. Fieldwork was organized in such a way that 46% of MARPs were convened by PrevenSida implementing organizations and 54% were contacted at their living and working places to control selection error bias.

Only 11% of MARPs did not receive any preventive activity in the past year; 89% received one or more preventive activities, broken down into 44% of MARPs covered by "other provider agents" and 45% of MARPs reached by some activity from the PrevenSida project (60% TRANS, 46% MSM, and 34% SW). This coverage includes 30% of MARPs under mixed coverage (PrevenSida and other provider agents) and the remaining 15% receives preventive services exclusively from PrevenSida (17% MSM, 16% TRANS, and 11% SW). Four PrevenSida preventive activities have been included in this coverage, namely: promotional contacts covering 26% of MARPs (65% of total coverage), training events covering 25% of MARPs (49% of total coverage), peer socialization groups accounting for 15% of MARPs (41% of total coverage), and VCT accounting for 16% of MARPs (66% of total coverage).

Evidence shows PrevenSida global and exclusive coverage stems from combination care by implementing organizations to the social fabric of MARPs in their immediate environment and the effects of a "pickup" venue mapping developed by PrevenSida since 2013. This translates into a higher probability of access to PrevenSida services by MARPs claiming to participate in some organization and by those meeting "pickups" at bars and discotheques. The prevalence of this logic determines an inverse relationship between expected coverage and municipal HIV test positivity rates, since the largest coverage is found in municipalities with the lowest positivity rates, and vice versa. This means that the territorial risk criterion (PPA) has not been built in PrevenSida planning.

While this condition has ensured better access to MARPs with higher HIV risk occupations, these modes of encounter are strongly conditioned by a wide range of factors facilitating or hindering access, i.e., higher schooling facilitates access, whereas access is hindered by having a school education below 6$^{th}$ grade; not having children facilitates access, whereas having them is a limitation; belonging to the unemployed non-student MARP segment is a facilitating factor, whereas working in places other than bars, discotheques, and motels is a strong coverage limitation; living in the capital city or in a departmental capital facilitates access, as opposed to living in peripheral municipalities; looking for "pickups" at bars and discotheques increases accessibility, whereas seeking them at commercial sites significantly reduces accessibility. These and other coverage-conditioning factors evidenced in this study make it possible to build collective reflection and dialogue to reach a consensus on actions for change.

The study provides evidence of PrevenSida coverage effects on result indicators, particularly those dealing with behavioral changes for protection, such as consistently using condoms and reducing the number of sexual partners and the number of new sexual partners in the last month. In this behavioral modification, varying degrees of association are identified with PrevenSida global and exclusive coverage, and with specific activities, particularly

those fostering more interaction and dialogue on account of their nature, such as training events, peer group socialization, and VCT with its counseling component. In these specific activities significant differences were found in terms of a higher PrevenSida impact, as compared to other preventive service providers.

It must be mentioned, however, that the high risk indicator used in the PLACE approach for persons with two or more sexual partners and at least one new partner in the last month is not only too broad (78% of total MARPs) but also requires longer and deeper exposure for modification. Nonetheless, exposure to training and peer groups shows a reduction, regardless of the preventive service provider.

The study validates the main PLACE approach methodological components, inasmuch as they are crucial epidemiological elements to address the epidemic at the local level and provide key inputs to project and program management decisions. PrevenSida has already started applying some of these elements, particularly for identifying local scenarios where "new pickups" can be met, and found that in addition to their contribution to MARP coverage and accessibility, there were also some limitations in the narrow "mapping" focus on commercial and population concentration areas where 36% of MARPs seek "pickups". The importance of such elements as a PPA definition based on easy-to-process information like HIV test positivity, rating MARP individual risks, including the "new partner" concept, and improving such valuable tools like "mapping", could strengthen the capacities of the PrevenSida network and the project as a whole.

The study validated the inclusion of local and national scenario structural elements, such as the incidence of tourism, population mobility, and high concentration of workers in enclave economies, identifying them at both the individual level (each MARP's relationship by virtue of its work) and the aggregate level of influence on the economy and social life of PPAs targeted by the study. Evidence was found of their influence on both PrevenSida coverage and modification of their impacts on outcome indicators. The study identified their importance to the HIV epidemic and the need for incorporating these elements in local intervention analyses and strategies, including targeting actions and partnerships.

The number of interpersonal contacts per MARP was found to have a limited impact on outcome indicators and a strong impact on increased coverage of other preventive activities, evidencing its promotional and motivating role. While this ratifies its importance and role in the project's planning model, it also points to the need for its insertion in the combination prevention model.

The research team highlights the usefulness of this report as educational material to encourage collective reflection and dialogue at different project and program levels, in order to strengthen them.

## I. BACKGROUND-RATIONALE

The first phase of the evaluation process of the USAID/HIV program in Nicaragua has been developed, as stated in Solicitation SOL-524-13-000006, covering the performance of the program as a whole. TORs included a second phase aimed at answering two additional questions as the basis for recommending adjustments to PEPFAR[1] Central America Partnership Framework in the remaining years (2010-2015):

***Q7: What is the coverage of HIV prevention actions implemented by the PrevenSida project in each key population?***

***Q8: What activities are deemed to be successful or not successful in these populations, and why? How can these outcomes be used in planning future programs?***

PrevenSida is the specific project that develops national policies and standards in the proposed combination prevention model[2] targeted on MARPs and other vulnerable populations. It operates through a civil society organization network that has to address the wide accessibility gaps previously found in these populations by ensuring delivery of a minimum package of (behavioral, biomedical, and structural) care for each person, in order to increase their capacity to control HIV infection risk.

The USAID/HIV program has strengthened the capacities of the health system to comprehensively address the epidemic by developing novel proposals that have materialized into a body of regulatory, methodological, pedagogical, and monitoring tools, as well as sustainable processes seen from the perspective of the different prevention levels and coordination of the different subsystems and social actors in the comprehensive epidemic approach.

This study is assumed as the second phase of the same process, which seeks to delve deeper into some analytical elements, focusing on the PrevenSida Project as its main strategic axis. To the extent that it closes existing accessibility gaps for key populations in the prevention area, it continuously shapes and validates in practice a preventive care model that requires support from all program components and provides essential inputs to the components for achieving their own goals.

The program performance evaluation[3]focused on the compliance of a set of indicators established for the four programmatic components, which in turn have translated into significant contributions to the overall HIV epidemic approach in Nicaragua. The wide diversity of achievements, particularly those directly related to the preventive care model of key populations, which has been evolving from a clear exclusion of MARPs (MSM, TRANS, sexual workers) in the context of national policies promoting a Family and Community Health Model[4] (MOSAFC):

- MARP coverage has been attained through interpersonal communication activities on prevention, as a complement to the other initiatives undertaken in the national response (GF). Based on the MARP population estimated and approved by CONISIDA for 2013, PrevenSida has reached an estimated 42% of sex workers, 40% of MSM, and 43% of the national TRANS population. In turn, this coverage shows significant progress has been made in terms of reducing stigma and distrust as accessibility barriers, while remarkable increases have been achieved in the three MARP groups that have had two or more contacts, revealing the development of communication methodologies and other central elements of the preventive care model, such as mapping pickup venues and building local networks promoted and led by the groups themselves.

- Currently, PrevenSida has a network of civil society organizations (MARP and HIV associations, local and national NGOs, businesses, universities) that grows every year and engages with other national response initiative networks. This interaction is meant to share a unified institutional strengthening strategy to constantly build management, administrative, and monitoring and evaluation capacities based on a Unified Register[5] of people served and services rendered.
- The program evaluation also showed that combination prevention action coverage makes a difference in HIV seroprevalence probabilities by reducing reaction to rapid tests, in comparison with populations that had not been exposed to preventive actions *(OR 0.55, CI 95% 0.3 – 0.9).* This relationship, however, was only found in NGOs that had been working in the PrevenSida network for over a year.

Evidence gathered during the program performance evaluation has contributed to highlight the meaning of the two questions to be answered in its entire dimension by seeking to explain whether the effectiveness criterion of the actions could be associated to a stronger link with MARP grassroots in line with the implementation of strategies more adjusted to the specificity of each site.

In this context, the reference framework becomes a suitable scenario to implement the PLACE method developed by the USAID-sponsored MEASURE evaluation[6] through a methodological systematization of the approximation process steps for identifying local networks used by MARPs to find new sexual partners, which are the main scenario for the transmission of new infections according to available scientific evidence.

The PLACE method focuses on venues where MARPs usually gather in search of new partners, either "commercial sexual clients" or just new "pickups", and emphasizes the "network" nature of these sites inasmuch as they encompass the entire process of making contact, encouraging a mutual interest and consolidating the new liaison until finally a sexual encounter is agreed. These can include outdoor spaces (parks, streets, docks, etc.), restaurants, bars, discotheques, and motels. This "new sexual encounter network" notion implicitly entails a territorial concept because these sites are usually located in close proximity to each other and are related by communication and transportation mechanisms. This territorial notion is called "VENUES" (translation by PLACE).

It should be noted that the configuration of these venues with an appropriate set of establishments makes them predominantly urban, although they are created and consolidated away from residential areas on account of their "pickup venue" nature. The factors that determine where a "pickup venue" is created and developed in a city or geographic location in Nicaragua are highly varied, but they always follow high concentrations of people, whether or not permanent, such as:

- Recreational areas where people are present with no specific origin and which are largely located according to urban development and commercial criteria.
- Industrial zones or production enclaves (off-shore assembly, mines, seasonal harvests, etc.) with a high concentration of permanent or seasonal workers.
- Permanent or seasonal tourist destinations with a strong presence of national or foreign tourists.
- Cargo or passenger transport network nodes, such as bus terminals, borders, ports, and rest areas for international cargo transporters, which create concentrations of transport workers or users.
- Defined commercial sex areas with their own clients (bars, brothels, movie theaters, etc.)

While general elements with similar characteristics are found in the various types of "pickup venues", it is also clear that each venue exhibits unique features derived from the ecological, climate, demographic, social and cultural conditions of each location. This leads to one fundamental characteristic of the PLACE method, which consists of

methodologically recognizing and addressing the fact that national or regional epidemics are actually a combination of local epidemics, each having a unique nature contingent on how the HIV epidemic transmission chains are built at each particular location. Thus, the method is used in studying transmission networks to characterize local epidemics, in order to design or tailor locally-defined intervention strategies, although it also allows to make more general inferences to be used as inputs for broader policies and strategies.

By and large, the epidemiological analysis being carried out enables a broad diversification of the benefits of the PLACE method, even more so when it goes beyond sporadic studies to become an ongoing local capacity-building process to follow and use it. At national level, it also builds capacities for consolidating baseline studies to produce monitoring and dialogue inputs for public policy.

The potential benefits of the "PLACE" method could be summarized as follows:

**Table 1: PLACE Methodology Summary**

| RELEVANT PROCESSES | "PLACE" METHOD OUTPUTS |
|---|---|
| **Micro localized incidence surveillance** | — ***Periodic indicators***<br>— ***Network maps*** |
| **Behavior monitoring and coverage of the program** | — ***Indicators, maps***<br>— ***MARP and network behavior***<br>— ***Coverage of actions in MARPs and networks*** |
| **Differentiated intervention design** | — ***Contents and methodologies***<br>— ***Service delivery modes (interpersonal communication, peers, exchanges, etc.)***<br>— ***Building support networks*** |
| **Program scaling** | — ***Model and methodology validation***<br>— ***Process systematization implementation***<br>— ***Lessons learned*** |
| **Community mobilization** | — ***Motivates and stimulates encounters. CS/Inst***<br>— ***New project inputs and support*** |
| **Evidence as a powerful educational tool** | — ***Encourages reflection, dialogue, and agreement***<br>— ***Exchange for building broader networks***<br>— ***Public policy inputs*** |

*PrevenSida is an innovative project of the United States Agency for International Development (USAID) for HIV/AIDS transmission prevention in high risk populations. It will be developed in five years (2010-2015) through a 5 million dollar investment.*

*The program is managed by University Research Co., LLC (URC)[7] under cooperative agreement number AID-524-A-10-00003.*

***PrevenSida Goal***

*Increasing healthy behaviors in higher risk people to decrease HIV/AIDS transmission through condom use, reduced number of sexual partners, and increased access to HIV counseling and promotion of testing.*

***PrevenSida Impact Indicators***

- *A 50% increase (from baseline) in consistent condom use in all sexual contacts, including stable partners.*
- *A 30% decrease (from baseline) in the number of multiple partners among high risk population.*
- *A 60% increase (from baseline) in the use of counseling and test promotion.*

**Table 2**
**Municipality Prioritization.**
**PrevenSida Proposal**

| Region | Incidence (%) in 2011-2013 | | | |
|---|---|---|---|---|
| | No Cases | 0.01% - 1 Case | 0.02% to 0.03% | 0.04% or more |
| Managua | 1 | 3 | 4 | 1 |
| Western | 8 | 6 | 8 | 2 |
| SouthernPacific | 14 | 9 | 4 | 4 |
| Central | 35 | 15 | 12 | 5 |
| Caribbean | 7 | 7 | 5 | 7 |
| Total Municipalities | 65 | 40 | 33 | 19 |
| **PLACE Sample** | **4** | **4** | **9** | **8** |

## II. METHODOLOGY

In order to answer the two questions set forth in the TORs within the context of the PLACE method application, the general objective of this study was defined as:

"Assessing PrevenSida/USAID project coverage and effectiveness in the different contexts where it operates, in order to provide inputs that contribute to tailor local HIV preventive intervention strategies in MARPs."

To this end, it became necessary to address complexity in different levels of analysis, which was translated into specific objectives,

- Characterizing MARPs according to types of venues identified as HIV transmission network scenarios.
- Characterizing MARPs covered by PrevenSida actions.
- Identifying a series of factors associated to populations and social scenarios influencing effectiveness of PrevenSida preventive action coverage.

To achieve these objectives, the PLACE method will require a single database containing data on venue characterization and MARP population in each venue.

These outlined objectives made it easier to highlight the main findings that were deemed significant in the analysis for promoting a collective dialogue among different social actors involved in the national response, which in addition to making progress in the interpretative models of the findings also incorporates consultation and consensus-building processes for adjusting HIV prevention strategies in Nicaragua.

### 2.1 Study Population: Universe and Sample

In line with national policies, PrevenSida prioritizes preventive care for men who have sex with men (MSM), transgenders (TRANS) and sex workers (SW), and has been expanding its coverage in 11 departments in the country[8], covering 20,869 MSM, 7,269 TRANS and 2,344 SW in 2013. For 2014, an expansion of the NGO network, as well as a wider population and territory coverage, has been planned and implemented.

In this framework, the study adopted a selection process based on a stratification by clusters according to the PLACE method, resulting in the selection of Priority Prevention Areas (PPAs), ranked as having the highest likelihood of HIV transmission on account of their

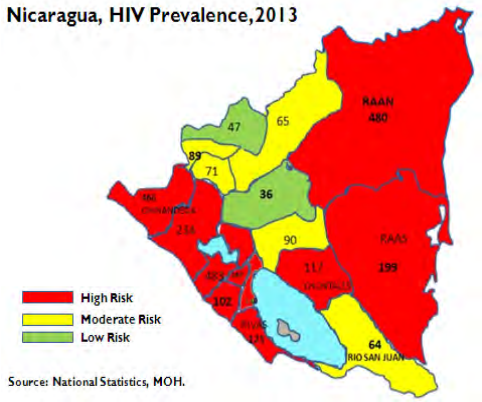



**Table 3**
**Estimated Population 2013 – CONISIDA Data**

| Region | MSM | TRANS | SW | Total |
|---|---|---|---|---|
| Managua | 16,127 | 6,121 | 1,296 | 23,544 |
| West | 9,224 | 2,281 | 1,043 | 12,548 |
| South Pacific | 8,804 | 2,507 | 1,369 | 12,680 |
| Central | 10,257 | 3,181 | 1,217 | 14,655 |
| Caribbean | 7,677 | 3,149 | 485 | 11,311 |
| **Nicaragua** | **52,090** | **17,239** | **5,410** | **74,739** |

**Table 4**
**Served by PrevenSida 2013 – MARP UR***

| Region | MSM | SW | TRANS | Total |
|---|---|---|---|---|
| Managua | 8,954 | 3,736 | 752 | 13,442 |
| Western | 5,100 | 1,610 | 990 | 7.700 |
| South Pacific | 2,650 | 2,763 | 363 | 3,490 |
| Central | 1,085 | 296 | 196 | 1,577 |
| Caribbean | 3,080 | 1,150 | 42 | 4,272 |
| **Nicaragua** | **20,869** | **7,269** | **2,343** | **30,481** |

**Unique Register*

characteristic typologies and being representative of those specific territories covered by this study.

The PPA selection process was based on two major stratification levels (region and municipality) and the following main criteria:

- HIV infection prevalence and incidence, applying the methodology principle of the PLACE approach for tracing infection transmission to define PPAs. This criterion was contributed by the HIV/USAID Program and PrevenSida based on the review of the reactivity of all rapid tests performed in the last three years, which led to four levels of positivity (reactive tests).
- The incidence of major underlying factors (tourism/recreation, production enclaves, transport network),to the extent that they determine MARP concentration venues and new sexual encounter networks.
- PrevenSida coverage. To the extent that its evaluation is the purpose of this study and determines the level of access to MARP clusters in each selected PPA. In this regard, the application of the efficiency principle was anticipated because the selected PPA must ensure a minimum MARP to justify mobilizing resources thereto.

To establish the starting point, the study has used information provided by national response governing institutions, defining five representative regions with different characteristics making up the main risk areas at the national level, in terms of detected case prevalence.

A national risk mapping clearly identifies three regions with two risk levels: the Pacific and Caribbean regions with a high risk, and the Central region with a predominant medium and low risk.[9]

The Department of Managua is different due to its political, administrative and demographic characteristics, which condition the highest concentrationof MARPs and potential "VENUES" to be selected as PPAs in the study.

Consequently, five regions were defined as a first stratification level, which delimits sample representativeness and therefore should concentrate sufficient population to support a stratified analysis.

The selection process was complemented with the identification of venues at the municipal level. To this end, the PrevenSida network was used as a starting point because it has a presence in over 60 municipalities, in the majority of which (44) HIV rapid tests are performed. The selection process was carried out by sequentially

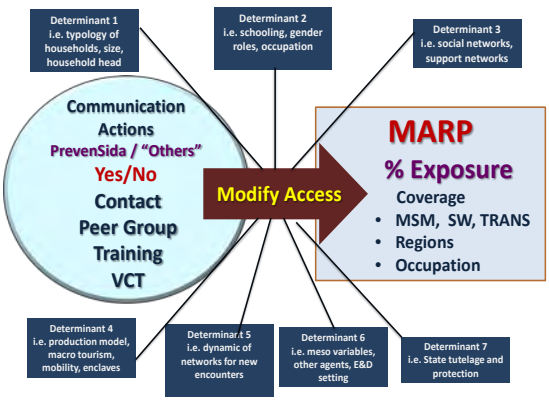
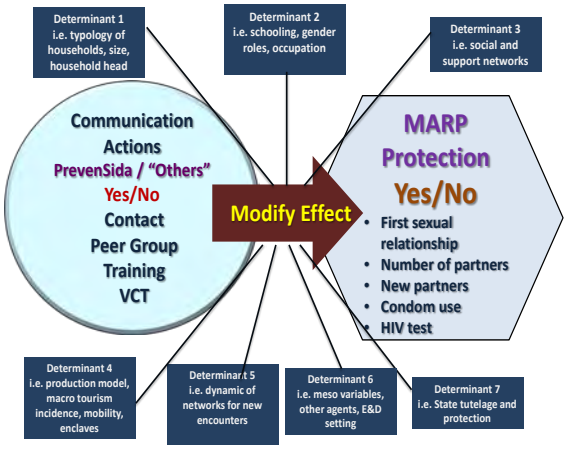



**Table 5**
**PrevenSida Coverage 2013**

| MARP Type | Official CONISIDA Data | MARP UR 2013 | PrevenSida Coverage |
|---|---|---|---|
| MSM | 52,090 | 20,869 | 40% |
| TRANS | 17,239 | 7,269 | 42% |
| SW | 5,410 | 2,343 | 43% |
| **Total MARP** | **74,739** | **30,481** | **41%** |




applying the three criteria agreed between the research team and PrevenSida coordinating team.

The first selection criterion was the incidence detected by PrevenSida (reactive rapid tests) in four years of work. Thus, 15 municipalities emerged where at least one HIV reactive test had been detected, all of which were included in the sample, regardless of how the other criteria will be combined.

The second criterion applied was the actual coverage of PrevenSida based on specific knowledge on "VENUES" in terms of MARP density and accessibility during fieldwork. The main information was provided by the PrevenSida team, which has a mapping[10] of the most frequently used venues in each municipality for "new pickups", as well as the knowledge and linkages of each organization. Based on the jointly formulated proposal, NGO managers and officials in the preselected municipalities were consulted, whose cumulative knowledge and experience quality them to provide an "expert opinion" in relation to the preselected PPAs. Minor adjustments were made to the initial list.

The last criterion was based on the incidence of structural (underlying) factors, also applied in consultation with "expert" organization staff, whose knowledge enabled to rank incidence and infection probabilities in tourism, transport network, and labor enclaves, which served as the basis for final adjustments to the share of each MARP type.

Based on available information, such as the official MARP population estimates at the departmental level and PrevenSida coverage, 25 PPAs were selected (one per municipality, 4–5 in the Managua municipality), accounting for an estimated sample of 1,600 MARPs to be interviewed.

## 2.2 Pertinent and Relevant Information

In accordance with the guideline questions and objectives of the study, instruments were developed to gather information relevant to the characterization of the coverage status of each MARP, as well as for the characterization of each site to be measured.

In the characterization of the SITE, a guide was applied by field team coordinators, together with the staff of NGOs that belong to the PrevenSida NETWORK and have a presence at the site.

Significant progress has been made to the extent that most PrevenSida network organizations have mapped new pickup "nodes" with very relevant basic information. It can be affirmed that the "PLACE"

methodology, focused on characterizing "pickup" establishments and venues has been highly applied in its more specific and local dimension.

A questionnaire for individual dialogue interviews targeted to MARPs was developed as the main methodological tool of this study since the most trustworthy source in both coverage and its effects on protection capacities is the own "VOICE" of MARPs that could be potentially exposed to the actions of the PrevenSida network.

Given the evaluative bias of the study raised in the guideline questions and objectives, the methodological tool is mostly targeted on:

- Assessing coverage achieved through interpersonal communication actions in the MARP universe.
- Assessing coverage effectiveness of actions by their impact on MARP protective capacities.

In compliance with these two objectives, the analysis identified factors conditioning access and thus modifying coverage. Likewise, the incidence of these factors on the achievement of expected results was analyzed, that is to say, which modify effectiveness of exposure to the actions through their association with changes in MARP protective capacities, i.e., their potential impact.

This methodological guideline led to the design of a dialogue interview questionnaire, including questions to enable the construction of three types of indicators:

1. <u>Exposure to preventive services. Coverage</u>

   These indicators show the share of MARPs that have received some of the studied preventive services, including 6 activities. Changes or differences in MARP stratification variables are analyzed for each activity.

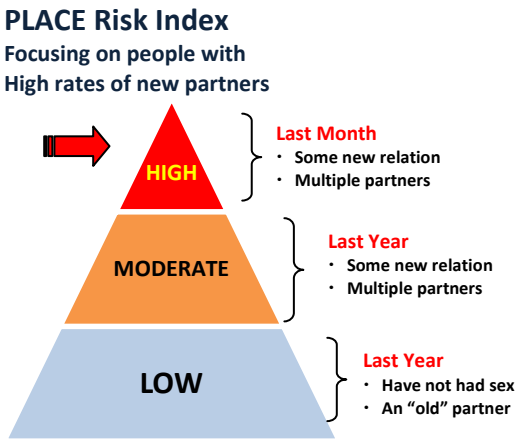
   Based on the nominal identification of the organization providing or promoting each service provided by the interviewed MARPs, we were able to differentiate the coverage provided by PrevenSida from that offered by "Other Providers", so as to enable a contrast analysis between exposed and non-exposed MARPs, and between MARPs served by PrevenSida and those served by "Others". A confluence indicator was developed for the 4 activities more directly related to the combination prevention model, which was used to develop the global coverage indicator analyzed using the same contrasts.

| **Exposure to Interventions**<br>**MARPs WITH/WITHOUT COVERAGE**<br>**PrevenSida/Other Providers** |
|---|
| • Prevention Messages |
| • Personal Contact (promotion/motivation) |
| • Training events |
| • Reflection and dialogue in peer groups |
| • Voluntary counseling and testing (VCT) |

**Table 6**
**PrevenSida Network Organizations.**
**UR-MARP 2014**

| | | |
|---|---|---|
| ACCCS | CREPRESI | IDSDH |
| ADESENI | CEPS | Ingenio San Antonio |
| ADISNIC | COSEP | IXCHEN |
| AGENTES DE CAMBIO | PADCANIC | MDS RAAS |
| AMODISECRAAN | PSL | MOJUDS |
| ANCP¿VIDA | GAO | NAVINIC |
| ASONVIHSIDA | GAVIOTA | OVI |
| CASUR | HIJAS DE LA LUNA | PrevenSida |
| CBGODEM | ICAS | RDS |

| **Result Indicators:**<br>**Protective Behaviors** |
|---|
| • Age at first sexual relation |
| • Number of sex partners |
| • Number of new sex partners |
| • New infection risk index. "Place" |
| • STI Background |
| • Use of condom |
| • Current HIV test |




| Effect Modifiers<br>Personal, Family and Site |
|---|
| Cluster variables at the site<br>*Tourism or mobile population incidence; recreation or commerce places* |
| Person: *Age, sex, sexual identity, schooling, occupation, has a partner, lives with partner* |
| Household type: *Own/other head of household, children, economic contribution* |
| Trust in services/social support networks |
| Recognizes unmet rights |

2. Protection against HIV. Outcomes.
   Indicators targeted to measure whether or not protective practices are used to prevent HIV infection, in order to detect changes or differences that could be attributable to exposure to preventive actions provided by the PrevenSida network or "other provider agents".

   The inclusion of the specific contribution of the PLACE approach regarding new sexual partners is worth mentioning, as well as a new infection risk index that combines the number of new sexual partners and the number of total sexual partners each person has had in the last month (high risk) and year (moderate risk). A low risk refers to stable and monogamous couples based on fidelity, or persons with no sexual partners in the last year.

3. Conditioning factors. Effect modifiers
   These are particular characteristics of MARPs, their families, or place of residence or location that could have a bearing on the probabilities of accessing preventive services, or affect protection capacities.
   Age, schooling, type of work, participation in organizations, habitual "pickup" venues, sexual initiation conditions, having children, and living with their partners, among other things, are MARP characteristics that could facilitate or hinder access to prevention services and thus modify coverage, as well as household characteristics, i.e., head of household, economic contributions, or characteristics of the site, such as the incidence of a production model, tourism, transport or type of urban center where site is located.

   Whenever a significant basic association was found in evaluating coverage or action effectiveness, a review was carried out to determine whether any of the characteristics of the person, family, or site were acting as an effect modifier, in order to provide evidence about the conditions in which PrevenSida is linked to MARPs or the effects generated by such link.

### 2.3 Fieldwork

Based on a consensus reached with the PrevenSida team in relation to the selection of venues to be measured and the MARP questionnaire, three field teams of four people were formed, namely, three MARP peer interviewers(MSM, TRANS, SW) and one coordinator/supervisor.

Field staff was trained in a two-and-a-half-day workshop (July 10-12, 2014) covering an 8-item agenda (see attached table).

**Training Workshop Agenda**
Three field teams - 2½ days

a. Contextualization and study objectives
b. "Place" approach and method
c. Study framework and ethical principles
d. Questionnaire review
e. Dialogue interview methods and techniques
f. Registration quality
g. Quality control levels and processes
h. Questionnaire validation

The training workshop ended with the validation of the MARP questionnaire through interviews with members of the three population groups invited or contacted in habitual concentration venues. A collective evaluation session of the validation was held on the basis of which final adjustments were made to the questionnaire.

Fieldwork began when the three supervisors got in touch with, or paid an on-site visit to, all PrevenSida network organizations serving the selected municipalities, for the purpose of getting their "expert opinion" on MARP accessibility conditions in each municipality in order to adjust the sample and define MARP contact strategies (call, staggered group concentration, contact in venue network nodes, etc.). Strategies were balanced to reduce and prevent as much as possible any "selection bias" that could arise if only one approach was used, which would result in an overrepresentation of MARPs close to PrevenSida.

**Contact Modalities**
**Balance avoids "selection bias"**

- Call
(NGOs – Lead associations of the groups)
- Snowball...
First ones invite others
- Search in concentration sites
(Town squares, shopping malls and recreational areas)
- Search in "pickup" venues
(Bars, discotheques, motels)

Three routes were established in accordance with proximity and channels of communication. The planned route made it possible to develop, in consensus with local NGOs, an arrival schedule at each site, and work agendas were determined by contact strategies. This preparatory work was critical to ensure fieldwork efficiency in terms of population goals and the highest potential efficiency since at least one work day (8–12 hours) was scheduled for each site, which was extended in some places according to conditions of MARP share in each municipality.

Fieldwork started on July 14th and ended on August 6th. On the first day, the three teams worked at a single venue in the city of Managua, in order to encourage an exchange of experiences and consolidate the introduction and greeting, build trust with the interviewed MARP, manage the questionnaire, dialogue interview techniques and recording quality. At the end of the first day, quality control guidelines and timing were strengthened by the coordinating team.

On the second day of fieldwork, teams began their own route plan, getting in touch with relevant NGO contacts at each site two days prior to the scheduled date, in order to confirm agendas and MARP shares, as previously agreed.

In most measurement sites, an adequate call and collaboration was found in relation to concentration and pickup venues, in order to find and interview MARPs, albeit the scheduled share could not always be completed. We highlight the participation of many PrevenSida network NGOs that made valuable contributions through their connections, knowledge, and venue mapping. Major difficulties were found in some

venues because the agreed call had not been issued despite prior scheduling and confirmation before the team's arrival and, in some cases,it was not possible to contact the reference persons. When the scheduled MARP share could not be reached, the team scheduled another visit for the next following days, according to the route plan.

A sample of 1,393 MARP members was gathered, accounting for approximately 87% of the scheduled sample. The sample maintains a desirable internal balance between MARP members who were called by the PrevenSida network (47%) and those contacted on the streets and shopping centers or "pickup" venues (54%), which remains the same for the three populations. As seen in the analysis, it validates intrinsic coverage rates.

## 2.4 Quality Control

Quality control occurred at four points. Firstly, it took place at the time of the interviews through the team coordinator's direct observation and periodic and crossed-checked interview reviews. Secondly, the supervisor reviewed the set of interviews conducted by each interviewer before certifying, signing and delivering them to the data entry process.The third quality control takes place when the data of each interview is entered, based on the experience of the data entry clerk in applying the "right" parameters, which are then fed back to supervisors to correct duplication errors along the way. Finally, each interview is typed by two different data entry clerks, and the two databases are compared automatically to identify disparities and correct errors. The combination of four control points ensures that the database accurately contains the VOICE of MARPs.

| **Quality Control**<br>**Entire process. Four points** |
|---|
| Around the time of MARP interview |
| Certification by field supervisor |
| Evaluation of "right" parameters by entry data clerk |
| Dual data entry |

A team made up of six data entry clerks and one coordinator was responsible for designing a capture screen, including controls to minimize errors and speed up data entry. Data entry clerks were organized in three pairs to perform the aforementioned dual data entry. As a result, 2,786 interviews were digitized to build a debugged 2,393-record database. The data entry process included mesovariable data from venue level forms, in order to enrich the analysis.

| **Principle of Parsimony**<br>**"No more than the minimum needed"** |
|---|
| *The questionnaire is very simple and the number of questions is limited. It consists of one page, on both sides, and did not take more than 15 minutes of the informant´s time. It is a norm that also assumes the privacy of the interview out of respect for people because of the intimate topic being explored and the time of the people interviewed because they must consent to interrupt the activity in which they are engaged.* |

## 2.5 Ethical Framework

Since the study addresses issues usually highly sensitive to people's privacy, in addition to the marked stigma and discrimination suffered by most key groups, special attention was given to ethical aspects in the entire research in the design of the protocol, questionnaires and fieldwork organization.

Given the type of study and the characteristics of the population to be interviewed, several methodological principles, including respect, voluntariness, parsimony and immediacy, were applied in the design of the questionnaire, to ensure instrument suitability, as well as trust, freedom and voluntariness amongst interviewed MARPs.

| **Principle of Immediacy**<br>**Interview as a "colloquial dialogue"** |
|---|
| The semantics of the questions sought to build trust and achieve "immediacy", i.e. easily understood questions and immediate answers. It is a moment for measuring aspects that are not part of a usual conversation and compromise many beliefs and taboos, so when the answers are more spontaneous (less reasoned), they are more respectful and reliable. |

As mentioned already, the ethical framework was significantly relevant in the interviewer and field supervisor training process, emphasizing ethical principles and respect for the rights of people in general, particularly those with HIV/AIDS. A reflection on how dialogue interview methods and techniques embody key ethical principles, i.e., confidentiality, respect of people's dignity, and the right of sexual diversity and to express an opinion, aroused special interest. Training included examples of attitudes, visual or body behaviors, ways of talking or asking questions, and other details that might be construed as disrespect.

| **Principle of Respect and Voluntariness**<br>**No pressure exerted or induced answers** |
|---|
| *The formulation of the questions respects the intimacy and dignity of the informants. Most of the questions seek a YES/NO answer, which sometimes can be maybe or I don´t know.*<br>*Open questions are preferred, so as not to induce preconceived answers.* |

Emphasis was placed on principles of confidentiality and voluntariness to participate in the study. Free and informed participation was ensured by greeting the interviewed persons and making a brief and clear presentation of the purposes of the study, and explicitly making it clear that they had the right to refuse to answer any question or stop the interview.

Respondent names were not recorded to protect confidentiality, and an independent code was developed for the identity of the respondent. Proper safeguard of paper interviews and database was ensured for the information provided.

### 2.6 Processing and Analysis

Based on primary data, went on to build indicators, which were used to conduct three analysis levels:

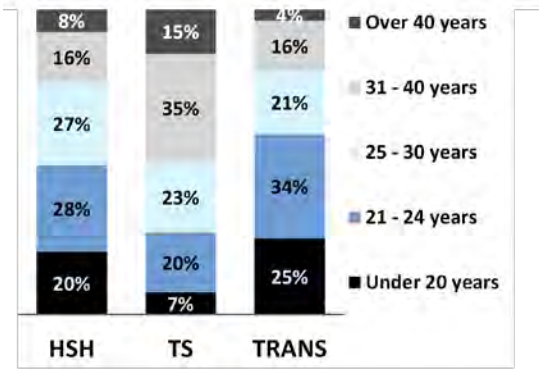
- **Descriptive**, using contingency tables for the three indicator groups (exposure, results, conditioning factors) by MARP group and territory, expressed as simple frequencies (%, rates) or averages or mode values. Tables were prepared, which serve as a preliminary report to be used as a basis for planning risk analysis and stratification.
- **Main association**, comparing coverage indicators to their conditioning factors, or contrasting results between people covered and not covered by PrevenSida project actions. In conducting this analysis, the Mantel-Haenszel procedure, in combination with Cornfield& Miettinen[11] (Cornfield 1956) confidence intervals, were used. Significant associations are reported as raw or weighted odds ratio (OR), with 95% confidence level significance, confirmed by the Chi square ($X^2$) test.
- **Stratification**. Major and significant associations will be subject to the sequential significance and stratification test (Mantel, Haenszel 1958 and Mantel 1963), and to the Woolf heterogeneity test across strata (Woolf 1955), in order to detect effect modifiers or co-variants with a significant incidence on study assessment and management goals. Significant heterogeneities are found when tests show values of $X^{2het}$.

This report is prepared for the purpose of presenting the main findings, without much interpretation.

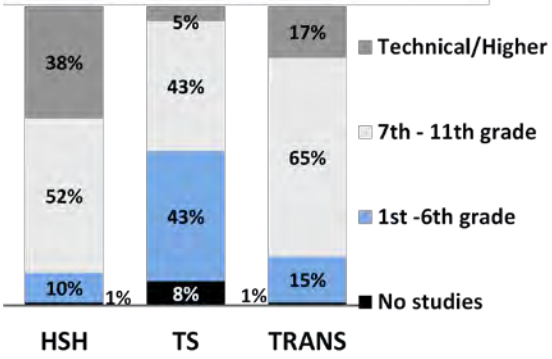
## 3. MAJOR COVERAGE FINDINGS

Major findings are presented in relation to set objectives, focusing attention on an analysis of preventive action coverage and PrevenSida project's contribution to said coverage. Subsequently, the evidence found in reference to the effectiveness attributable to MARP exposure to general preventive actions is shown, specifically those derived from the dynamics of the PrevenSida network.

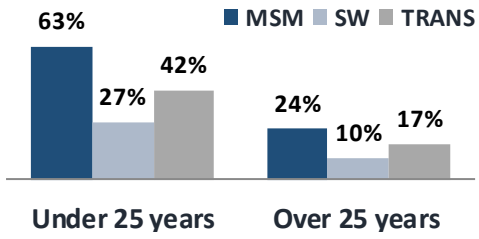
**Graph 2**
**MARPs by Age Bracket**




**Gráph 3**
**MARPs by Schooling Level**




**Graph 4**
**MARPs who Study, by Age**




### 3.1 MARP Characterization

*3.1.1 Age*

More than two thirds of the population sample (68%) is made up of people under 30 years of age, mostly MSM (76%) and TRANS (78%). In the case of SW, the sample is equally distributed across this age bracket (50%) at the expense of having the smallest share in the less-than-20-year-old group (7%), whereas this age bracket accounts for one fifth and one fourth in the other two groups (20% MSM, 25% TRANS). The older-than-40-year-old age bracket is larger in SW (15%) and less significant in the other two groups (8% MSM and 4% TRANS). [*Table 1*]

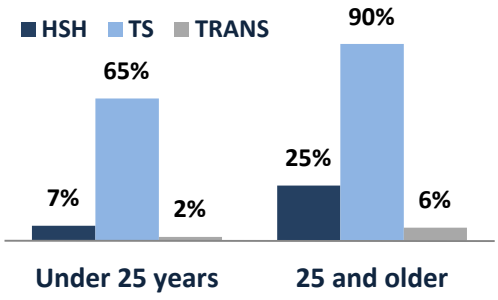
*3.1.2 Schooling and Study*

Over half of MARPs (52%) have a high school level education, making it the majority segment in the three groups; about half of SW, however,completed6th grade or lesswith43%in the 1st–6th grade bracket and 8% with no schooling at all. More than one third (36%) of MSM have received technical or higher education, whereas TRANS only reached 17% in this segment, and only 5% of SW reached this level.

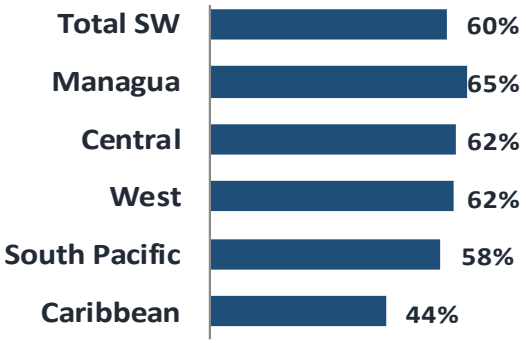
No significant differences are evident in regional schooling distribution amongst MSMs, even in the higher schooling segment, which accounts for 49% and 38%in the Central and Caribbean region, respectively. In the case of TRANS, Managua and the South Pacific region show the lowest technical and higher education rates (12% and 6%), in contrast with26% and 33% in the Central and Caribbean region, respectively. As regards SWs, the Caribbean region stands out. Despite exhibiting a large segment without schooling (10%), it also shows the largest segment with higher schooling (11%). [*Tables 7,8,9*]

One third of MARPs (32%) are studying. The highest rates are found in the Central (40%), Caribbean (39%), and West region (34%), whereas the lowest rates are found in the South Pacific region (29%) and Managua (23%). MSM is the group with the highest education rate (43%), of which 63% and 75% are studying in the Central and Caribbean regions. One third of TRANS (32%) are studying. The Caribbean and Central regions stand out with 91% and 52% rates, respectively. Only 15% of SW are studying, but Managua and the

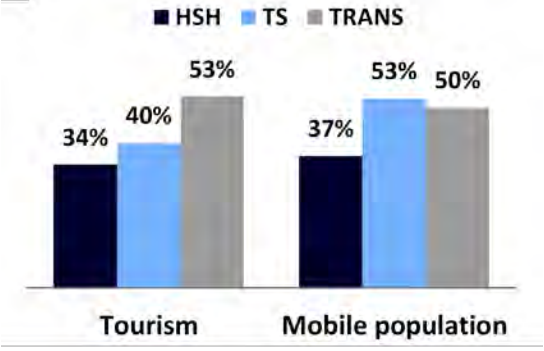
**Graph 5**
**MARPs with Children, by Age**




**Graph 6**
**SWs with 1Child < 20 years, *by region***




**Graph 7**
**MARPs with Jobs Related to Tourism or Mobile Population**




Caribbean region stand out with 34% and 25% rates. As expected, the highest schooling rates are found in younger groups. [*Tables 3 through 6*]

*3.1.3 Household*

One third of MARPs (33%) live in their own home as head of household (27%) or as spouse of the head of household (6%). This condition is found in the majority of SW (55%) and only in a minority of TRANS (23%) and MSM (22%). As a result, two thirds of MARPs (67%) live with their parents, grandparents or in-laws [*Tables 17, 18*].

About 35% of MARPs have children. Similar rates prevail across regions, except for Managua with 42%. Rates increase with age, widely ranging from 8% among those under 20 years to 61% among those more than 40 years old. The group with the highest rates is SW with 83%, showing 41% among those under 20 years of age and 90% among those above 25 years of age. The Caribbean region has the lowest rate (68%) and Managua has the highest rate (91%). Sixteen percent of MSMs have children. The west region stands out with 7%. Rates range from 4% among those under 20 years of age to 39% among those above 40 years of age. Only 4% of the TRANS population has children. [*Tables 10 through 13*]

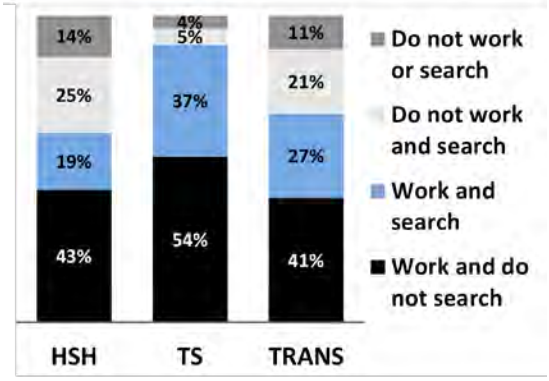
Twenty-two percent of MARPs had their first child when they were under 20 years of age (58% of those with children), and 6% had their first child when they were under 15 years of age (16% of those with children). The highest rate (27%) is reported in Managua and the lowest rate (16%) in the south Pacific region. Sixty percent of SWs had a child when they were under 20 years of age, with the highest rate (65%) reported in Managua and the lowest (44%) in the Caribbean region. Only 5% of MSMs and 1% of TRANS had a child when they were under 20 years of age [*Tables 14 through 16*]

*3.1.4 Work*

Seventy-two percent of MARPs work. The highest rate is found in Managua (79%) and the lowest rates in the south Pacific and Caribbean regions (67%). Ninety-two percent of SW claim to be working, as well as 68% of TRANS, and 62% of MSMs.

Sixty percent of working MARPs claim to be self-employed, as well as 78% of SW, 60% of TRANS, and 42% of MSM. Forty percent of MARPs work for someone and earn a salary, as well as 58% of MSMs, 40% of TRANS, and 22% of SWs [*Tables 19 through 22*]. Seventy percent of SWs and eleven percent of TRANS claim to be sexual workers. Fourteen percent of MARPs work at bars, hotels and restaurants, a sector that employs 18% SW, 14% TRANS, and 11% MSM. Most

**Graph 8**
**MARPs by Labor Status and Job Searching**



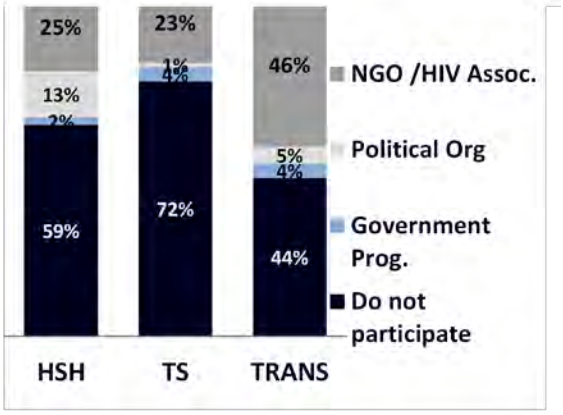

MARPs (53%) claim other occupations, namely, 87% of MSM, 67% of TRANS, and 11% of SW. Seven percent of TRANS and two percent of SWs claim to perform housework [*Table 23*].

Thirty-nine percent of MARPs work in activities related to tourism. The highest rates are found in the Caribbean (54%) and South Pacific region (43%), accounting for 50% of TRANS, 40% of SW, and 33% of MSM. Forty-six percent of MARPs work in activities related to mobile populations (passenger or cargo transport). The highest rates are found in the West (54%) and Caribbean (51%) regions, and the lowest rates are found in the Central (46%), South Pacific (43%), and Managua region (41%). More than half (53%) of working SWs and half (50%) of working TRANS are related to mobile populations. This rate is somewhat lower among MSM (37%) [*Tables 24, 25*].

Forty-four percent of MARPs search for work. Sixty-four percent are unemployed and 36% are working. but want to change jobs. The highest rate of MARPs who want to change jobs is found among SWs and TRANS, accounting for 40% of those who work in each group. Thirty percent of working MSMs are also searching for another job. Consequently, 46% of MARPs work and do not search jobs, 26% work but keep searching for another job, 18% do not work and are searching for jobs, and 10% are unemployed and are not searching for jobs.

This situation is expressed differently in each MARP group. As can be seen, although SWs make up the largest segment of workers not looking for a job (54%), they are also the largest segment (37%) of workers looking for another job to change working conditions, and certainly some want to change activities. This segment is also large for TRANS (27%) and MSM (19%), which is significant in relation to the other groups on account of their associations with self-esteem and risky practices [*Table 26*].

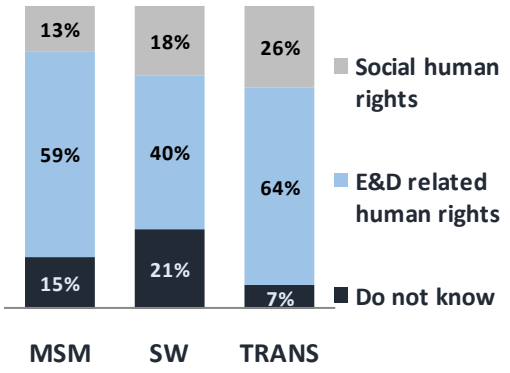
**Graph 9**
**MARPs by Participation in Organizations**



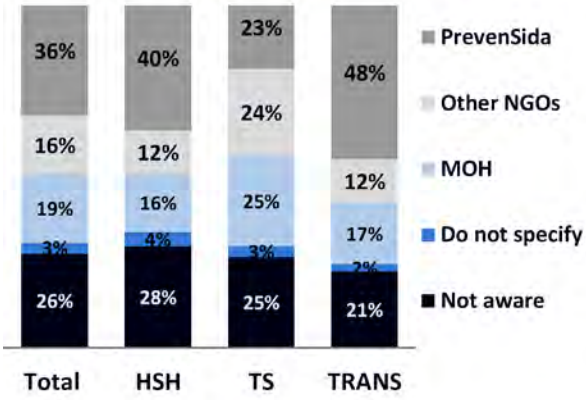

*3.1.5 Participation in Organizations*

Forty percent of MARPs claim to be involved in some organization, namely, 56% of TRANS, 41% of MSM, and 28% of SW. The highest participation rate is found in the West region at 54%, and the lowest rate is found in the South Pacific region at 25%, while the other regions range from 37% to 43%. Twenty-nine percent identify their participation with an NGO or an association working on HIV, particularly TRANS (46%). Three percent name some government program (GSP), while 8% mention a political organization (mostly MSM at 13%) [*Tables 27, 28*].

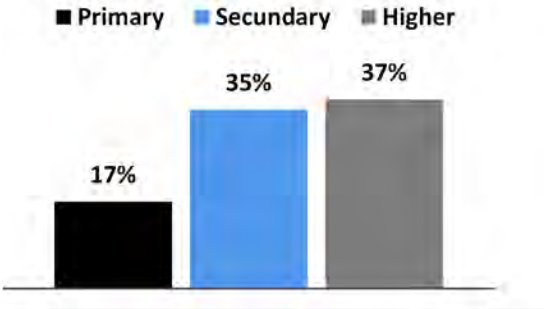
**Graph 10**
**MARPs by Awareness of Unrealized Rights**




**Graph 11**
**MARPs aware of HIV support Organizations.**
***By MARP type and named organization***




**Graph 12**
**MARPs who have used PrevenSida HIV Support Services. *By Schooling Level***




*3.1.6 Awareness of Rights*

To the question, "Could you tell me one right that has not been realized for … *SW, MSM, TRANS?," nine percent* answered, "None is realized", and 5% said "All are realized." Fifteen percent of MARPs, including 21% of SW, 15% of MSM, and 7% of TRANS, replied "I don't know." Fifty-four percent of MARPs mentioned some rights related to the group's stigma and discrimination status (respect, non-violence, freedom of expression, equality), accounting for 59% of MSM, 40% of SW, and 64% of TRANS. Seventeen percent of MARPs, including 26% of TRANS, 18% of SW and 13% of MSM, pointed out some basic rights that are not realized (health, education, housing, employment) [*Tables 29 through 33*].

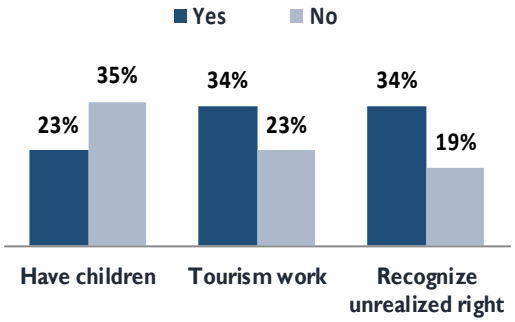
*3.1.7 Trust in HIV Care Network*

Seventy-four percent of MARPs are aware of some organization that can provide HIV support services, accounting for 79% of TRANS, 75% of SW and 72% of MSM [*Table 34*], with regional differences ranging from the highest in the Caribbean (85%) to the lowest in the South Pacific region (66%).

Thirty-six percent of MARPs mention an organization in the PrevenSida network, 16% mention other NGOs, and 19% mention MOH services and other public services, while 26% did not recognize any support organization. The proportional distribution of the three types of services stand out among SW, ranging from 23% to 25%, while the percentage of MSMs and TRANS that mention the PrevenSida network is by far the majority (40% and 48%, respectively). The Caribbean region and Managua have the highest PrevenSida network awareness rates, while the Central region shows the lowest rate [*Tables 35, 36*].

In addition to awareness, interviewed MARPs were asked if they had used those services in the last year, and the response was that 59% of MARPs had been exposed to the services, including 65% TRANS, 63% SW, and 53% MSM. The highest coverage was reported in Managua (67%) and the lowest in the Central region (50%) [*Table 37*]. The PrevenSida network contributes to this coverage by serving 31% of all MARPs (46% in the Caribbean, 17% in the Central region). PrevenSida support services cover 32% of MSM (50% in the Caribbean, 22% in the Central region), 21% of SW (40% in the Caribbean, 2% in the Central region), and 43% of TRANS (55% in Managua and the West region, 24% in the Central and South Pacific regions) [*Table 38*].

**Graph 13**
**MARPs who have used PrevenSida HIV Support Services, by *factors of significant impact***

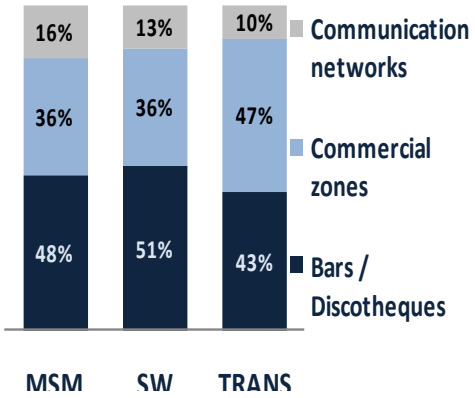



In addition to the region and MARP group, PrevenSida network coverage with HIV support services is associated with other factors:

- Coverage increases with schooling level, accounting for 17% *($X^2$ 39.4)* at the elementary school level, 35% *($X^2$ 6.5)* at the secondary school level, and up to 37% *($X^2$ 29.7 2GI)* at the technical and higher education level.
- Not having children (35%), as compared to MARPs that have children (23%) *(OR 1.9, CI95% 1.4-2.4, $X^2$ 23.0)*.
- Having a tourism-related job (34%) as opposed to other jobs (26%) *(OR 1.4, CI95% 1.1-1.9, $X^2$ 5.6)*.
- Recognizing any right that has not been realized for them as a group (34%), in contrast with MARPs that are not aware of unrealized rights (19%) *(OR 2.1, CI95% 1.5-3.0, $X^2$ 21.0)*.

### *3.1.8 Usual Venues for Meeting New Sexual Partners*

**Graph 14**
**MARPs by Usual "New Pickup" Venues**

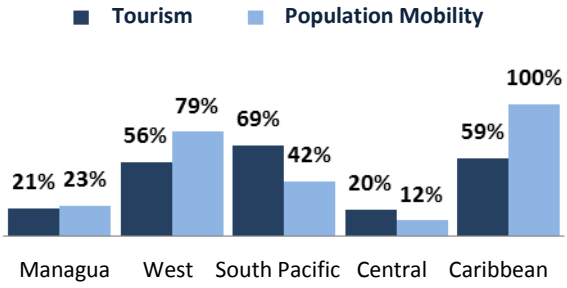



In applying the central elements of the PLACE approach, inquiries were made about the places most often used by MARPs to meet "new pickups". Forty-eight percent responded that they looked for new partners at bars, discotheques and hotels, usually located in recreational areas or near population concentration sites on account of their mobility (terminals, ports, etc.). Thirty-eight percent indicated that they seek new sexual partners in commercial areas, including shopping centers, streets, or markets. Finally, 14% pointed out that they met new pickups in communication networks based on mobile phones or Internet.

By and large, the three MARP groups exhibit a similar structure in the use of the three types of venues to find "new pickups", and the broader use of "networks" by MSM and commercial areas by TRANS stand out.

### *3.1.9 Level of Influence of Local Structural Factors*

**Graph 15**
**MARPs in municipalities with high tourism and mobility rates by region**




At each venue to be mapped, fieldwork team coordinators interviewed key informants, including PrevenSida network NGO staff, MARP group leaders, or local institution officials with broad knowledge of, and experience with, local reality. This was done to gather qualitative information about structural factors that might be affecting MARP living or working dynamics (for instance, commercial sex, meeting venues, etc.), including periodicity/seasonality of these dynamics. From the perspective of the PrevenSida coverage analysis, the level of incidence of tourism, mobile population flows and cargo transport rest areas stands out.

## 3.2 Total MARP Coverage

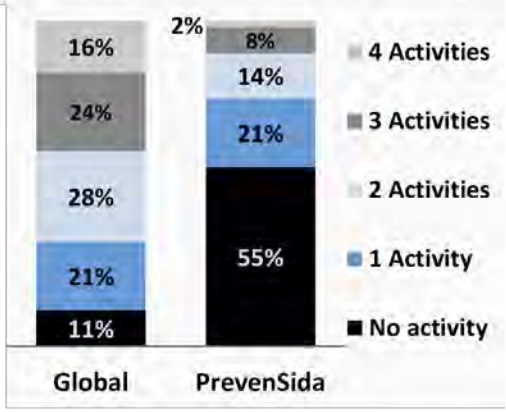
This section deals with the exposure of interviewed MARPs to the combined actions of different preventive service providers. To this end, four iconic activities were included as the main transformation axis in HIV epidemic programs targeted on high risk population groups (MARPs), based on interpersonal preventive action communication, which as a whole makes up the combination prevention model, to wit:

1. Exposure to promotional contacts in MARP living spaces and recently focused on concentration venues where new sexual partners are sought (bars, discotheques, shopping centers, streets, tourist sites, etc.).
2. Training or exchange events dealing with general or HIV-specific issues that address behavioral change, gender-based violence, stigma and discrimination, etc.
3. Peer groups, where 6–9 individuals from the same MARP group share experiences in relation to HIV protection.
4. HIV voluntary counseling and testing in accordance with national protocols and under such conditions that it can be offered by health institutions or NGOs that have taken on this responsibility.

Two indicators have been built through a simple summation of these activities in each interviewed MARP:

- Number of activities that each MARP has been exposed to in the past year, regardless of the service providing source, referred to as MARP "global coverage." The variable resulting from the summation has 0–4 values, with 0 identifying persons who have not received any activity (no coverage) and the remaining values (1–4) indicating the number of activities to which they have been exposed. A second variable is a dichotomous variable, which shows if each individual MARP member has been covered (by one or more activities) or not covered at all (no activity).
- As shown above, a simple summation of activities provided by some PrevenSida network organization was done, obtaining two similar variables. In other words, the number of activities provided by PrevenSida to which each MARP member has been exposed, and the dichotomous variable in which each of the two values expresses either "With PrevenSida network coverage" (one or more activities provided by these organizations) or "No PrevenSida network coverage" (no network organization was named as provider).

**Graph 16**
**MARPs with a 4-Activity Combined Coverage. *Global and PrevenSida coverage***

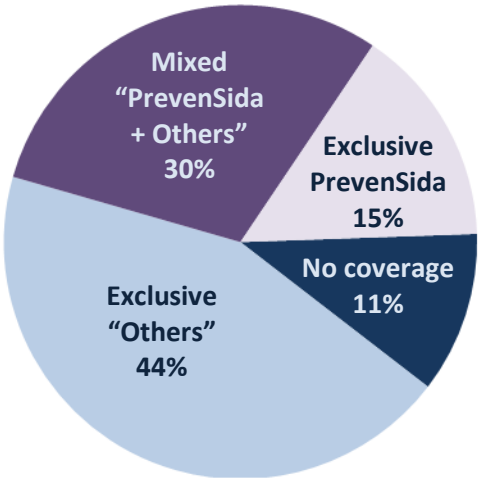



In terms of global coverage, 11% of the interviewed MARPs did not receive any of the four activities. The highest rate of uncovered MARPs was in the South Pacific region (14%) and the lowest in Managua (7%); 21% have received one activity, 28% have received two, 24% have received three activities, and 16% have received all four activities.

In terms of PrevenSida network coverage, 55% of the interviewed MARPs have not received any of the four activities provided by the PrevenSida network, 45% have received one or more activities from the PrevenSida network, broken down as follows: 21% have received one activity, 14% have received two activities, 8% have received three activities, and 2% have received the four activities from PrevenSida.

If the global coverage (one or more of the four activities mentioned) of the interviewed MARPs is 89% and the coverage of PrevenSida is 45%,

**Graph 17**
**Preventive Activity Coverage by *service provider***




**Graph 18**
**Preventive Activity Coverage by *type of MARP and service provider***


it could be inferred that coverage by "other" providers (NGOs, MOH, private organizations) is 44%, but such statement would not be very accurate considering that all preventive service providers deal with the same MARP universe in their day-to-day activities of searching, detecting, contacting, convening and implementing events or group sessions, which are usually accessible in limited living spaces.

In this scenario, delimiting the contribution made by each organization or program to global coverage is a complex proposition, even more so where different programs subsidize the same organization. In the search for greater accuracy, a process was undertaken to differentiate MARPs that had been exposed exclusively to the PrevenSida network from those exclusively exposed to "other providers", in order to also differentiate those MARPs that had received activities from different sources. The coverage was classified into four groups:

1. MARPs with none of the 4 activities. No coverage, 11%.
2. MARPs served exclusively by "Other providers," 44%.
3. MARPs receiving combined care (PrevenSida and others), 30%.
4. MARPs served exclusively by the PrevenSida network, 15%.

We can therefore say that the actual coverage of "other providers" is 74% because this is the share of MARPs that have received one or more activities from this source, whereas the actual coverage of the PrevenSida network is 45% of the total MARPs interviewed. Clearly, there is a coverage overlapping of the two global preventive service agencies analyzed. In effect, 30% of the MARP segment is shared (mixed coverage) as it has received activities from both sources. Thus, the PrevenSida coverage analysis, which is the main purpose of this study, would have to provide evidence of the characteristics and conditioning factors of the coverage of this segment that has global access to PrevenSida (45%), as well as the coverage of the segment that has exclusive access to PrevenSida (15%).

In fact, the distribution of the four coverage groups is very heterogeneous within each MARP group, standing out the majority coverage of "other providers" among SWs, as well as the scope of the mixed coverage among TRANS.

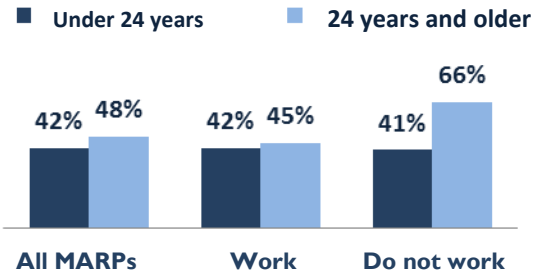
### 3.3 PrevenSida Global Coverage

This analysis deals with the MARP segment exposed to one or more activities provided by the PrevenSida network, and therefore includes both mixed and exclusive coverage.

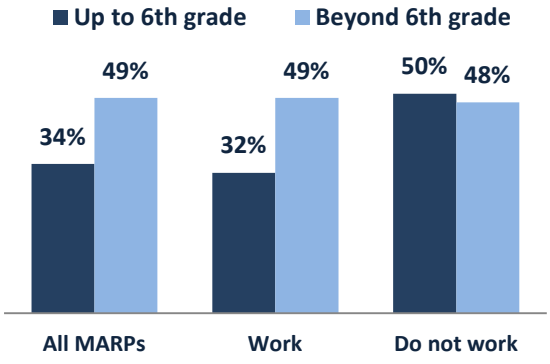
The highest global coverage rate of the PrevenSida network is reported in the Caribbean (61%) and the lowest in the Central region

**Graph 19**
**MARPs with some preventive activity.**
***Global and PrevenSida coverage by region***


**Graph 20**
**Global PrevenSida Coverage *by age and employment status***




**Graph 21**
**PrevenSida Global Coverage**
***By schooling and employment status***

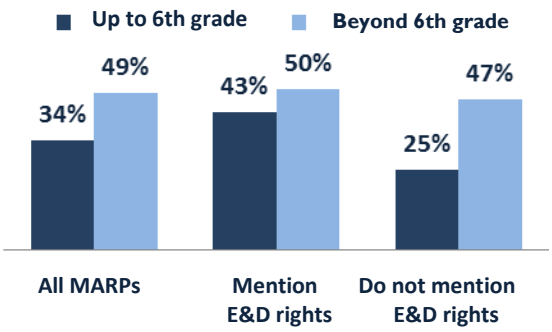



(28%). The three remaining regions maintain an average level (Managua, 49%, West region, 48%, and South Pacific region,43%). The highest PrevenSida coverage is found in the TRANS population (60%) and the lowest in SWs (34%), whereas coverage in MSMs is 47%. The most relevant factors influencing this coverage are:

- PrevenSida global coverage is higher in MARPs older than 24 years than in younger working MARPs *(48% versus 42%, $X^2$ 5.1)*, which means that older MARPs have a 28% higher probability of access *(OR 1.3, CI 95% 1.0-1.6)*. This association is stronger when:
  - ❖ MARPs are unemployed. The PrevenSida coverage rate is 66% among MARPs more than 24 years old, and remains at 41% among younger people. So the probability of having access to PrevenSida is almost triple in older MARPs, compared to younger MARPs *(OR 2.8, CI 95% 1.7-4.6, $X^2$ 19.5)*. A significant contrast *($X^{2het}$ 11.8, p=0.0006)* is that there is no difference in probabilities of accessing PrevenSida amongst employed MARPs *(42% versus 45%, $X^2$ 0.7)*.
  - ❖ This effect is even higher when MARPs are studying, but unemployed. In this segment, coverage reaches 70% among older MARPs and remains at 40% in younger MARPs, which means older MARPs have 3.5 times more probability of accessing PrevenSida than younger unemployed MARPs that study *(OR 3.5, CI 95% 1.5-7.6,$X^2$ 10.2)*.

- At 34%, PrevenSida global coverage is lower in MARPs that have not completed primary school, as compared to 49% in MARPs that have completed 6th grade and beyond. Consequently, MARPs with less schooling have half the probability of accessing PrevenSida, as compared to those that have a higher schooling level *(OR 0.55, CI 95% 0.4-0.7,$X^2$ 21.3)*.The ratio between PrevenSida coverage and schooling is modified when:
  - ❖ MARPs with primary school education are employed, since their PrevenSida coverage is further reduced (32%), whereas those that are working and have a schooling level beyond 6th grade remain at 49%. This widens the probability gap in accessing PrevenSida coverage to slightly less than half to the detriment of MARPs with less schooling *(OR 0.49, CI95% 0.4-0.7,$X^2$ 24.1)*.In a significant contrast *($X^{2het}$ 5.1, p=0.02)*, schooling does not make any difference in the probabilities of unemployed MARPSs accessing PrevenSida *(50% versus 48%, $X^2$0.06)*.
  - ❖ The above condition is only found among people employed in low-risk occupations, while MARPs with some primary schooling have a 27% coverage and those completing 6th grade and beyond

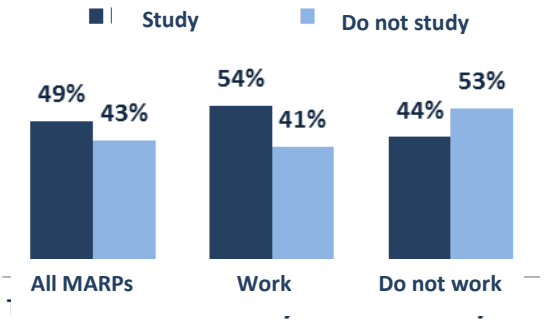
**Graph 22**
**PrevenSida Global Coverage**
***By schooling and unrealized E&D-related rights***




have a 46% coverage *(OR 0.44, CI 95% 0.3-0.7,$X^2$ 16.4)*. On the other hand *($X^{2het}$ 3.6, p=0.05)*, no significant difference was found in PrevenSida coverage between schooling levels within the high-risk occupation MARP stratum *(45% versus 50%, $X^2$ 0.9)*.

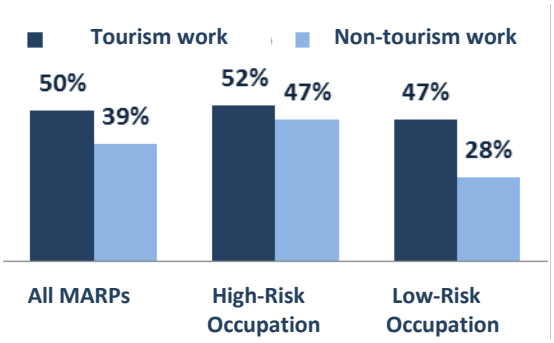
- ❖ MARPs are not aware of unrealized E&D-related rights, which reinforces the restrictive effect of low schooling on PrevenSida coverage, accounting for just 25%, whereas those with higher schooling remain at 47% *(OR 0.38, CI 95% 0.2-0.6, $X^2$ 24.2)*. A significantly different situation *($X^{2het}$ 7.0, p=0.008)* was found in MARPs aware of unrealized E&D-related rights because the difference in PrevenSida coverage between both schooling levels is not significant *(43% versus 50%, $X^2$ 2.6)*.

**Graph 23**
**PrevenSida Global Coverage**
***By study and employment status***



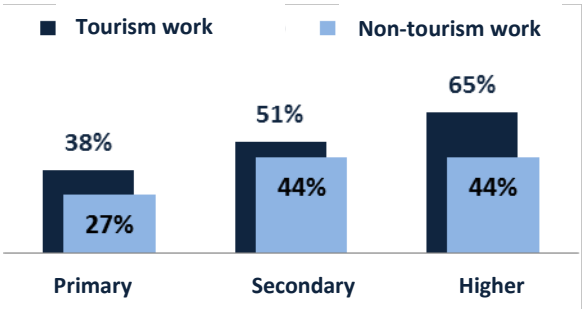

- <u>MARPs that study</u> have a higher PrevenSida coverage that non-students (49% versus 43%), which translates into a 30% higher probability of accessing PrevenSida services *(OR 1.3,CI 95% 1.0-1.6, $X^2$ 4.9)*. This ratio is modified by various factors, the most important including:
  - ❖ Employment status because the PrevenSida coverage gap between students (54%) and non-students (41%) is widened, as well as the probability of accessing PrevenSida services, which becomes 72% higher among employed students versus employed non-students *(OR 1.7,CI 95% 1.3-2.3, $X^2$ 12.8)*. In a significant contrast *($X^{2het}$ 12.7, p=0.0004)*, unemployed student MARPs do not make any significant difference in the likelihood of accessing PrevenSida coverage *(44% versus 53%, $X^2$ 3.0)*.
  - ❖ In MARPs that have recently been victims of abuse or violence, the coverage of those that study increases to 58%, whereas the coverage of non-students remains at 42% *(OR 1.9, CI 95% 1.2-2.9, $X^2$ 8.4)*.In a significantly different situation *($X^{2het}$ 4.0, p=0.04)*, studying does not make any difference in PrevenSida coverage for MARPs that have not recently been victims of violence *(46% versus 44%, $X^2$ 0.7)*.
  - ❖ In MARPs unaware of unrealized E&D rights, PrevenSida coverage is 50% for students and 38% for non-students *(OR 1.66, CI 95%1.2-2.4, $X^2$ 8.1)*. On the other hand *($X^{2het}$4.1, p=0.04)*, PrevenSida coverage between students and non-students is not significantly different *(49% versus 48%, $X^2$ 2.6)* in MARPs aware of unrealized E&D rights.

**Graph 24**
**PrevenSida Global Coverage**
***By tourism-related work and occupational risk***

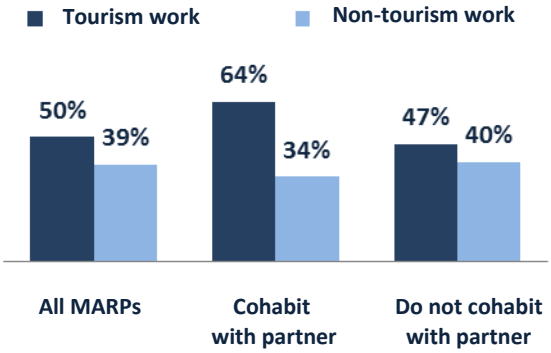



- <u>MARPs with tourism-related jobs</u> have higher PrevenSida coverage (50%) than MARPs whose work is not related to tourism (39%), creating a 54% probability gap of accessing PrevenSida services in MARPs linked to tourism, as compared to those whose work is not

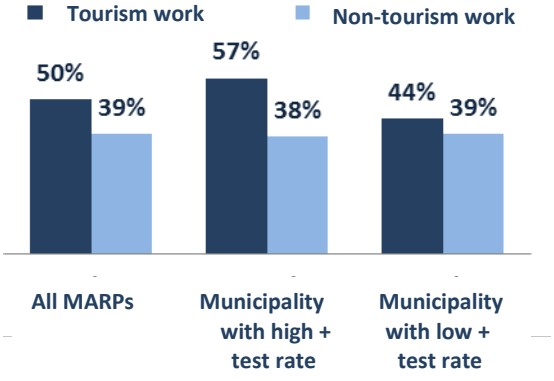
**Graph 25**
**PrevenSida Global Coverage**
***By tourism-related employment and schooling***




**Graph 26**
**PrevenSida Global Coverage**
***By tourism-related job and cohabitation with partner***




**Graph 27**
**PrevenSida Global Coverage**
***By tourism-related employment and municipal HIV test positivity rate***

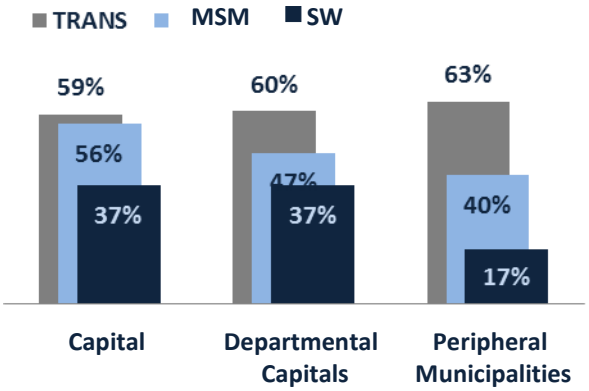



related to tourism *(OR 1.5, CI 95%1.2-2.0, $X^2$ 10.8)*. This basic ratio is contingent on different situations, including:

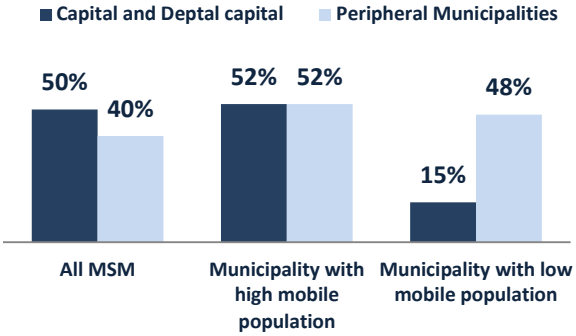
- ❖ When MARPs work in higher risk occupations, their linkage to tourism does not make a significant difference in terms of PrevenSida coverage *(52% versus 47%, $X^2$ 1.3)*. In a different situation*($X^{2het}$ 5.1, p=0.02)*, we found that MARPs in lower risk occupations have a reduced coverage, and the gap increases between MARPs with tourism-related jobs (47%) and those with non-tourism-related jobs (28%). This entails more than two times the probability of coverage for MARPs with tourism-related jobs than those without that linkage *(OR 2.3, CI 95% 1.5-3.4, $X^2$ 16.4)*.
- ❖ When MARPs are employed in tourism-related jobs, schooling level has a noticeable impact on PrevenSida coverage. Coverage 38% for MARPs with a primary school level, 51% for those at a high school level, and 65% for technical or higher education level *($X^2$ 11.7, 2 GI)*.
- ❖ Coverage is markedly increased in MARPs living with a stable partner when they have tourism-related jobs (64%) and it is reduced when their job is unrelated to tourism (34%). This significantly widens (from 3.4 to 1) the gap between both segments in terms of the likelihood of accessing PrevenSida services *(OR 3.4, CI 95% 1.7-6.9, $X^2$ 11.5)*. In a significant heterogeneity condition *($X^{2het}$ 5.6, p=0.01)*, the coverage gap resulting from tourism-related jobs and the probabilities of accessing PrevenSida services by MARPs not living with their partner is smaller *(47% versus 40%, OR 1.4, CI 95% 1.0-1.8, $X^2$ 4.7)*.
- ❖ As expected, MARPs working in tourism-related jobs in municipalities ranked as highly influenced by tourism have a much higher PrevenSida coverage (57%) than MARPs not related to the sector (38%), which means that MARPs working in tourism-related jobs have twice the probability of accessing PrevenSida services *(OR 2.1, CI 95% 1.4-3.2, $X^2$ 13.4)*. In a significantly heterogeneous situation *($X^{2het}$ 4.1, p=0.04)*, tourism-related jobs in municipalities with low or no tourism incidence make no difference in PrevenSida coverage *(44% versus 39%, $X^2$ 1.2)*.

- <u>PrevenSida coverage changes according to municipality size and political-administrative location</u>. Coverage is 49%in the capital, 46% in departmental capitals, and 40% in peripheral municipalities*($X^2$ 7.0, p=0.008, 2 GI)*.The main difference is found in MARPs living in smaller municipalities, which have a 26% lower probability of accessing PrevenSida services, as compared to those living in departmental capitals or in the capital city *(40% versus 47%, OR 0.74, CI 95% 0.6-0.9,*

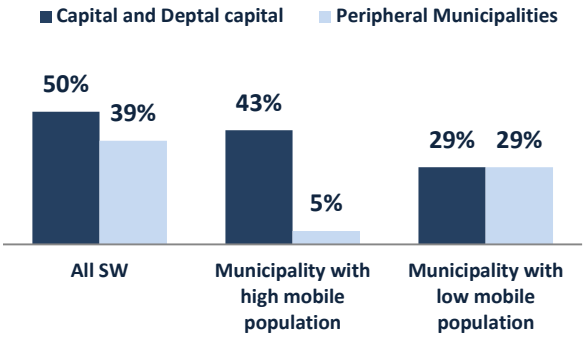
**Graph 28**
**PrevenSida Global Coverage**
***By MARP group and type of location***




**Graph 29**
**MSM with PrevenSida Global Coverage**
***By type of municipality and mobile population influence on municipality***




**Graph 30**
**SW with PrevenSida Global Coverage**
***By type of municipality and mobile population influence on municipality***



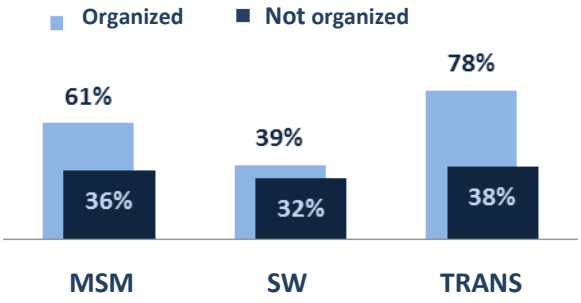

*$X^2$6.4)*. This association is clearly evident in SW and MSM, but there is no difference for TRANS at the three municipal levels.

The strongest trend is found in SW, which in addition to starting with the lowest overall coverage (34%) declines from 37% in the capital city and departmental capitals to 17% in peripheral municipalities *($X^2$ 6.2, p=0.02, 2GI)*. This situation is similar for MSM, although they start with a better overall coverage (46%), but their PrevenSida coverage is 56% in the capital, 47% in departmental capitals, and 40% in peripheral municipalities *($X^2$ 9.4, P=0.002, 2GI)*.

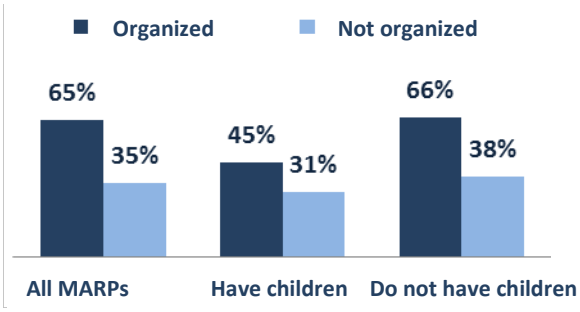
- ❖ MSM in peripheral municipalities have a 34% probability of accessing PrevenSida services as compared to MSM living in the capital and departmental capitals *(40% versus 50%, OR 0.66, CI 95% 0.5-0.9, $X^2$ 6.5)*. Unlike SW in municipalities with a high incidence of mobile population, there is no difference in PrevenSida coverage between peripheral and other municipalities *(52% versus 52%, $X^2$ 0.1.)*. In a significant contrast *($X^{2het}$ 18.1, p=0.000)*, PrevenSida coverage for MSM living in peripheral municipalities with low mobile population incidence drops to 15%, whereas MSM living in departmental capitals or capital city areas without mobile population incidence have a 48% PrevenSida coverage *(OR 0.19, CI 95% 0.1-0.4, $X^2$6.7)*. As a result, MSM in peripheral municipalities with low mobile population incidence have 5 times less probability of accessing PrevenSida services than MSM living in the capital or departmental capitals.
- ❖ Coverage differences in SW living in municipalities have one third (1 out of 3 times) probability of accessing PrevenSida services, as compared to SW living in the capital and departmental capitals *(17% versus 37%, OR 0.34, CI 95% 0.1-0.6, $X^2$ 11.7)*. This association is stronger in municipalities with a higher mobile population incidence since SW living in peripheral municipalities reduce their PrevenSida coverage down to 5%, whereas they have a PrevenSida coverage of 43% in departmental capitals and capital city areas with mobile population incidence *(OR 0.1, CI 95% 0.02-0.2, $X^2$ 19.9)*. In a significant contrast *($X^{2het}$ 10.6, p=0.001)*, there are no coverage differences for SW in municipalities with low mobile population incidence between peripheral municipalities and other municipalities *(29% versus 29%, $X^2$ 1.0)*.

- PrevenSida coverage is 65% for MARPs participating in some organization and 35% for those that do not participate in any organization. Therefore, participating MARPs have almost three times as much probability of accessing PrevenSida services, as opposed to those not participating in any organization *(OR 2.9, CI*

**Graph 31**
**PrevenSida Global Coverage**
***By MARP group and participation in organizations***




**Graph 32**
**PrevenSida Global Coverage**
***By participation in organizations and parenting status***



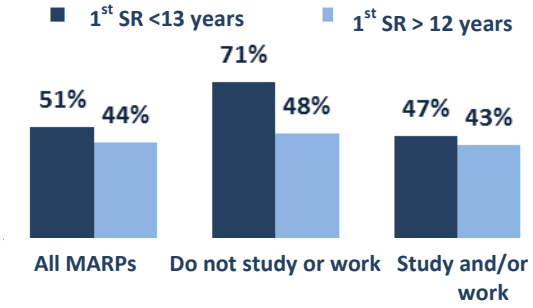

**Graph 33**
**PrevenSida Global Coverage**
***By participation in organizations and occupational risk level***


*95% 2.3-3.7, $X^2$ 92.3).* PrevenSida coverage for MSM with a 45% organization rate is similar to the overall rate *(61% versus 36%, OR 2.8, CI 95% 2.0-3.9, $X^2$ 39.8)*. This association is even more marked in TRANS, which have a 78% PrevenSida coverage if they participate in organizations, as compared to 38% for those that do not participate in any organization. Hence, organized TRANS have six times more probability of accessing PrevenSida services than unorganized TRANS *(OR 5.9, CI 95% 3.6-9.9, $X^2$ 47.6)*. No significant difference was found in PrevenSida coverage for SW with a 28% participation rate in some organization *(39% versus 32%, $X^2$ 2.2)*. The effect of organizational participation on PrevenSida coverage is modified when:

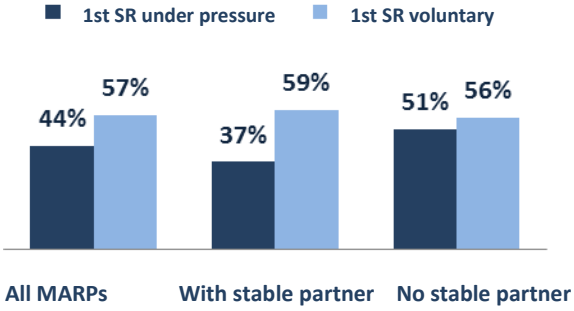
- ❖ MARPs have children, in which case PrevenSida coverage is reduced. Organized MARPs have a coverage of 45%, and unorganized MARPs have a coverage of 31%. The gap between organized MARPs with children and unorganized MARPs with children in terms of probabilities of accessing PrevenSida services is reduced *(OR 1.8, CI 95% 1.2-2.8, $X^2$ 8.9)*. In a significant contrast *($X^{2het}$ 5.3, p=0.02)*, the same effect described for MARPs in general is maintained for MARPs with no children *(66% versus 38%, OR 3.2, CI 95% 2.4-4.3, $X^2$ 69.6)*.
- ❖ PrevenSida coverage increases markedly in MARPs working in higher risk occupations and participating in organizations (71%) and remains the same (34%) in unorganized MARPs. Consequently, the probability gap of accessing PrevenSida services increases significantly to a ratio of almost 5 to 1 in favor of organized MARPs *(OR 4.7, CI 95% 3.3-7.0, $X^2$ 74.2)*. In a significantly heterogeneous condition *($X^{2het}$ 14.4, p=0.0002)*, in MARPs working in lower risk occupations, the probability gap of PrevenSida coverage and care is reduced between organized and unorganized MARPs *(45% versus 33%, OR 1.7, CI 95% 1.1-2.6, $X^2$ 6.1)*.

- MARPs that have had their first sexual relation before 13 years of age have a PrevenSida coverage of 51%, and those that had their first sexual relation at 13 years or older have a PrevenSida coverage of 44%. MARPs that had an earlier sexual initiation have a 30% higher probability of accessing PrevenSida services in comparison with those that had it after 12 years of age *(OR 1.3, CI 95% 1.0-1.7, $X^2$ 4.0)*. This association is modified when:
  - ❖ MARPs do not study or work. In this case, coverage for those who had an early sexual life initiation increases noticeably (71%), and coverage for those who had it after 12 years of age remains the same (48%). The probability gap of accessing PrevenSida services is 2.6 times larger for MARPs that had an earlier sexual

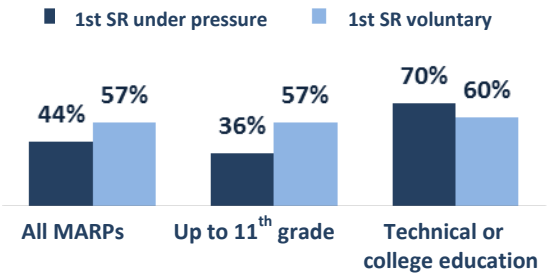
**Graph 34**
**PrevenSida Global Coverage**
***By age of 1st sexual relation and employment/study status***




**Graph 35**
**PrevenSida Global Coverage**
***By assertiveness in 1st sexual relation and stable partner status***




**Graph 36**
**PrevenSida Global Coverage**
***By assertiveness in 1st sexual relation and schooling level***



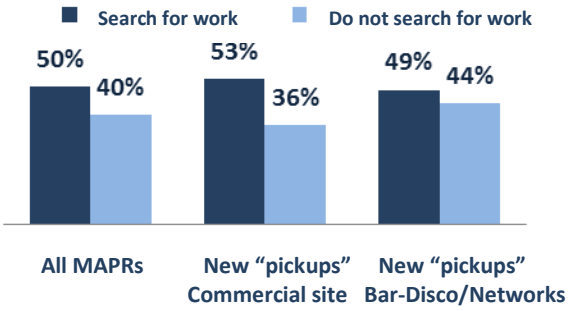

initiation than for those who had it after 12 years of age *(OR 2.6, CI 95% 1.2-5.7, X2 6.2)*. In a significantly different situation *($X^{2het}$ 3.8, p=0.05)*, sexual initiation age does not make a difference in PrevenSida coverage for MARPs that study and/or work *(47% versus 43%, $X^2$ 1.3)*.

- ❖ Where MARPs are not aware of unrealized E&D-related rights, PrevenSida coverage increases for those initiating sexual life before 13 years of age (55%) and is reduced for those that initiated it at 13 years of age or older (38%), thus doubling their probability of accessing PrevenSida services *(OR 2.0, CI 95% 1.3-3.1, $X^2$ 10.8)*. In a significantly heterogeneous condition *($X^{2het}$ 7.7, p=0.005)*, sexual initiation age does not make any significant difference in PrevenSida coverage for MARPs that are aware of E&D-related rights *(48% versus 49%, $X^2$ 0.1)*.

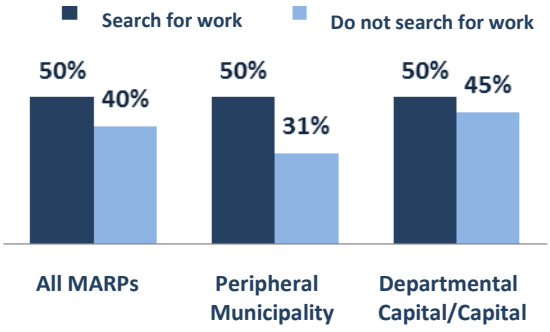
- MARPs that had their first sexual relation under pressure (did not want to) have a lower PrevenSida coverage (44%) than MARPs whose first sexual relation was voluntary (57%). The probability of accessing PrevenSida is reduced to half for MARPs that had a sexual initiation under pressure, as compared to those who had it of their own free will *(OR 0.57, CI 95% 0.4-0.8, $X^2$ 10.1)*. This association is modified under some conditions:
  - ❖ MARPs without a stable partner who experienced their first sexual relation under pressure have an even lower coverage (37%), while those who had a voluntary sexual initiation increase their PrevenSida coverage (59%). As a result, the gap in the probability of accessing PrevenSida services between both segments is increased from 1 to 2.5 times *(OR 0.4, CI 95% 0.2-0.7, $X^2$ 13.5)*. In a significantly different situation *($X^{2het}$ 4.1, p=0.04)*, voluntary sexual initiation in MARPs with a stable partner does not make a significant difference in PrevenSida coverage *(51% versus 56%, $X^2$ 0.5)*.
  - ❖ MARPs with secondary education or less (11th grade or less) have a 36% PrevenSida coverage if they had their first sexual relation under pressure, whereas coverage increases to 57% for those who had their first sexual relation voluntarily, so the gap in the odds of accessing PrevenSida services increases to a ratio of 1 to 2.3 times *(OR 0.43, CI 95% 0.3-0.6, $X^2$ 17.5)*. In contrast *($X^{2het}$9.1, p=0.002)*, MARPs with technical or college education have an increased coverage, although voluntary sexual initiation does not make a significant difference in the odds of accessing PrevenSida *(70% versus 60%, $X^2$ 1.3)*.

- MARPs looking for a job (60% are employed, 40% are not) have a higher PrevenSida coverage (50%) than those not looking for a job

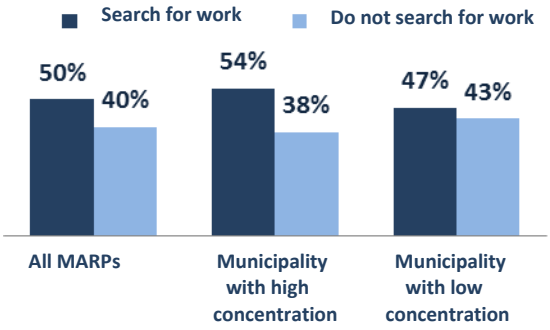
**Graph 37**
**PrevenSida Global Coverage**
***By job search and types of venue for new "pickups"***




**Graph 38**
**PrevenSida Global Coverage**
***By job search and type of municipality***




**Graph 39**
**PrevenSida Global Coverage**
***By job search and level of concentration of workers in the municipality***




(41%). Hence, MARPs that want to change jobs or look for a job have a 40% higher probability of accessing PrevenSida services than those not looking for a job (*OR 1.4, CI 95% 1.1-1.7, $X^2$ 9.9).*This association is modified by various influencing factors, such as:

- In MARPs looking for new sexual partners in commercial venues (shopping centers, streets, markets), PrevenSida coverage increases to 53% in MARPs looking for a job, whereas PrevenSida coverage is reduced to 36% in MARPs not looking for a job, increasing two times the probability of accessing PrevenSida services (*OR 2.0, CI 95% 1.4-3.0, $X^2$ 14.5).* In contrast *($X^{2het}$ 4.6, p=0.03)*, looking for a job does not make any difference in PrevenSida coverage for MARPs seeking new partners in other venues *(49% versus 44%, $X^2$ 2.2).*
- In peripheral municipalities, MARPs looking for a job maintain a 50% PrevenSida coverage, but those not looking for a job noticeably reduce their coverage to 31%. Hence, the probability of accessing PrevenSida is two times greater for MARPs that want to change jobs or look for a job, as compared to those not looking for work *(OR 2.1, CI 95% 1.4-3.3, $X^2$ 13.1).* In contrast *($X^{2het}$ 5.2, p=0.02)*, looking for work in departmental capitals or in the capital city does not make any difference in PrevenSida coverage *(50% versus 45%, X2 2.3).*
- In municipalities with a high concentration of workers (off-shore assembly factories, large work centers, ports, mines), MARPs looking for work have a 54% coverage, and those not looking for work have a 38% coverage. Hence, MARPs that want to change jobs or look for work have a 90% higher probability of accessing PrevenSida services than MARPs remaining in the same job (*OR 1.9, CI 95% 1.3-2.8, $X^2$ 12.9).* In contrast *($X^{2het}$ 4.5, p=0.03)*, looking for work in municipalities with a low presence of workers does not make a significant difference in PrevenSida coverage *(47% versus 43%, $X^2$ 1.4).*
- In municipalities with a high influence of cargo transport (ports, rest and food areas, borders), MARPs looking for a job have a 55% coverage, while those not looking for a job have a 37% coverage. Hence, MARPs looking for a job have twice as much probability of accessing PrevenSida services than MARPs that remain in the same job(*OR 2.1, CI 95% 1.4-3.2, $X^2$ 12.8).*In contrast *($X^{2het}$ 5.1, p=0.02)*, looking for a job in municipalities without any cargo transport incidence does not make a significant difference in PrevenSida coverage *(48% versus 43%, $X^2$2.1).*

It should be noted that PrevenSida global coverage was not directly associated with municipal risk levels linked to HIV positivity tests carried out by the PrevenSida network *(45% versus 46%, $X^2$ 0.24)*, and no

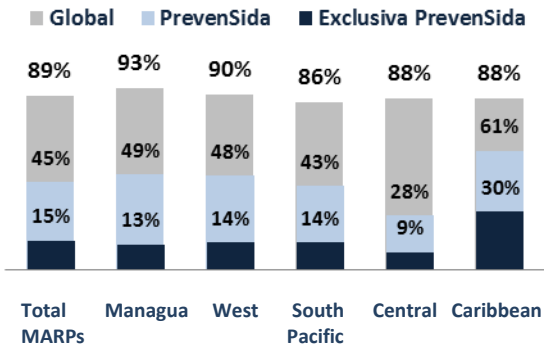
significant differences were found in coverage on account of pickup venues preferred by MARPs (bars/discotheques/motels account for 47%, shopping centers/streets account for 44%, and social networks account for 43%) *($X^2$ 1.4, 2 GI)*.

### 3.4 PrevenSida Exclusive Coverage

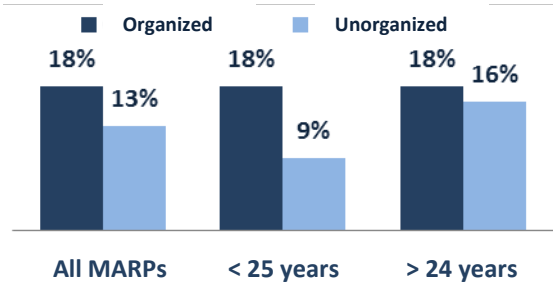
Exposure to PrevenSida actions without receiving any actions from other HIV preventive service providers in a multi-presence and sometimes competitive scenario of confluence, is in itself a unique differentiating condition of the coverage offered by the PrevenSida network. Since the main objective of this study is to assess PrevenSida coverage, different situations that might characterize it have been explored to contribute evidence that can be used in analysis and management decisions.

Clearly, exclusivity does not stem from an intentional action to establish follow-up standards for PrevenSida network field teams, or from commitments with associations and NGOs to guide their affiliates or usersto "loyalty" to PrevenSida network services or any specific organization providing such services. Although PrevenSida´s overall planning is based on agreements reached with national response authorities to provide coverage to 15% of MARPs, this is just an indicative goal to establish and agree on PrevenSida subsidy goals. Nevertheless, exclusivity is not a guiding criterion in the implementation of preventive actions, i.e., seeking, contacting, convening and holding sessions or events with MARPs.

**Graph 40**
**PrevenSida Exclusive Coverage**
**Global and PrevenSida Coverage by Region**



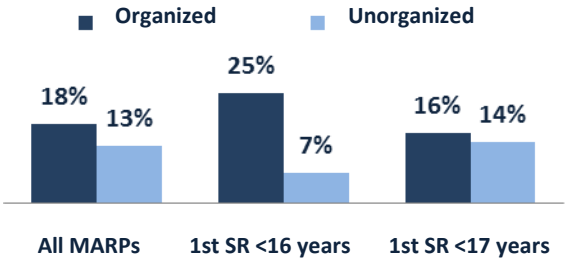

**Graph 41**
**PrevenSida Exclusive Coverage**
***By participation in organizations and age***



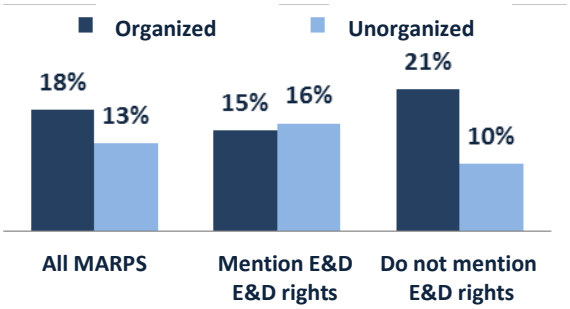

As already mentioned, PrevenSida exclusive coverage is 15% of all interviewed MARPs. The highest rate (30%) is found in the Caribbean and the lowest rate (9%) is reported in the Central region. The coverage in the other three regions remains at an average level (Managua 13%, West region 14%, South Pacific region 14%). In the three MARP groups, the lowest rate is 12%in SWs, whereas exclusive coverage is 16% in TRANS and 17% in MSM. Various factors are related to PrevenSida exclusive coverage variations, including, among others:

- MARPs that participate in some organization have 18% PrevenSida exclusive coverage, while those not participating in any organization have 13% exclusive coverage. Therefore, organized MARPs have a 45% higher probability of getting exclusive care from PrevenSida, in comparison with unorganized MARPs *(OR 1.45, CI 95% 1.1-2.0, $X^2$ 6.1)*. This association is greater when:
  - ❖ MARPs are less than 25 years old. If they are not organized, their exclusive coverage is reduced to 9%, while organized MARPs maintain an 18% exclusive coverage. So the gap in probabilities of receiving exclusive care from PrevenSida 2.2 times greater for organized MARPs *(OR 2.2, CI 95% 1.3-3.8, $X^2$ 10.4)*. In contrast *($X^{2het}$ 4.2, p=0.04)*, participation in organizations does not make any significant difference in PrevenSida exclusive

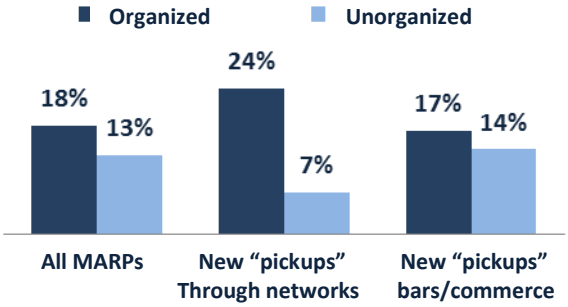
**Graph 42**
**PrevenSida Exclusive Coverage**
***By participation in organizations and age at first sexual relation***




**Graph 43**
**PrevenSida Exclusive Coverage**
***By participation in organizations and unrealized E&D rights***



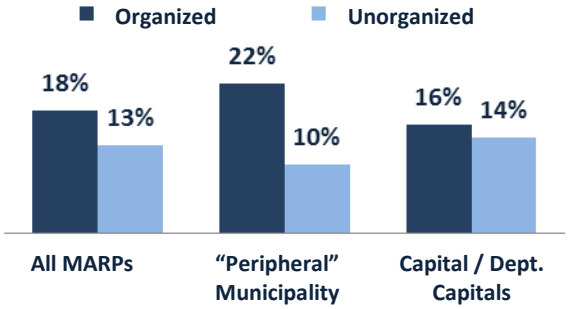

**Graph 44**
**PrevenSida Exclusive Coverage**
***By participation in organizations and usual places for new "pickups"***



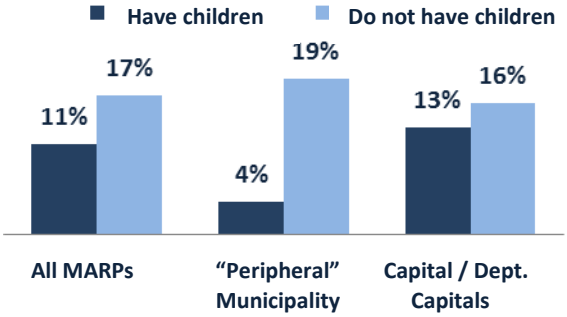

coverage for MARPs more than 24 years old *(18% versus 16%, $X^2$ 1.2)*.

- MARPs that had their first sexual relation after 16 years of age and are organized increase their PrevenSida exclusive coverage to 25%, while exclusive coverage in unorganized MARPs is only 7%. Hence, organized MARPs have four times more probability of receiving exclusive care from PrevenSida *(OR 4.1, CI 95%2.0-8.2, $X^2$ 15.8)*.In a significantly different situation *($X^{2het}$ 10.5, p=0.001)*, participating in an organization does not make any significant difference in PrevenSida exclusive coverage in MARPs that had their first sexual relation before 17 years of age *(16% versus 14%, $X^2$ 1.2)*.
- MARPs that are NOT aware of unrealized E&D rights and are organized have a 21% PrevenSida exclusive coverage, while unorganized MARPs have a mere 10% coverage, which means that not being aware of E&D rights and being organized increases by 2.4 times the probability of receiving exclusive care from PrevenSida, as compared to unorganized MARPs *(OR 2.4, CI 95% 1.6-3.8, $X^2$ 15.6)*. In contrast *($X^{2het}$ 9.6, p=0.001)*, being organized does not make any difference in the probabilities of receiving exclusive care from PrevenSida in MARPs that are aware of unrealized E&D rights *(15% versus 16%, $X^2$ 0.04)*.
- In MARPs looking for new sexual partners through communication networks (telephones/Internet), being organized accounts for a noticeable increase in PrevenSida exclusive coverage (24%), while PrevenSida exclusive coverage is significantly reduced (7%) in MARPs using networks to find new "pickups", but not participating in any organization. Hence, MARPs looking for "pickups" in networks have four times more probability of receiving exclusive care from PrevenSida, as opposed to unorganized MARPs *(OR 4.0, CI 95% 1.7-9.6, $X^2$ 9.6)*. In a significantly heterogeneous situation *($X^{2het}$ 5.7, p=0.01)*, participating in any organization does not make any difference in the probabilities of receiving PrevenSida exclusive care for MARPs looking for new "pickups" through other means *(17% versus 14%, $X^2$ 2.0)*.
- In peripheral municipalities, MARPs participating in organizations have 22% PrevenSida exclusive coverage, whereas those not participating in any organization reduce their coverage to 10%, which means that organized MARPs have 2.5 times more probability of receiving PrevenSida exclusive care, as opposed to unorganized MARPs *(OR 2.5, CI 95% 1.4-4.9, $X^2$ 10.8)*. In contrast *($X^{2het}$ 5.5, p=0.02)*, participating in any organization in the departmental capitals and capital city does not make any

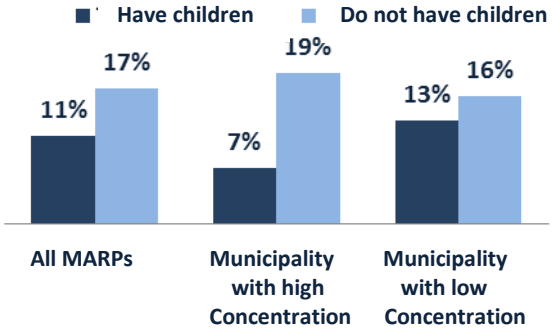
**Graph 45**
**PrevenSida Exclusive Coverage**
***By participation in organizations and type of municipality***




**Graph 46**
**PrevenSida Exclusive Coverage**
***By MARPs with children and type of municipality***




**Graph 47**
**PrevenSida Exclusive Coverage**
***By custody of children and level of labor concentration in the municipality***



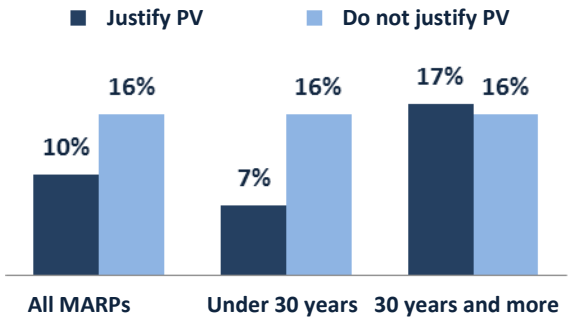

difference in the probabilities of receiving exclusive care from PrevenSida *(16% versus 14%, $X^2$ 0.7)*.

- ❖ In municipalities with a high influence of cargo transport, MARPs participating in organizations have a 23% PrevenSida exclusive coverage, whereas those not participating in any organization reduce their coverage to 8%, which means that organized MARPs have 3.3 times more probability of receiving exclusive care from PrevenSida than unorganized MARPs *(OR 3.2, CI 95% 1.8-6.5, $X^2$ 16.0)*.In a significant contrast*($X^{2het}$ 10.4, p=0.001)*, participation in any organization does not make any difference in probabilities of receiving exclusive care from PrevenSida in municipalities with a low cargo transport incidence *(16% versus 15%, $X^2$ 0.14)*.

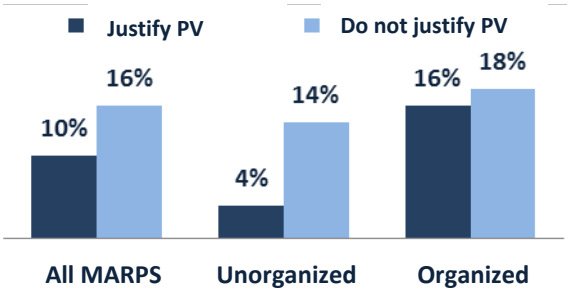
- <u>MARPs with children</u> have 11% PrevenSida exclusive coverage and those without children have 17%, which means that MARPs with children have 41% less probability of receiving exclusive care from PrevenSida than those without children *(OR 0.59, CI 95% 0.4-0.8, $X^2$ 9.7)*. Two conditions modify this association:
  - ❖ In peripheral municipalities, MARPs with children significantly reduce their exclusive coverage (4%), while those without children increase it (19%), in such a way the gap in the probability of receiving exclusive care increases in a 1 to 6.2 ratio *(OR 0.16, CI 95% 0.1-0.4, $X^2$ 14.7)*. In a significant contrast *($X^{2het}$ 7.7, p=0.005)*, the fact that MARPs have children does not make any difference in PrevenSida exclusive coverage *(13% versus 16%, $X^2$ 2.0)* in larger municipalities (departmental capitals and capital city).
  - ❖ In municipalities with a high concentration of workers due to enclave economies (off-shore assembly factories, mines, ports), PrevenSida exclusive coverage is reduced to 7% in MARPs with children and reaches 19% in MARPs without children. Hence, the probability of receiving exclusive care from PrevenSida is three times less for MARPs with children, as compared to MARPs without children*(OR 0.3, CI 95% 0.2-0.6, $X^2$ 14.6)*.In a significant contrast *($X^{2het}$ 6.8, p=0.009)*, in municipalities with low or no concentration of workers, the fact that MARPs have children does not make any difference in PrevenSida exclusive coverage *(13% versus 16%, $X^2$ 0.9)*.

- <u>In MARPs that think there could be situations where beating their partner is justified</u>, PrevenSida exclusive coverage is 10%, while it reaches 16% in those MARPs that think there is no situation that justifies beating their partner, which means 42% less probability of accessing PrevenSida exclusive care in MARPs that could justify

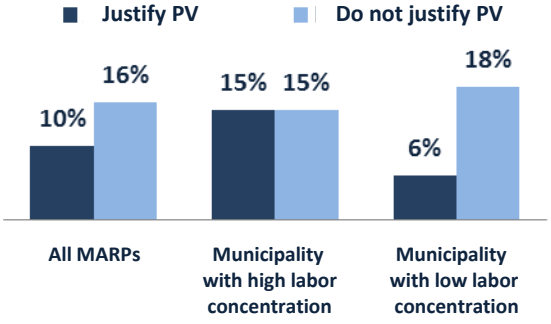
**Graph 48**
**PrevenSida Exclusive Coverage**
***by justification of partner violence and age of MARPs***




**Graph 49**
**PrevenSida Exclusive Coverage**
***Depending on whether or not MARPs justify partner violence and participate in any organization***




**Graph 50**
**PrevenSida Exclusive Coverage**
***by justification of partner violence and municipal labor concentration***

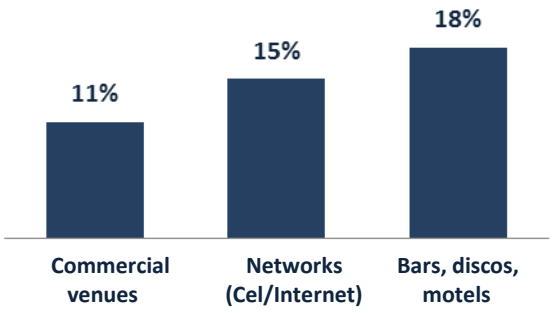



partner violence (PV), as compared to MARPs that do not accept any situation that justifies partner violence *(OR 0.58, CI 95% 0.3-0.9, $X^2$5.2)*. Three situations modify this association:

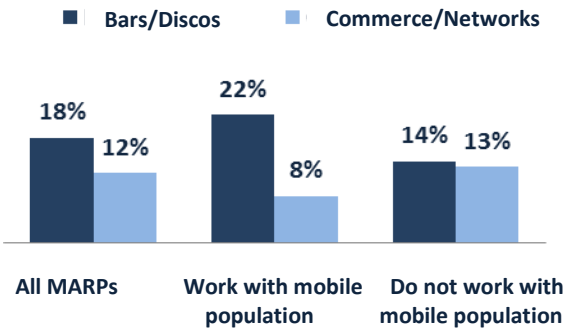
- ❖ PrevenSida exclusive coverage is 7% in MARPs under 30 years of age that think there could be situations that justify beating their partner, compared to 16% when they think the opposite. The gap between these two groups in the probabilities of accessing PrevenSida exclusive care is 1 to 2.5 times*(OR 0.4, CI 95% 0.1-0.7, $X^2$ 8.3)*. In contrast *($X^{2het}$ 4.5, p=0.03)*, MARPs over 30 years of age that justify partner violence does not make any difference in PrevenSida exclusive coverage *(17% versus 16%, $X^2$ 0.1)*.
- ❖ PrevenSida exclusive coverage is reduced to barely 4% in MARPs that do not participate in any organization and think there could be situations that justify beating their partner, whereas the coverage is reduced to 14% in those MARPS that think otherwise. Hence, the probabilities of having exclusive access to PrevenSida are almost four times less in MARPs that justify violence, as compared to those that do not justify it *(OR 0.28, CI 95% 0.1-0.6, $X^2$ 8.4)*. In contrast *($X^{2het}$ 4.1, p=0.04)*, justification of partner violence does not make any difference in PrevenSida exclusive coverage in MARPs participating in some organization *(16% versus 18%, $X^2$ 0.4)*.
- ❖ In municipalities with a high concentration of workers in factories (off-shore assembly), ports, or mines, there is no difference in PrevenSida exclusive coverage associated to the opinion regarding partner violence *(15% versus 15%, $X^2$ 0.0)*.In contrast *($X^{2het}$ 5.9, p=0.01)*, in municipalities with low labor concentration, MARPs that justify beating their partner significantly have their PrevenSida exclusive coverage reduced to just 6%, whereas it increases to 18% in those MARPs that think no situation justifies beating their partner. Therefore, the probabilities of having exclusive access to PrevenSida are three times less for MARPs that justify violence than for those that do not justify it *(OR 0.31, CI 95% 0.1-0.6, $X^2$9.5)*.

- The type of venues where MARPs more often seek new sexual partners makes a significant difference in PrevenSida exclusive coverage, which is 11% if they seek new sexual partners in commercial venues (shopping centers, streets),15% through networks, and 18% at bars/discotheques *($X^2$ 8.8, p=0.003, 2GL)*. Consequently, MARPs looking for new "pickups" in commercial venues have 36% less probability of receiving PrevenSida exclusive care, as compared to other MARPs *(11% versus 17%, OR 0.64, CI 95% 0.4-0.9, $X^2$ 7.1)*. On the other hand, MARPs meeting new "pickups" at bars and discotheques have a 57% higher probability of receiving PrevenSida exclusive care, as compared to other MARPs *(18% versus*

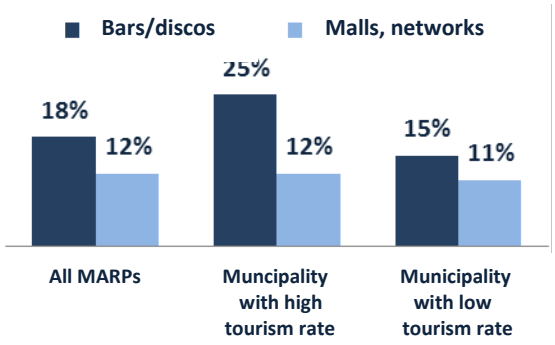
**Graph 51**
**PrevenSida Exclusive Coverage**
***by habitual venues in search of new sexual partners ("pickups")***




**Graph 52**
**PrevenSida Exclusive Coverage**
***By habitual venues for seeking new "pickups" and work with mobile population***




**Graph 53**
**PrevenSida Exclusive Coverage**
***by habitual venues in search of new "pickups" and municipal tourism rate***

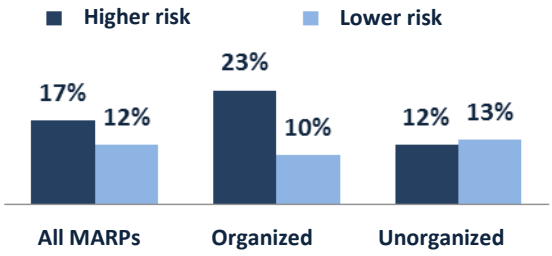



*12%, OR 1.57, CI 95% 1.2-2.2, $X^2$ 8.7).* This association is modified by two conditions:

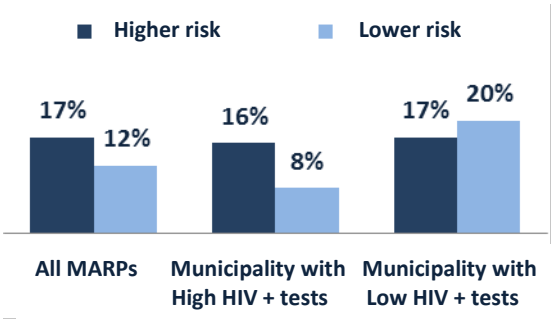
- ❖ When MARPs work in some activity related to mobile populations, PrevenSida exclusive coverage increases for those looking for new pickups at bars/discotheques, and decreases for MARPs seeking new pickups in commercial venues. For MARPs working in activities related to mobile populations, "picking up" new partners at bars/discotheques increases their PrevenSida exclusive coverage to 22%, whereas those looking for new "pickups" in commercial venues reduce it to 8%.This means that MARPs looking for pickups at bars/discotheques have 3.5 times more probability of accessing PrevenSida exclusive care than those looking for pickups in commercial venues *(OR 3.5, CI 95% 1.8-8.8, $X^2$ 14.5).*In a significantly different situation *($X^{2het}$ 7.0, p=0.008)*, a "new pickup" venue does not make any difference in PrevenSida exclusive coverage for MARPs working in activities unrelated to mobile populations *(14% versus 13%, $X^2$ 0.15)*.
- ❖ In municipalities with high tourism, MARPs looking for "pickups" at bars/discotheques increase their PrevenSida exclusive coverage to 25%, whereas those meeting them in commercial venues have a 12% coverage, which shows that MARPs picking up at bars/discotheques have a 2.6 higher probability of accessing PrevenSida exclusive care than those picking up at commercial venues (*OR 2.6, CI 95% 1.5-5.1, $X^2$ 9.5).*In a significantly different situation *(CI 90%, $X^{2het}$ 3.2, p=0.07),* a "new pickup" venue does not make any difference in PrevenSida exclusive coverage in municipalities with low tourism incidence *(15% versus 11%, $X^2$ 1.8)*.

- MARPs working in higher risk occupations (bars, discotheques, commercial sex) have a 43% higher probability of PrevenSida exclusive care than those in lower risk occupations *(17% versus 12%, OR1.43, CI 95% 1.1-2.0, $X^2$ 3.8).* This association is modified when:
  - ❖ MARPs participate in some organization, in which case the probabilities of receiving PrevenSida exclusive care are 2.8 times higher for MARPs with higher risk occupations *(23% versus 10%, OR 2.8, CI 95% 1.7-5.8, $X^2$ 10.6).* In contrast *($X^{2het}$ 9.4, P=0.002),* when they do not participate in any organization, occupational risk does not make any difference in the probabilities of receiving PrevenSida exclusive care *(12% versus 13%, $X^2$ 0.4)*.
  - ❖ MARPs in lower risk occupations that live in municipalities with a high incidence of PrevenSida HIV positive tests reduce their PrevenSida exclusive coverage by half, and those in higher risk occupations double their probabilities of receiving PrevenSida exclusive care as opposed to the other group*(16% versus 8%, OR 2.1, CI 95% 1.4-3.5, $X^2$ 8.6).*In a significantly different situation *($X^{2het}$*

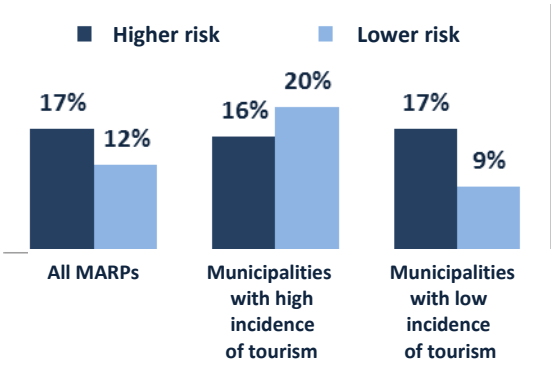
**Graph 54**
**PrevenSida Exclusive Coverage**
***By occupational risk level and participation in organizations***




**Graph 55**
**PrevenSida Exclusive Coverage**
***By level of occupational risk and municipal incidence of HIV positive tests***




**Graph 56**
**PrevenSida Exclusive Coverage**
***By level of occupational risk and municipal tourism incidence***

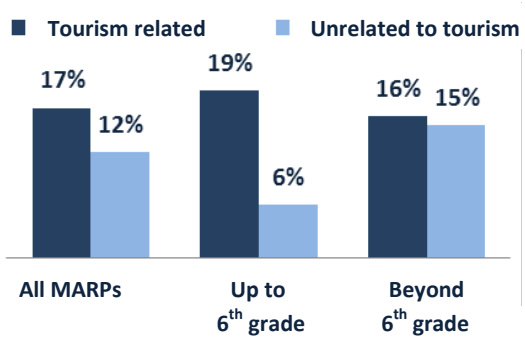



*6.5, p=0.01),*occupational risk in municipalities with a low incidence of PrevenSida HIV positive tests does not make any difference in PrevenSida exclusive coverage *(17% versus 20%, $X^2$ 0.5)*.

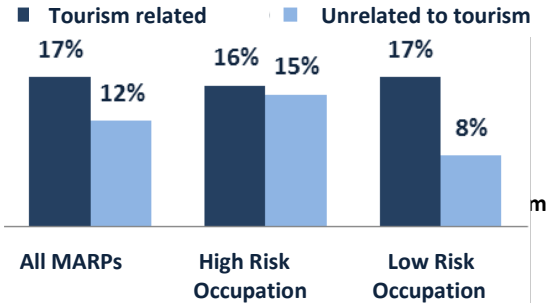
- ❖ In municipalities with high tourism incidence, occupational risk does not make any difference in PrevenSida exclusive coverage *(16% versus 20%, $X^2$ 0.8)*. In a significantly different situation*($X^{2het}$ 6.2, p=0.01),* MARPs in lower risk occupations in municipalities with low tourism incidence have reduced their PrevenSida exclusive coverage to 9%, while those in higher risk occupations have two times more probability of receiving PrevenSida exclusive care in comparison to those with lower risk occupations *(17% versus 9%, OR 2.0, CI 95% 1.3-3.1, $X^2$ 8.7)*.
- ❖ In municipalities with a high incidence of cargo transport, the PrevenSida exclusive coverage gap is wider and MARPs in higher risk occupations have three times more probabilities of receiving PrevenSida exclusive care *(22% versus 8%, OR 3.2, CI 95% 1.8-7.3, $X^2$ 10.5)* .In a significantly different situation *($X^{2het}$ 7.2, p=0.007)*, occupational risk does not make any difference in PrevenSida exclusive coverage in municipalities with low incidence of cargo transport *(15% versus 14%, $X^2$ 0.1)*.

- MARPs working in tourism-related activities have a 50% higher probability of receiving exclusive care, as compared to MARPs not working in tourism-related activities *(17% versus 12%, OR 1.5, CI 95% 1.1-2.0, $X^2$ 4.4)*. This association is modified by the incidence of different conditional factors:
  - ❖ I nMARPs with primary schooling, those working in tourism-related activities increase their PrevenSida exclusive coverage (19%), whereas MARPs not working in tourism-related activities reduce their PrevenSida exclusive coverage to half (6%). Hence, tourism-related MARPs have 3.7 times more probability of receiving PrevenSida exclusive care than those unrelated to tourism *(OR 3.7, CI 95% 1.9-8.6, $X^2$ 12.1)*. In a significantly different condition *($X^{2het}$8.4, p=0.003)*, tourism-related work does not make any difference in PrevenSida exclusive coverage for MARPs with a schooling level greater than 6$^{th}$ grade *(16% versus 15%, $X^2$ 0.1)*.
  - ❖ For MARPs working in higher risk occupations, tourism-related work does not make any difference in the probability of receiving PrevenSida exclusive coverage *(16% versus 15%, $X^2$ 0.1)*. However, in a significant contrast *($X^{2het}$ 4.7, p=0.03)*, MARPs in lower risk occupations unrelated to tourism reduce their coverage, so the probabilities of PrevenSida exclusive care for MARPs working in tourism-related activities increases 2.5 times *(17% versus 8%, OR 2.5, CI 95% 1.5-4.5, $X^2$ 9.4)*.

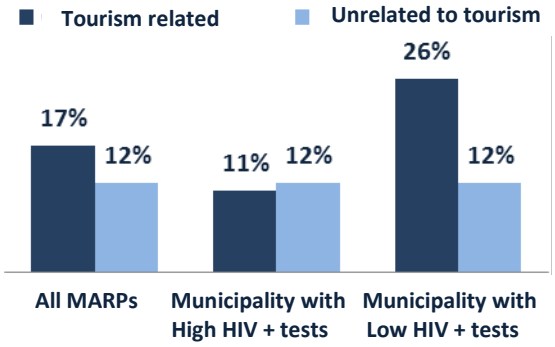
**Graph 57**
**PrevenSida Exclusive Coverage**
***By tourism-related work and schooling level***




**Graph 58**
**PrevenSida Exclusive Coverage**
***By tourism-related work and occupational risk level***




**Graph 59**
**PrevenSida Exclusive Coverage**
***By tourism-related work and municipal HIV test positivity rate***




- In the capital city, tourism-related work does not make any significant difference in PrevenSida exclusive coverage *(10% versus 13%, $X^2$ 0.6)*. However, in a significant contrast*($X^{2het}$ 4.4, p=0.03)*,the probability of receiving exclusive care from PrevenSida is 85% higher for MARPs working in tourism-related activities, as compared to those not working in tourism-related activities in departmental capitals and peripheral municipalities *(20% versus 12%, OR 1.9, CI 95% 1.3-2.8, $X^2$ 8.3)*.
- In MARPs living in municipalities with a high incidence of PrevenSida HIV positive tests, tourism-related work does not make any difference in the probability of receiving PrevenSida exclusive care *(11% versus 12%, $X^2$ 0.3)*. In a significantly different times their probabilities of receiving exclusive care from condition *($X^{2het}$ 9.0, p=0.02)*, MARPs working in tourism-related activities increase their coverage significantly and multiply by 2.6 PrevenSida in municipalities with a low PrevenSida HIV test positivity *(26% versus12%, OR 2.6, CI 95% 1.7-4.5, $X^2$12.2)*.

## IV. APPROXIMATIONS TO PREVENSIDA COVERAGE EFFECTIVENESS

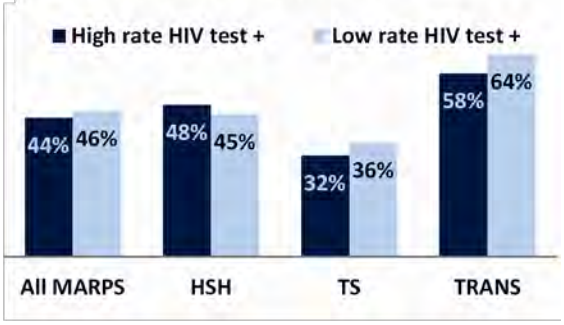
Major associations between PrevenSida preventive action coverage and various approximation indicators for program deliverables are shown in the context of interviewed MARP HIV protective capacities.

It is not an impact assessment, inasmuch as that was not the purpose of the study. For this reason, the design of the sample and questionnaires does not strictly match the methodological demands of such an assessment. Notwithstanding the above, the structure of the coverage actions permits to differentiate the preventive services provided by the program from those provided by other agencies, facilitating a comparison of exposures in terms of their association with proxy indicators regarding the protection status of MARPs, which are seen as program results.

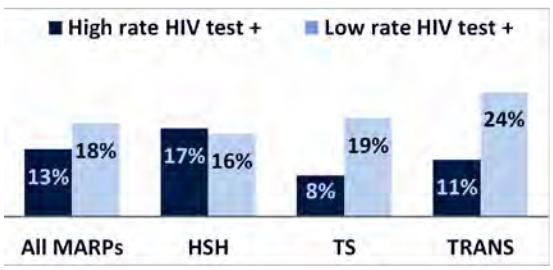
In this regard, it should be viewed as an evidence-based exercise that seeks to respond to the question included in the TORs on whether PrevenSida actions are "successful", and whether they could be replicated or scaled up in the context of the USAID program or elsewhere. To this end, an analysis was carried out in two methodological phases:

- Searching for associations between PrevenSida coverage and results indicators that would allow to determine whether it is "successful", to the extent that MARP exposure to PrevenSida care creates some difference (modification) in the outcome indicators.
- Searching for conditional factors that modify the significant associations found (Coverage←→Results), in order to explore conditions that facilitate or hinder its replication or scaling.

**Graph 60**
**PrevenSida Global Coverage**
***By municipal HIV test positive rate***




**Graph 61**
**PrevenSida Exclusive Coverage**
***By municipal HIV test positivity rate***

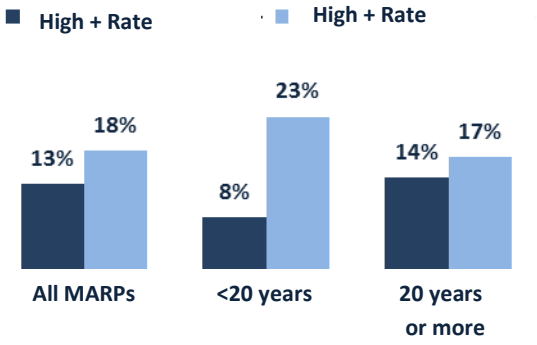



### 4.1 PrevenSida/HIV Test Positivity

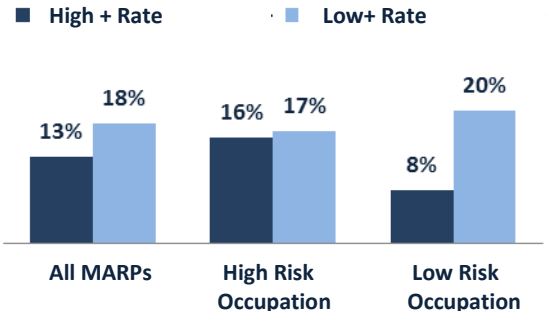
The starting point is a municipal-level risk rating carried out by the PrevenSida team, based on a review of rapid tests performed in the last three years, according to which the positivity rate was estimated. The numerator were the reactive tests in each municipality and the denominator was the total number of tests performed in that same municipality. Municipalities with 0.04% or more reactive tests were ranked as "high positivity", and the remainder were rated as "low positivity." This dichotomous variable (high=1, low=2) was assumed to be a mesovariable, namely, the entire MARP cluster was assigned a value corresponding to the relevant municipality. For this reason, it cannot actually be assumed as an outcome indicator because that would require an individual value resulting from a specific exposure, but it is included in this chapter to visualize the first effectiveness factor, which is targeting, i.e., matching risk distribution and coverage distribution.

Fifty-nine percent of MARPs live in high positivity municipalities, broken down as follows: 55% of MSM, 65% of SW, and 61% of TRANS. This is a predictable situation given that it was a sample selection criterion. No significant differences were found in PrevenSida global coverage between high and low HIV test positivity municipalities, or in total MARP sample or in any of the specific groups. That is to say, no

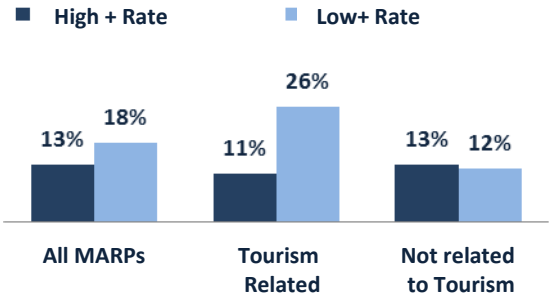
**Graph 62**
**PrevenSida Exclusive Coverage**
***by Age and Municipal HIV test positivity rate***




**Graph 63**
**PrevenSida Exclusive Coverage**
***by Municipal HIV test positivity rate and risk occupational level***




**Graph 64**
**PrevenSida Exclusive Coverage**
***by municipal HIV test positivity rate and tourism related work***



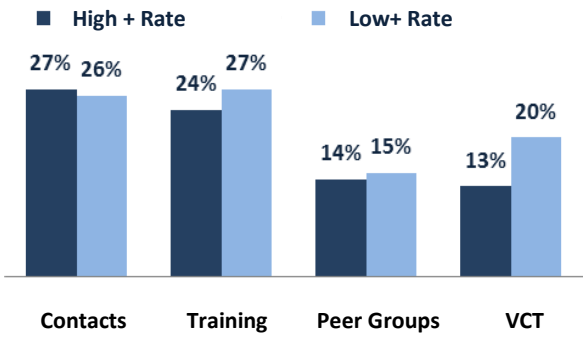

territorial prioritization related to test positivity has been in place in PrevenSida overall coverage.

In turn, PrevenSida exclusive coverage is lower in municipalities with a high HIV test positivity than in municipalities with low positivity, which means that MARPs living in higher positivity municipalities have a 35% lower probability of accessing PrevenSida exclusive care*(13% versus18%, OR 0.65, CI 95% 0.5-0.8, $X^2$ 8.0).*This association was even stronger in the case of SWs *(OR 0.37, CI 95% 0.3-0.7, $X^2$ 11.6)*and TRANS *(OR 0.4, CI 95% 0.2-0.8, $X^2$ 8.1)*. No difference was found in PrevenSida exclusive coverage between high and low HIV test positivity amongst MSM *($X^2$ 0.2)*.

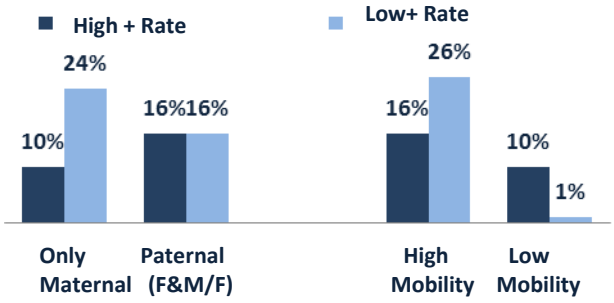
In MARPs as a whole, the reverse association between municipal HIV test positivity and PrevenSida exclusive coverage is modified:

- MARPs under 20years of age further reduce their exclusive coverage (8%) when they live in higher positivity municipalities, whereas those living in lower positivity municipalities have an increased coverage(23%). Hence, younger MARPs living in high positivity municipalities reduce their probability of receiving exclusive care from PrevenSida to one third as compared to younger MARPs living in lower positivity municipalities *(OR 0.3, CI 95% 0.1-0.6, $X^2$ 9.7)*. In a significant contrast*($X^{2het}$ 4.5, p=0.03)*,the municipal HIV test positivity rate does not make a significant difference in PrevenSida exclusive coverage *(14% versus 17%, $X^2$ 2.8) for* MARPs over 19 years old.
- In MARPs working in higher risk occupations, the level of municipal HIV test positivity does not make any difference in PrevenSida exclusive coverage *(16% versus 17%, $X^2$ 0.1)*. In a significant contrast *($X^{2het}$ 6.5, p=0.01)*, in MARPs working in lower risk occupations and living in higher HIV positivity municipalities have reduced their coverage to 8%. Hence, the probabilities of receiving exclusive care from PrevenSida are 2.7 times lower for MARPs living in high HIV positivity municipalities, as compared to those in low HIV positivity municipalities *(8% versus 20%, OR 0.37, CI 95% 0,2-0.6, $X^2$ 12.1)*.
- In MARPs working in tourism-related activities, their PrevenSida exclusive coverage is reduced in high HIV positivity municipalities, and increases in those municipalities with low positivity. Hence, the probabilities of receiving exclusive care from PrevenSida are three times lower in high positivity municipalities than in municipalities with low positivity *(11% versus 26%, OR 0.36, CI 95% 0,2-0.6, $X^2$ 14.2)*. In contrast *($X^{2het}$ 9.0, p=0.002)*, the level of municipal HIV test positivity does not make any difference in the odds of receiving PrevenSida exclusive care in MARPs working in activities unrelated to tourism *(13% versus 12%, $X^2$ 0.13)*.

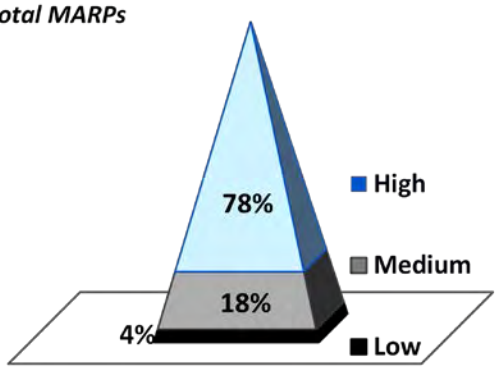
**Graph 65**
**PrevenSida Activity Coverage**
***by municipal HIV test positivity rate***




**Graph 66**
**PrevenSida VCT Coverage**
***by municipal HIV test positivity rate, cohabitation with parents and municipal incidence of mobile population***




**Graph 67**
**"PLACE" Risk Index**
***by number of new relations and number of sexual partners in the past month and year. Total MARPs***



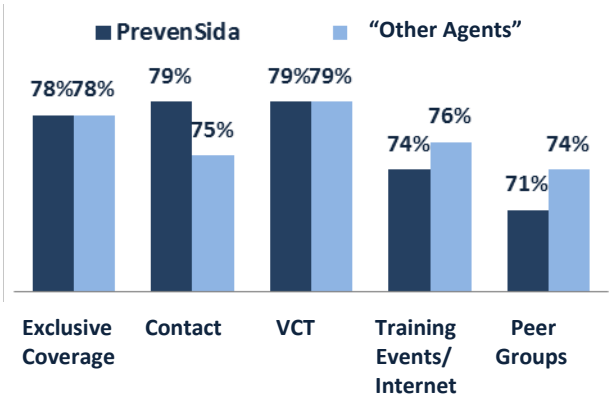

- A similar situation is found in:
  - ❖ MARPs working in activities related to mobile populations *(11% versus 22%, OR 0.4, CI 95% 0,3-0.7, $X^2$ 10.8)*, as opposed *($X^{2het}$ 4.5, p=0.03) to* MARPs working in activities not related to mobile populations *(14% versus 15%, $X^2$ 0.15)*.
  - ❖ MARPs living in municipalities with a high incidence of mobile populations *(14% versus 21%, OR 0.6, CI 95% 0,4-0.8, $X^2$ 6.5)*, as opposed to *($X^{2het}$ 4.7, p=0.03)* to MARPs living in municipalities with a low incidence of mobile populations *(12% versus 9%, $X^2$ 1.0)*.
  - ❖ MARPs living in municipalities with a high incidence of cargo transport *(11% versus 21%, OR 0.5, CI 95% 0,3-0.7, $X^2$ 12.1)*, as opposed to *($X^{2het}$ 5.1, p=0.02)* MARPs living in municipalities with a low incidence of cargo transport *(14% versus 14%, $X^2$ 0.02)*.

No association was found between the municipal HIV test positivity rate and coverage of the different communication activities offered by PrevenSida. PrevenSida promotional contacts have the same coverage, regardless of the municipal positivity rate *(27% versus 26%, $X^2$ 0.03)*, which is similar to the coverage of PrevenSida training events *(24% versus 27%, $X^2$ 1.6)* and peer group participation *(14% versus 15%,$X^2$ 0.12)*.

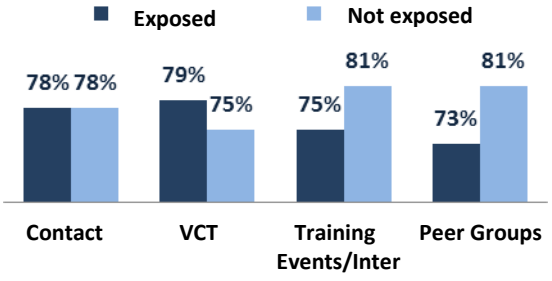
The only exception is VCT coverage provided by PrevenSida, which was lower in high positivity municipalities, as compared to those with low positivity *(13% versus 20%, OR 0.58, CI 95% 0.4-0.8, $X^2$ 13.4*). Only two factors modifying this association were found:

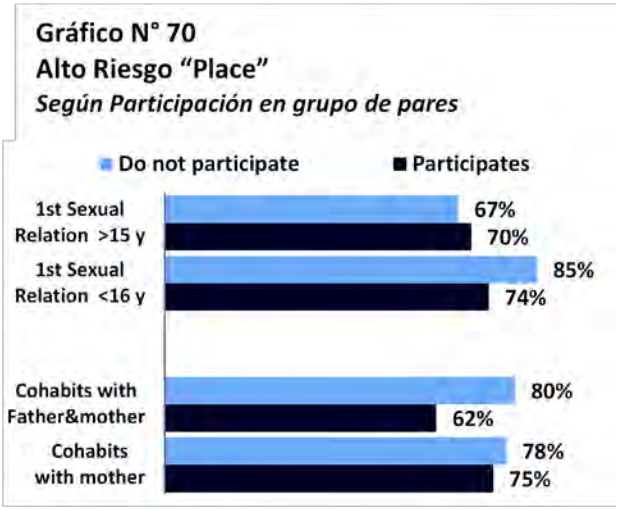
- ❖ MARPs living with any of their parents in the same home. Those living only with their mothers (33%) increase the PrevenSida VCT coverage gap between municipalities with high and low HIV test positivity *(10% versus 24%, OR 0.37, CI 95% 0,2-0.6, $X^2$15.5)*.In contrast *($X^{2het}$ 6.6, p=0.01)*, there is no difference in PrevenSida VCT coverage (16% versus 16%, $X^2$ 0.01) in MARPs with a paternal presence at home (father and mother 21%, father only 3%).
- ❖ Municipal mobile population incidence. Differences in PrevenSida VCT coverage between high and low HIV test positivity municipalities is similar to the overall situation in high mobility municipalities *(16% versus 26%, OR 0.55, CI 95% 0,4-0.8, $X^2$ 10.8)*.In contrast *($X^{2het}$ 17.8, p=0.00)*, the VCT coverage gap between high and low HIV test positivity municipalities is inverted in municipalities with low mobile population incidence *(10%versus 1%, OR 7.7, CI 95% 2.7-14.2, $X^2$ 10.8)*.

**Graph 68**
**"PLACE" High Risk**
***by interpersonal communication activities and exclusive covered provided by PrevenSida***




**Graph 69**
**"PLACE" High Risk**
***By exposure to four interpersonal communication activities***




## 4.2 New Infection Risk Index: PLACE

As indicated in the methodology chapter, PLACE focuses attention on HIV epidemic control in the transmission chain driven by new sexual partners that a person has in a particular period of time, and complemented with the number of sexual partners this same person has during the same period. A high risk level is assigned to those who have had a new sexual partner and/or more than one sexual partner in the past month; a moderate risk level is assigned to those who have had a new sexual partner and/or more than one sexual partner in the past year; and a low risk level is assigned to those who have not had sex or have had only one stable sexual partner in the past year.

Since this study is focused on MARPs, 78% of them have been ranked as "high risk", 18% as "moderate risk", and only 4% qualify as "low risk". At the territorial level, the highest rate of "high risk" is found in Managua (84%) and the lowest in the West region (72%); the other three regions revolve around the average (South Pacific region 76%, Central region 77%, Caribbean 78%). In population terms, the highest rate of "high risk" is found in SW (93%), the lowest is found in MSM (67%) and a mean rate is reported for TRANS (80%).

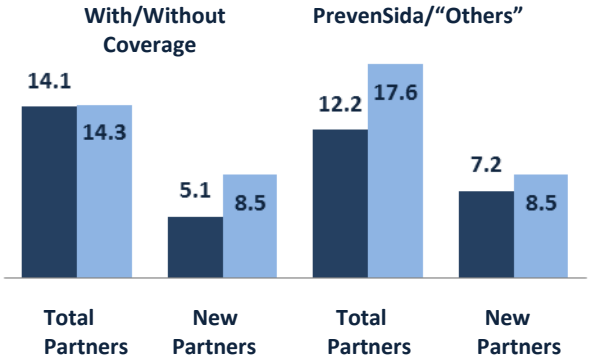
No association was found between the PLACE risk level with PrevenSida exclusive coverage or with communication activities, as compared to those provided by other agents *(Exclusive coverage $X^2$ 0.02, Contacts $X^2$ 2.1, VCT $X^2$ 0.0, Events $X^2$ 0.6, Peer groups $X^2$ 0.7).*

Nevertheless, we did find that "PLACE high risk" rate can be modified through participation in training or exchange events, and through peer group socialization offered by all providers, as compared to MARPs that were not covered by these two actions. MARPs involved in some peer group session have 37% less probability of being rated as "PLACE high risk", as compared to MARPs that have not participated in any peer group session *(73% versus 81%, OR 0.63, CI 95% 0,5-0.8, $X^2$12.4).*

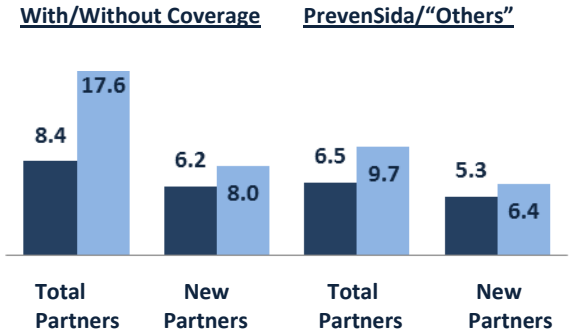
The association between a reduced "PLACE high risk" rate and peer group participation was only explained by:

- Having had the first sexual relation before age 16. In this segment, participation in peer groups reduces their probability of being included in "PLACE" high risk" almost to half (48%), as compared to MARPs that have not participated in peer groups *(74% versus 85%, OR 0.52, CI 95% 0.4-0.7, $X^2$ 20.2).*In contrast, *($X^{2het}$ 8.3, p=0.004)*, in MARPs that initiated their sexual life at 16 years or older, peer group participation does not make any difference in the "PLACE high risk" rate (70% versus 67%, $X^2$ 0.5).

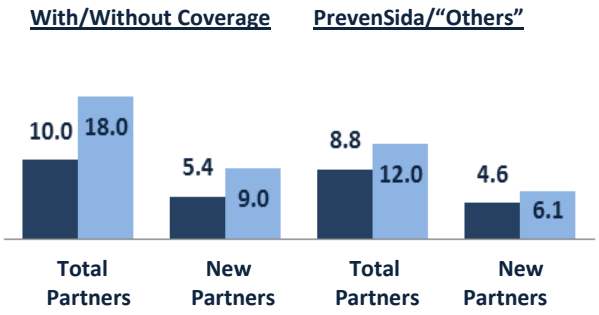
**Graph 71**
**Average sexual partners, past month,**
***by exposure to promotional contacts***




**Graph 72**
**Average sexual partners, past month,**
***by participation in peer groups***




**Graph 73**
**Average sexual partners, past month, *by participation in training events***

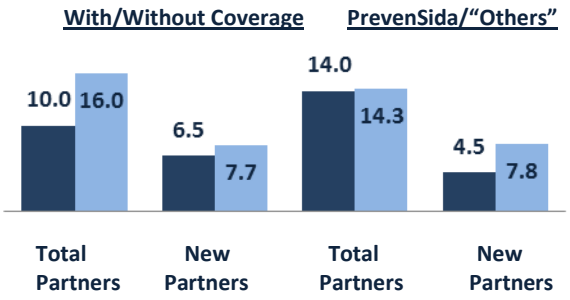



- Living with parents. The odds of being included in "PLACE high risk" is reduced by 61% *(62% versus 80%, OR 0.39, CI 95% 0.2-0.7, $X^2$ 14.5)* in MARPs living with their mother and father and participating in peer groups. In contrast *($X^{2het}$ 5.8, p=0.01)*, peer group participation does not modify the "PLACE high risk" rate *(75% versus 78%, $X^2$ 0.5)* in MARPs living only with their mother.

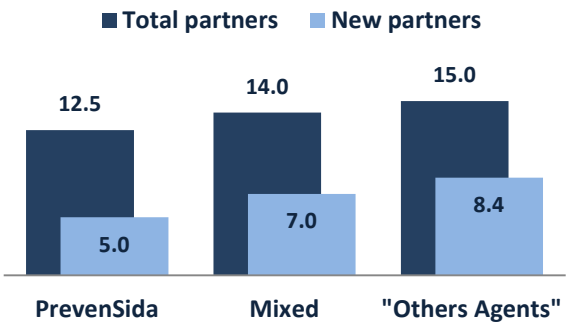
The above situation results from the likelihood that preventive services are able to reduce the number of sexual partners or the number of new sexual partners that MARPs have had in the past month. This is why the potential association between the coverage of each of the four activities included in the global coverage index and PrevenSida exclusive coverage was reviewed, finding the following evidence:

- MARPs exposed to some promotional contact regarding HIV do not significantly modify their average number of sexual partners *(14.1 versus 14.3, $X^{2K-W}$ 0.02)*, nor the average of new sexual partners *(5.1 versus 8.5, $X^{2K-W}$ 1.4)*, as compared to MARPs unexposed to promotional contacts. However, MARPs exposed to PrevenSida network contacts significantly reduce their average number of sexual partners, as compared to MARPs exposed to contacts from "other providers" *(12.2 versus 17.6, $X^{2K-W}$ 5.7, p=0.02)*. This association was not found in the case of new sexual partners *(7.0 versus 8.5, $X^{2K-W}$ 0.56)*. Nevertheless, no association was found between the number of contacts and the number of partners *($X^{2K-W}$ 3.4, p=0.48)* or number of new partners *($X^{2K-W}$ 2.4, p=0.72)*.
- MARPs participating in peer socialization groups significantly reduced both their average number of sexual partners *(8.4 versus 17.6, $X^{2K-W}$ 40.4, p=0.000)* and their average number of new sexual partners *(6.2 versus 8.0, $X^{2K-W}$ 19.2, p=0.000)* in the past month, in contrast with MARPs that have not participated in any peer group session. No difference was found in the average number of sexual partners *(6.5 versus 9.7, $X^{2K-W}$ 0.6)* or number of new partners *(5.3 versus 6.4, $X^{2K-W}$ 0.1)* in relation to exposure originating from PrevenSida or "other agents".
- MARPs that have participated in training events significantly reduced both their average number of sexual partners *(10.0 versus 18.0, $X^{2K-W}$ 34.8, p=0.000)* and their average number of new sexual partners *(5.4 versus 9.0, $X^{2K-W}$ 26.6, p=0.000)* in the past month, in comparison with MARPs that have not participated in any training event. No difference was found in the average number of sexual partners *(8.8 versus 12.0, $X^{2K-W}$ 0.27)* or number of new partners *(4.6 versus 6.1, $X^{2K-W}$ 0.13) in relation to* exposure originating from PrevenSida or "other agents".

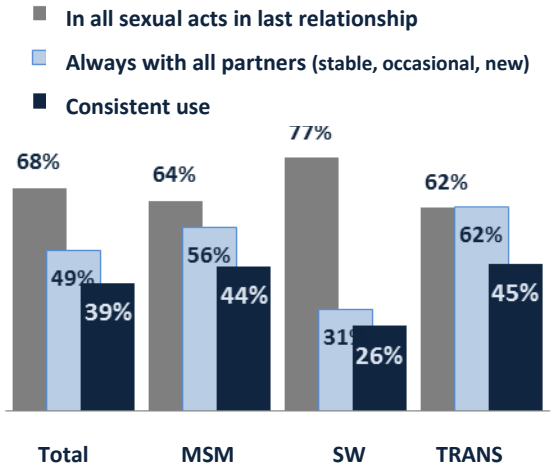
**Graph 74**
**Average number of sexual partners in the past month, *by VCT carried out in the past year***




**Graph 75**
**Average number of sexual partners in the past month *by exclusive coverage provided by PrevenSida and "Other Agents"***




**Graph 76 Condom Use**




- MARPs that have received VCT in the past year significantly reduce their average number of sexual partners *(10.0 versus 16.0, $X^{2K-W}$ 12.0, p=0.005),* although they do not significantly modify the average number of new sexual partners *(6.5 versus 7.7, $X^{2K-W}$ 0.22)* in the past month, as compared to MARPs that have not received VCT in the past year. No difference was found in the average number of sexual partners *(14.0 versus 14.3 $X^{2K-W}$ 0.4)* or number of new sexual partners *(4.5 versus 7.8, $X^{2K-W}$ 0.22) in relation to* exposure originating from PrevenSida or "other agents".
- Significant differences were found between the average number of sexual partners *(12.5 versus 14.0 versus 15.0, $X^{2K-W}$ 6.5, p=0.03, 2 GL)* and the average number of new sexual partners *(5.0 versus 7.0 versus 8.4, $X^{2K-W}$ 5.8, p=0.05, 2 GL)* in the past month among MARPs, depending on whether they received PrevenSida exclusive coverage, mixed coverage, or exclusive coverage from "other agents."

al Partners New Partners

## 4.3 Consistent Condom Use

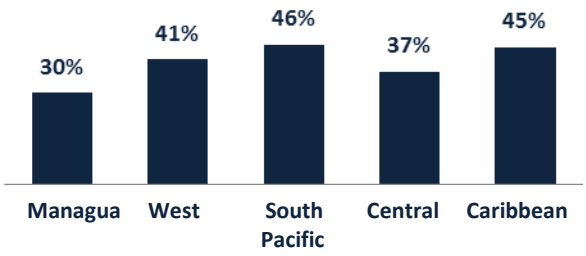
A "consistent condom use index" was developed based on the answers to two interview questions inquiring whether:

- A condom was always used with a stable partner, occasional partners and new partners.
- A condom had been used in all sexual acts performed in the last sexual relation.

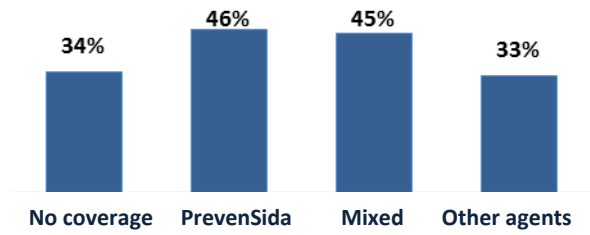
Condom use was rated as "consistent" when it was always used with the three types of partners and in all sexual acts during the last relationship.

Thirty-nine percent of interviewed MARPs consistently use a condom, a percentage obtained by combining 49% of MARPs that always use a condom with all partners and 68% of MARPs that used a condom in all sexual acts during the last relationship. The resulting global reduction mainly results from 29% of MARPs that adequately used a condom in their last relationship, but claim that they do not always use it with all partners. A major contribution is that half of SW do not use a condom with all partners (particularly with their stable partner). This same condition is found in 19% of MSM and 17% of TRANS. Ten percent of MARPs use a condom with all their partners, although they did not adequately use it in their last sexual relationship (17% in TRANS, 11% in MSM, and 5% in SW). Lastly, 22% of MARPs do not use a condom with all their partners and did not adequately use it in their last sexual relationship (25% of MSM, 21% of TRANS, and 18% of SW).

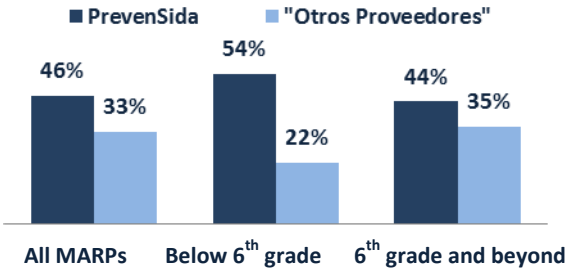
**Graph 77**
**Consistent Condom Use *by Region***



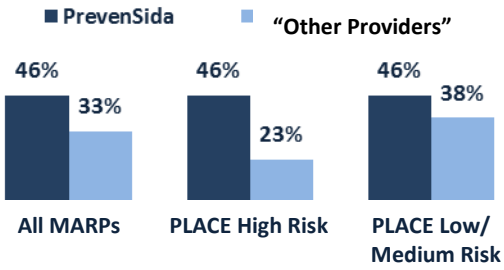

**Graph 78**
**Consistent Condom Use**
***by Preventive Coverage Provided by Agents***




**Graph 79**
**Consistent Condom Use *by Exclusive Coverage of Preventive Service Providers and Schooling***




**Graph 80**
**Consistent Condom Use**
***by Exclusive Coverage from PrevenSida and Other Agents, and head of household***

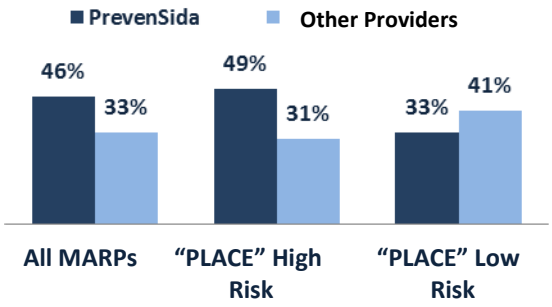



Consistent condom use rates are higher in the South Pacific and Caribbean regions (46% and 45%), and lower in Managua (30%). The rate in the other two regions is close to average (West region at 42% and Central region at 37%). In MSM and TRANS, the rate is 45%, although significantly reduced in SW, reaching just 26%.

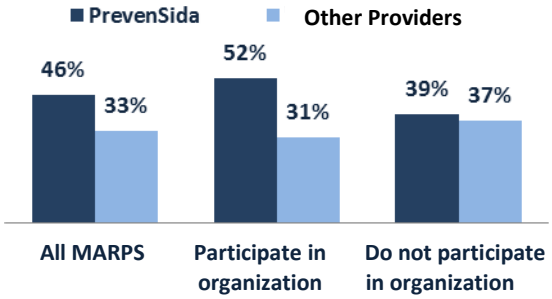
The type of global preventive service coverage of each MARP clearly makes a difference in the rates of consistent condom use *($X^2$ 22.1, p=0.0000, 3 GL)*. In MARPs that have not received any of the 4 activities included in the coverage, the rate is 34%, while the rate in MARPs with exclusive coverage from "other agents" is 33%. The rate is 45% among MARPs with mixed coverage, and 46% with PrevenSida exclusive coverage. In this same context, the significance of potential contrasts between the four global coverage groups is worth noting:

- No significance was found in consistent condom use rate differences between MARPs exposed to some of the 4 activities and those exposed to none *(39% versus 34%, $X^2$ 1.5)*.
- MARPs exposed to PrevenSida exclusive coverage have 42% more probability of achieving consistency in condom use, as compared to MARPs in the other three coverage groups *(46% versus 37%, OR 1.4, CI 95%1.1-1.9, $X^2$ 5.4)*.
- MARPs exposed to PrevenSida exclusive coverage have 73% more probability of achieving consistency in condom use, as compared to MARPs exclusively served by "other agencies" providing preventive services *(46% versus 33%, OR 1.7, CI 95% 1.2-2.4, $X^2$ 11.4)*. This association was stronger where:
  - ❖ MARPs have an education lower than 6th grade, the odds of consistent condom use is four times higher when they are exclusively served by PrevenSida than those served by "others" *(54% versus 22%, OR 4.2, CI 95% 1.9-9.2, X2 13.2)*. In contrast *($X^{2het}$ 6.0, p=0.01)*, the odds of consistent condom use in MARPs with a schooling level of 6th grade or higher is just 40% higher in those served by PrevenSida *(44% versus 35%, OR 1.4, CI 95% 1.0-2.1, X2 4.3)*.
  - ❖ MARPs are heads of household, in which case PrevenSida exclusive coverage increases almost three times the odds of consistent condom use, as compared to MARPs covered by "other" providers *(46% versus 23%, OR 2.8, CI 95% 1.5-5.3, $X^2$ 13.2)*. In contrast *($X^{2het}$ 4.4, p=0.03)*, PrevenSida coverage does not make any significant difference in respect of coverage provided by "others" in MARPs that are not heads of household (46% versus 38%, $X^2$ 2.5).
  - ❖ MARPs are rated as "high risk of new transmissions" (PLACE index), in which case PrevenSida exclusive coverage doubles the

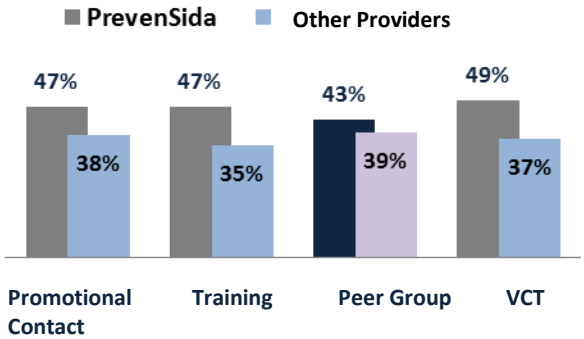
**Graph 81**
**Consistent Condom Use** ***by PrevenSida or "other" exclusive coverage and "PLACE" risk level***




**Graph 82**
**Consistent Condom Use**
***by PrevenSida or "Other" exclusive coverage and participation in organization***




**Graph 83**
**Consistent Condom Use**
***by Action Coverage by Agent***

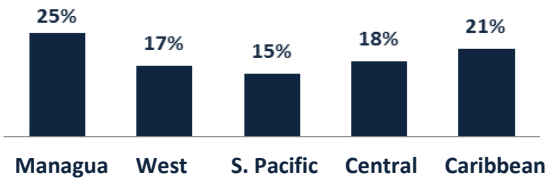



odds of consistent condom use, as compared to MARPs with the same characteristics covered by "other" preventive service providers *(49% versus 31%, OR 2.2, CI 95% 1.5-3.2, $X^2$ 18.3)*. In contrast *($X^{2het}$ 7.5, p=0.006)*, no significant difference was found in consistent condom use between PrevenSida coverage and "other" preventive service providers in MARPs rated as moderate/low risk in the PLACE index *(33% versus 41%, $X^2$ 0.8)*.

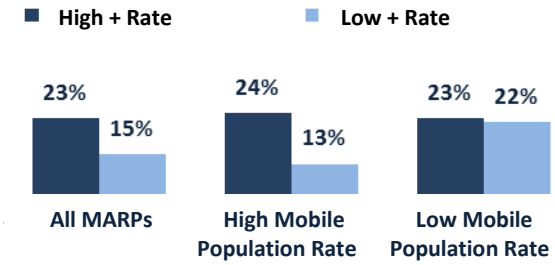
- ❖ MARPs that do not participate in any organization because their preventive coverage is provided exclusively by the PrevenSida network increase 2.4 times their odds of consistent condom use, as compared to unorganized MARPs served by "other agents" *(52% versus 31%, OR 2.4, CI 95% 1.5-3.8, $X^2$ 16.6)*. In contrast *($X^{2het}$ 5.6, p=0.02)*, no significant difference was found in consistent condom use rates between MARPs served exclusively by PrevenSida and those served by "other" preventive service providers in the MARP segment that does not participate in any organization *(39% versus 37%, $X^2$ 0.2)*.
- ❖ In MARPs that identify any organization that could provide HIV-related support because PrevenSida exclusive coverage doubles their odds of consistent condom use, as compared to those served by "other" providers *(51% versus 32%, OR 2.2, CI 95% 1.4-3.3, $X^2$ 14.6)*. In contrast *($X^{2het}$ 5.0, p=0.02)*, no difference was found in consistent condom use rates between MARPs served by PrevenSida and those served by "other" preventive service providers in MARPs that are not aware of any HIV-related support organization *(32% versus 33%, $X^2$ 0.04)*.

- Some preventive activities provided by PrevenSida affect consistent condom use:
  - ❖ Coverage of PrevenSida promotional contacts increases by 60% the odds of consistent condom use *(47% versus 38%, OR 1.4, CI 95% 1.1-1.9, $X^2$ 7.0)*, as compared to "other providers". No difference was found, however, in consistent condom use rate in relation to the number of promotional contacts *($X^2$ 0.5, p=0.47)*.
  - ❖ Participation in training events provided by PrevenSida increases by 64% the odds of consistent condom use (*47% versus 35%, OR 1.6, CI 95% 1.2-2.3, $X^2$9.8)*, as compared to "other providers".
  - ❖ Participation in peer group socialization sessions provided by PrevenSida does not make any difference in odds of consistent condom use (*43% versus 39%, $X^2$ 0.9)* in comparison to "other providers".
  - ❖ VCT care provided by PrevenSida increases by 67% the probabilities of consistent condom use (*49% versus 37%, OR 1.7, CI 95% 1.2-2.3, $X^2$ 10.8)*in comparison to "other providers".

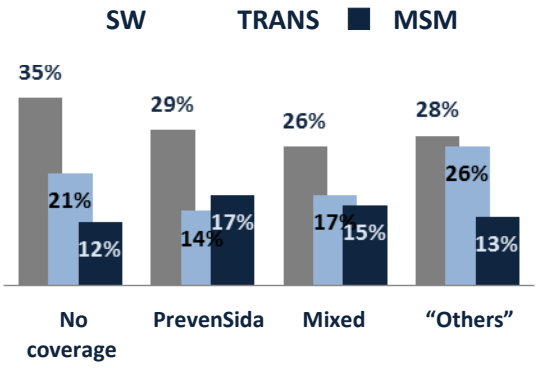
**Graph 84**
**STI History by regions**



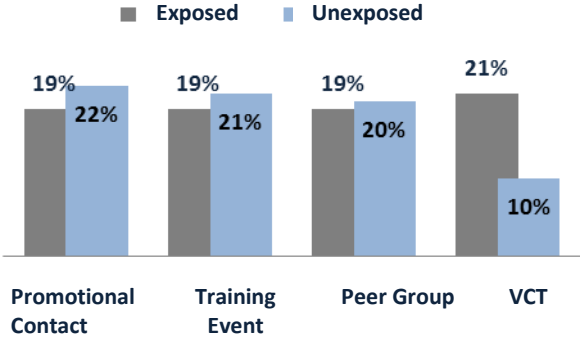

**Graph 85**
**STI History by Municipal HIV test positivity rate and mobile population incidence rate**




**Graph 86**
**STI History by type of MARP and coverage segment by agent**




**Graph 87**
**STI history by exposure to preventive activities**




❖ MARPs that often get their condom supply from PrevenSida increase by 38% their odds of consistent condom use (*46% versus 38%, OR 1.4, CI 95% 1.0-1.8, $X^2$4.9)* in comparison to "other providers".

## 4.4 History of Sexually Transmitted Infections

Twenty percent of MARPs claim a history of STI. The highest rates are found in Managua (25%) and the Caribbean (21%), and the lowest in the South Pacific region (16%). Rates in the West and Central regions remain average (17% and 18%). By type of MARP, SW have the highest rate at 29%, and MSM the lowest at 14%, while TRANS have a rate of 20%. This means that SW have twice the odds of an STI history than the other two groups *(29% versus 16%, OR 2.1, CI 95% 1.7-2.9, $X^2$ 32.3).*

STI history rate is significantly higher in municipalities with higher PrevenSida HIV test positivity *(23% versus 15%, OR 1.7, CI 95% 1.3-2.3, $X^2$ 12.8)*. This association is even stronger in municipalities with a high incidence of mobile populations *(24% versus 13%, OR 2.1, CI 95% 1.4-3.1, $X^2$ 14.5)*. In a significant contrast *($X^{2het}$ 5.5, p=0.02)*, test positivity rates do not make any difference in STI history in municipalities with a low incidence of mobile populations *(23% versus 22%, $X^2$ 1.0)*.

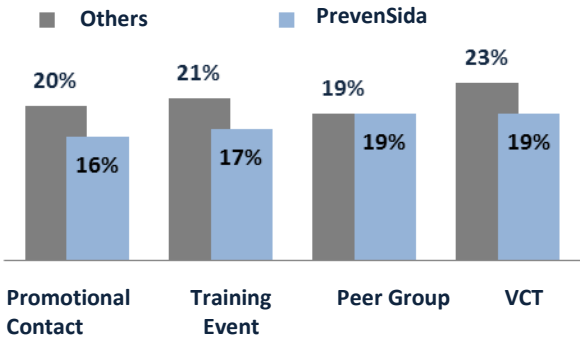
There are no significant differences in STI history rates in the four preventive action segments of global coverage. Rates are 20% in MARPs without any coverage in the four activities, 18% in MARPs under mixed coverage, 19% in MARPs exposed exclusively to PrevenSida, and 21% in MARPs covered only by "other providers" *($X^2$ 0.7)*.

No significant differences were found between the potential coverage in the three MARP types, although SW always have the highest STI history rates in all coverage segments. The TRANS group has the lowest rate under PrevenSida exclusive coverage.

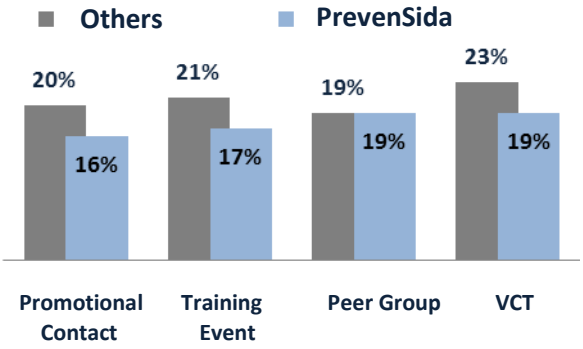
Except for the VCT case, no significant differences were found in STI history rates in a comparison between MARPs exposed to each prevention action and MARPs not exposed to the same actions:

- Having been exposed to some HIV promotional contact does not make any difference in STI history rate *(19% versus 22%, $X^2$ 2.5)*.
- There was no difference in STI history rate as a result of participating in any training event *(19% versus 21%, $X^2$ 1.1)*.

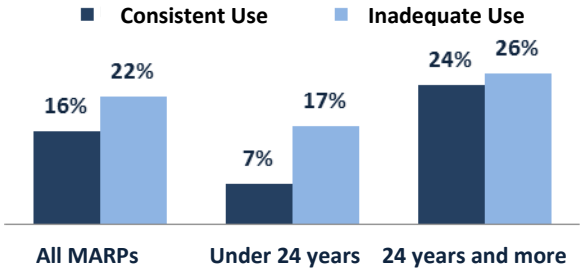
**Graph 88**
**STI History by coverage of actions by agent**




**Graph 88**
**STI History *by coverage of actions by agent***




**Graph 89**
**STI history**
***by consistent condom use and age***




- Having participated in peer socialization groups in relation to HIV is not associated with an STI history rate *(19% versus 20%, $X^2$ 0.2)*.
- Having carried out VCT is associated with a 2.4 times higher probability of having an STI history, as compared to MARPs that have not carried out the test *(21% versus 10%, OR 2.4, CI95% 1.6-4.2, $X^2$ 16.1)*.

No differences in STI history rates were found between MARPs covered by each preventive action provided by PrevenSida and those covered by "other providers".

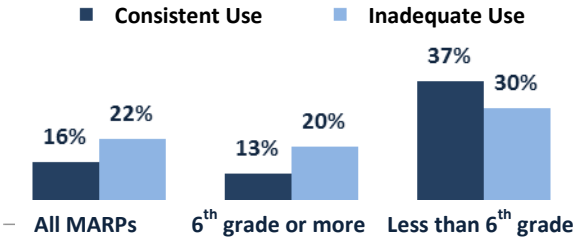
- In the case of contacts, STI history rates were 16% with PrevenSida and 20% with other providers *($X^2$ 2.4)*.
- Similarly, when workshops/events have been offered by PrevenSida or "other providers" *(17% versus 21%, $X^2$ 2.1)*.
- The same situation arises when peer groups have been promoted by PrevenSida or "other providers" *(19% versus19%, $X^2$ 0.0)*.
- The STI history rate was similar with VCT provided by PrevenSida or by "other providers" *(19% versus 23%, $X^2$ 1.5)*.

In MARPs that have recognized any organization of the PrevenSida network as an HIV support organization, the STI history rate is significantly lower than in MARPs that have recognized "other organizations." Thus, MARPs that recognize PrevenSida have a 38% lower probability of having an STI history, as compared to MARPs that recognize "other organizations" *(17% versus 25%, OR 0.62, CI 95% 0.4-0.8, $X^2$ 9.2)*.

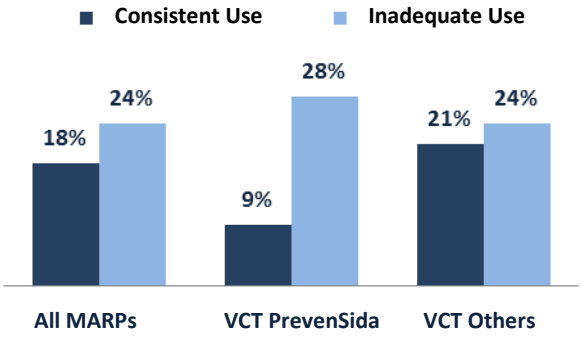
STI history rate is significantly lower in MARPs using a condom consistently than in those not doing so. Consistent condom use reduces by 32% the odds of having an STI history *(16% versus 22%, OR 0.68, CI 95% 0.5-0.9, $X^2$ 7.5)*. The protective effect of consistent condom use is even greater when:

- ❖ MARPs are less than 24 years old because they reduce by 60% the odds of having an STI history when they use a condom consistently, as compared to those not using a condom consistently *(7%versus 17%, OR 0.4, CI 95% 0.2-0.7, $X^2$ 11.1)*. In contrast *($X^{2het}$ 5.5, p=0.02)*, consistent condom use by MARPs older than 24 years did not make any difference in STI history rates *(24% versus 26%, $X^2$ 0.8)*.
- ❖ MARPs do not have children, in which case consistent condom use reduces by 45% the odds of having an STI history, as compared to those not using a condom consistently *(12% versus 19%, OR 0.55, CI 95% 0.4-0.8, $X^2$ 9.3)*. In contrast *($X^{2het}$ 6.5, p=0.01)*, consistent condom use by MARPs with children did not make any difference in STI history rates *(29% versus 26%, $X^2$0.5)*.

**Graph 90**
**STI history by consistent condom use and schooling**




**Graph 91**
**STI history by consistent condom use and *VCT PrevenSida***




- The probability of having an STI history is reduced by 41% in MARPs with a schooling level of 6th grade or more and consistent condom use, as compared to those not using a condom consistently *(13% versus 20%, OR 0.59, CI 95% 0.4-0.8, $X^2$ 10.1)*. In contrast *($X^{2het}$ 6.2, p=0.01)*, consistent condom use does not make any difference in STI history rates in MARPs with a schooling level below 6th grade *(37% versus 30%, $X^2$ 1.1)*.
- MARPs have carried out VCT offered by a PrevenSida network organization and use a condom consistently. In this case, they reduce to less than one third the odds of having an STI history, as compared to those not using a condom consistently *(9% versus 28%, OR 0.26, CI 95% 0.1-0.6, $X^2$ 12.2)*. In contrast *($X^{2het}$ 7.5, p=0.006)*, consistent condom use by MARPs that have carried out VCT with "other agents" does not make any difference in STI history rates *(21% versus 24%, $X^2$ 1.0)*.
- MARPs identify a PrevenSida network organization that provides HIV support. In this segment, the odds of an STI history is slightly reduced by more than half through consistent condom use, as compared to those not using it adequately (11% *versus 22%, OR 0.45, CI 95% 0.3-0.7, $X^2$ 9.7)*. In contrast *($X^{2het}$ 4.0, p=0.04)*, consistent condom use by MARPs that recognize any HIV support organization does not make any difference in STI history rates *(19% versus 22%, $X^2$ 1.0)*.

## 4.5 Effectiveness Measured by Number of Promotional Contacts

Given the relevance of the number of contacts in PrevenSida planning and management models, this section has been reserved to present the findings related to the effects associated with an increased number of contacts received by each MARP served by PrevenSida, some of which have already been specifically set forth in previous chapters.

Based on the assumption that a relationship exists between the number of contacts and the probabilities of modifying risk levels or increasing protective behaviors, this association was explored to determine whether the number of contacts could have the effect of reducing the likelihood of HIV infection:

- No significant difference was found in the number of contacts provided by PrevenSida, as per municipal HIV test positivity rate, or in the one-to-one increase trend *($X^2$ 0.95, 3GI)*, or in the contrast of 1-2 contacts versus 3 and more contacts *($X^2$ 1.2)*. In other words, the number of contacts to the same MARP is not modified by the territorial risk level (high municipal rate of positive tests).
- No association was found between the number of contacts provided by PrevenSida (one-to-one increase contrast, X2 1.3, 3GL) and the percentage of MARPs ranked as "PLACE high risk". Having three or more PrevenSida contacts is associated with a higher share of MARPs ranked as "PLACE high risk", as compared to MARPs with one or two PrevenSida contacts (77% versus 67%, OR 1.7, CI 90% 1.0-2.7, $X^2$ 3.0). This means a contact increase is associated with targeting the search for MARPs on concentration venues with a higher risk level. Delving deeper into this indicator, no significant differences were found in the average number of sexual

partners during the past month per the number of PrevenSida contacts received, or in the one-to-one increase contrast ($X^{2kw}$ 0.7, p=0 .88, 3GI), or in the contrast of 1-2 contacts versus 3 or more ($X^{2kw}$ 0.6, p=0.42). The same lack of association is reported in the average number of new sexual partners, in both the one-to-one increase ($X^{2kw}$ 0.65, p=0.88) and the contrast of 1-2 contacts versus 3 or more ($X^{2kw}$ 0.5, p=0.46).

- No association was found between the number of contacts provided by PrevenSida and the consistent condom use rate. This applies to both the one-to-one increase contrast ($X^{2kw}$ 1.2, p=0.25, 3GI) and to the contrast between one contact and two or more contacts ($X^2$ 0.9), and also to the contrast of 1-2 contacts versus 3 or more ($X^2$ 0.6).
- No association was found between the number of contacts provided by PrevenSida and an STI history rate, or in the one-to-one increase contrast ($X^{2kw}$ 0.3, p=0.53, 3GI), or in the contrast of 1-2 contacts versus 3 or more contacts ($X^2$ 0.5).

The possible association between the number of contacts provided by PrevenSida and the probabilities of MARPs accessing PrevenSida network global preventive care, or the other specific activities covered, was explored:

- The increase in the number of contacts provided by PrevenSida significantly increases the odds of participating in PrevenSida training events, with a trend that ranges from 29% with 1 or 2 contacts, to 43% with three contacts, and 55% with four or more contacts *($X^2$ 12.0, 3GI)*. This means that a MARP that has received three or more contacts from PrevenSida has an almost triple probability of attending some training event offered by PrevenSida *(52% versus 29%, OR 2.7, CI 95% 1.5-5.4, $X^2$ 11.1)*.
- No association was found between the number of contacts provided by PrevenSida and the share of MARPs participating in peer socialization groups. This applies to the one-to-one increase contrast ($X^{2kw}$ 2.4, p=0.12, 3GI), to the contrast between one contact and two or more contacts ($X^2$ 2.2), and to the contrast of 1-2 contacts versus 3 or more contacts ($X^2$ 0.96).
- The increase in the number of contacts provided by PrevenSida significantly increases the probability that MARPs carrying out VCT in PrevenSida network organizations, with a trend of 14% with 1 or 2 contacts, 27% with three contacts, and 36% with four or more contacts *($X^2$ 10.9, 3GI)*, which means that MARPs that have received three or more contacts from PrevenSida have three times more probability of carrying out VCT offered by PrevenSida *(34% versus 14%, OR 3.2, CI 95% 1.6-6.6, $X^2$ 10.1)*.

As stated above, the number of contacts have a remarkable effect in PrevenSida in the coverage of the other prevention activities, although it also has some effect on outcome indicators. That is why this study has characterized promotional contacts, which duration and implementation do not permit an interactive dialogue, but they do have a clear motivating function in relation to HIV, as well as a function of calling to participate in other activities.

## V. CONCLUSIONS

The study provides valuable evidence for different types of analysis and could also be used as an input to planning processes at different management levels to enhance action targeting, either at the level of the program, project or implementing organization, and even in specific thematic areas where performance of some indicators suggests a match or mismatch with "expected" parameters.

Since the basic review is a contrast analysis of indicators at different sample strata, those differences that constitute statistically significant evidence are presented as relevant findings (with a 95% confidence interval) and reflect the incidence of some factor that conditions PrevenSida coverage distribution or effectiveness. In the absence of major assessable or interpretative elements on the part of the research team by reason that it does not know all "expected" parameters at an operational level, and recognizing that the social actors involved in the project have the interpretative elements derived from the day-to-day dynamics of the project and operating management decisions that guide it, we highlight the value of the evidence to encourage collective reflection and dialogue within field teams of PrevenSida network implementing organizations, as well as between this level, project management and the HIV/USAID Program.

As already pointed out, while a specific analysis of the different preventive actions was conducted, it has been included as an annex to this report, in order to provide evidence derived from the operational dynamics, each of which is influenced by various factors.

Although PrevenSida reaches 45% of MARPs through one or more of its main four preventive activities, this global coverage includes 30% of total MARPs receiving preventive actions from PrevenSida and "other providers." Hence, PrevenSida provides exclusive coverage to 15% of MARPs. The main characteristics of PrevenSida coverage targeting are:

1. The level of approximation between PrevenSida global coverage data in this study (45%) and the level estimated for 2013 (41%), based on MARP Unified Register (UR) and population estimates by CONISIDA, stands out. While SW show the lowest coverage in both estimates, the coverage estimated for each group is different. More differentiated rates are reported in this study, with the highest coverage found in TRANS (60%) and the lowest in SW (34%), while MSM have an average rate (46%). Coverage similarity in the estimates (43%, 42%, and 40%) seems to reflect the effect of using MARP-UR data as the basis for the population estimate.

2. Coverage reflects access modalities for reaching MARPs, which have been used by PrevenSida since the beginning, and particularly mapping methods of concentration and pickup venues since 2013. Major factors associated to an increased coverage are:

    - MARPs participation in some organization, which largely influences PrevenSida global coverage (OR 2.9), as well as its exclusive coverage (OR 1.4). In turn, this condition is related to the fact that in MARPs claiming to be organized (40% of total), the vast majority (29% of total) claim to be linked to some NGO or association engaged in HIV prevention, where both the global and exclusive coverage exhibit the highest rates (69% in global coverage and 20% in exclusive coverage).
    - MARPs searching for "pickups" in bars or discotheques increase PrevenSida exclusive coverage (OR 1.5) without affecting global coverage ($X^2$ 2.4).

- ❖ Working in higher risk occupations (commercial sex, employed in bars, discotheques, motels) (OR 1.7 in global coverage, OR 1.4 in exclusive coverage).
- ❖ Studying increases PrevenSida global coverage (OR 1.3), but does not modify exclusive coverage ($X^2$ 0.8).

PrevenSida has built in some epidemiological planning elements derived, in principle, from the PEPFAR Central America Partnership Framework, with a view to assume the HIV situation as a concentrated epidemic in order to prioritize MARP groups. Therefore, the first approximation consisted of establishing alliances with organizations (associations and NGOs) representing or linked to key populations, which have developed a wide network. Each organization, in turn, has a social fabric that keeps a population segment very close to the organization, a situation expressed as a sense of ownership, although many organizations are NGOs without representativeness. This population segment accounts for 29% of total MARPs studied (72% of 40% claim to participate in organizations), including persons who are activists and develop leadership with convening power that facilitates access to preventive services. Obviously, this 29% of MARPs is the first universe of access. As of 2013, PrevenSida added the search of the three MARP groups at "pickup" venues, including mapping as an operational planning tool.

Undoubtedly, the association of these factors with an increased PrevenSida coverage shows that strategies are sought to reach population groups with complex accessibility, given the combined effect of stigma and discrimination, and the difficulties of security, working hours and willingness of the establishments and venues to locate MARPs. Hence, coverage manages to reach MARPs under an individual risk condition. However, it should be noted that 54% of PrevenSida global coverage and 48% of exclusive coverage originate from the organized MARP segment, whereas the unorganized MARP universe is a majority (60% of total MARPs), of which about half (30% of total) remains as a segment with few probabilities of being covered by PrevenSida, including half (15% of total) of MARPs working in high risk activities.

3. In addition to the aforesaid factors directly associated with PrevenSida project coverage, various factors related to MARP personal or family characteristics, sexual life, schooling, and social insertion (study, work, awareness of rights, stance concerning violence, etc.) act as effect modifiers to increase or reduce coverage, that is to say, they act as facilitators or barriers to MARP accessibility to PrevenSida preventive services. We mainly highlight those factors that characterize coverage or make a difference due to their reiterative presence, among others:
   - ❖ Factors that increase coverage or facilitate access:
     - ➢ Being over 24 years of age, with a higher schooling level (above 6th or 11th grade), not heads of household, students or members of an unemployed non-student group.
     - ➢ Having the first sexual relation after 16 years of age, looking for new "pickups" at bars or discotheques, being aware of unrealized rights and linking them to stigma and discrimination.
     - ➢ Working in activities related to tourism and mobile populations, having higher risk occupations (at bars, discotheques, motels), searching for work.
   - ❖ Factors that reduce coverage or hinder access:
     - ➢ Being under 24 years of age, living with any parent, having children, having a stable partner, living in the capital city, living in a municipality with a high HIV test positivity rate, and belonging to an employed non-student group.
     - ➢ Having the first sexual relation before age 15 or under pressure, looking for new pickups in commercial venues, being unaware of unrealized rights, and justifying violence against partner.

- Working in activities unrelated to tourism, having occupations other than sex work, or working at bars or discotheques.

All of the above factors operate in combination in relation to both project coverage and each preventive activity, which specificity in terms of MARP recruitment, relaxed or hasty conditions, and dialogue possibilities, among other things, also determine the different influences of the studied factors (a particular analysis of each activity is attached as an annex). Some of them could be linked to strategic management decisions (targeting, action redirection) and others to operating management decisions in terms of search modes, recruitment, and even dialogue and message contents.

4. In continuation of the foregoing, and considering that this study applies in its methodological design the basic elements of the PLACE approach proposed by MEASURE/USAID, evidence shows both progress and limitations in PrevenSida project coverage concerning strategic and operating management, which validate the epidemiological approach in HIV program management.

❖ The first PLACE methodological element is in line with the basic epidemiology principle of identifying territories where an incidence or prevalence of damage is concentrated, in order to target preventive intervention on them. As already mentioned, priority prevention areas (PPAs) were identified in this study, according to the PLACE methodology, based on municipal positivity rate of HIV rapid tests conducted by PrevenSida in the past three years. Evidence shows that the PrevenSida project has not based its territorial targeting decisions on HIV test positivity rates, as explained below:

- Global coverage in PPAs (municipalities with a high positivity rate) is similar to that in municipalities with low positivity (44% versus 46%, $X^2$ 0.2), i.e., there is no coverage prioritization by territorial risk level.
- The situation is counterintuitive in exclusive coverage, since PrevenSida care favors the low positivity segment, which has a 53% higher probability of accessing PrevenSida services, as compared to MARPs in PPAs that have a 35% lower probability of accessing PrevenSida prevention services. This means exclusive coverage does not prioritize PPAs, but rather focuses subsidy allocations on low positivity municipalities.
- No association was found between municipal HIV test positivity rates and coverage of the different PrevenSida communication activities. PrevenSida promotional contacts have the same coverage, regardless of municipality positivity (27% versus 26%, $X^2$ 0.03). The same happens with PrevenSida training event coverage (24% versus 27%, $X^2$ 1.6) and peer group participation (14% versus 15%, $X^2$ 0.12). The only exception is the case of VCT coverage provided by PrevenSida, which was lower in municipalities with the highest positivity (PPAs), as compared to municipalities with low positivity (13% versus 20%, OR 0.58, CI 95% 0.4-0.8, $X^2$ 13.4).

Evidently, prioritization by territorially defined risk levels has not been included in PrevenSida strategic management and planning. It seems that the implementing organization selection process has guided decisions that have not been associated to an understanding of the epidemic situation in territorial terms.

❖ A second methodological element in the PLACE approach consists of identifying specific venues within PPAs where MARPs seek new relationships ("pickups"), in the understanding that these relations contribute more to the risk of new HIV infections. It should be pointed out that PrevenSida had already incorporated since 2013 a "mapping of pickup venues" as a method for planning and organizing its preventive service offer, which has had clear effects on coverage:

- PrevenSida global coverage does not show significant differences among the three types of pickup venues identified in this study (bars/discotheques 47%, streets and shopping centers 44%, and communication networks 43%).
- PrevenSida exclusive coverage focused on MARPs looking for new "pickups" at bars and discotheques (OR 1.6, $X^2$ 8.7), but it is not very accessible to MARPs (36% of total) seeking new relationships on streets, shopping centers, or markets (OR 0.6, $X^2$ 7.1).
- An association was found only between the new pickup venue and VCT coverage provided by the PrevenSida network, identifying greater coverage in bars/discotheques (OR 1.5, $X^2$ 7.0) and less access for MARPs searching for pickups on streets and commercial venues (OR 0.7, $X^2$ 4.9). A similar coverage was found in other preventive activities offered by PrevenSida, regardless of the venue where MARPs meet new "pickups."

It is quite clear that the correct inclusion of "mapping" as an operating planning and organization method has improved PrevenSida coverage of MARPs, but it has been biased towards venues assumed to be of higher risk, resulting in the creation of access barriers to 34% of MSM and SW and 45% of TRANS, who habitually look for "pickup" on streets, shopping centers, or markets.

- The third element in the PLACE approach is the individual rating of risk based on the total number of sexual partners and the number of new sexual partners in the past month and past year, in the understanding that each person with whom an individual has sex increases the risk of new infections. This risk is higher with "new partners" whose background is unknown and the possibility of negotiating condom use cannot be foreseen. It should be noted that the number of partners is used by PrevenSida as one of its outcome indicators without differentiating them from "new" partners. No parameters were found to rate the individual risk level of served MARPs. This condition determines whether this element is assumed to characterize coverage without evaluation purposes.

  - No significant differences were found in PrevenSida global coverage (44% versus 49%, $X^2$ 2.3) or PrevenSida exclusive coverage (15% versus 15%, $X^2$ 0.0), according to "PLACE individual risk" rating.
  - A lower "PLACE high risk" rate was found where MARPs have been exposed to training events (OR 0.69, $X^2$ 8.1) and peer socialization groups (OR 0.63, $X^2$ 12.4), regardless of the agent that provided the service. No differences were found in the "PLACE risk" level between PrevenSida preventive activity coverage and preventive activities offered by "other agents."
  - PrevenSida global coverage is associated with a smaller average total number of sexual partners ($X^{2kw}$ 3.9, p=0.04) and the average number of new sexual partners ($X^{2kw}$ 4.2, p=0.04) in the past month, but PrevenSida exclusive coverage is not associated with significant differences in average total number of sexual partners ($X^{2kw}$ 0.04) or new sexual partners ($X^{2kw}$ 0.08) in the past month.
  - Of the four preventive actions provided by PrevenSida only exposure to promotional contacts is associated with significantly smaller averages in the number of sexual partners ($X^{2kw}$ 5.7, p=0.02). None of PrevenSida preventive actions are associated with smaller averages in the number of new sexual partners in the past month.
  - Except for promotional contacts, exposure to the other three preventive activities (regardless of the providing agent) is associated with a reduction in the average total number of sexual partners in the past month (Training $X^{2kw}$ 34.8, Peer group $X^{2kw}$ 40.4, VCT $X^{2kw}$ 12.0). The average number of new sexual partners was significantly smaller in MARPs exposed to training events ($X^{2kw}$ 26.6) and peer socialization groups ($X^{2kw}$19.2), regardless of the agent providing the service.

We have highlighted the effects of exposing MARPs to behavior-changing activities that may lead to dialogue and interaction, such as training events, peer groups and counseling as part of VCT, where the number of sexual partners is part of the educational content. In turn, promotional contacts exhibit very limited effects in modifying this indicator.

5. The study provides clear evidence validating a review of structural factors in the socioeconomic and institutional environment in the methodological design of the study. In this regard, the dialogue interview questionnaire explored the relationship between MARP jobs and specific production models that might lead to potential higher HIV infections, such as tourism and mobile population services. Additionally, based on interviews with key informants, the level of collective incidence of tourism and population mobility (borders, passenger flow, transport terminals) on each PPA selected in the study was reviewed. In effect, tourism and population mobility have an impact on both coverage and outcomes at the individual MARP level and at the aggregate level (mesovariable).
   - ❖ Forty percent of working MARPs claim their job is related to tourism and have higher probabilities of accessing PrevenSida global coverage (OR 1.54) and exclusive coverage (OR 1.48). While no significant differences were found in the PLACE risk level, they do have much higher averages of new sexual partners than MARPs working in activities unrelated to tourism (11.5 versus 8.1, $X^{2kw}$ 10.1, p=0.001), although they report a higher consistent condom use rate (OR 1.3, $X^2$ 3.9). In turn, as a mesovariable, municipalities with a high incidence of tourism do not show differences in accessing PrevenSida global coverage, but they do show a difference in accessing exclusive coverage (OR 1.5) and have a higher consistent condom use rate (OR1.3, $X^2$ 6.9), which seems to match the lower probability of municipalities with a high HIV test positivity (OR 0.48, $X^2$ 43.3).
   - ❖ Forty-six percent of working MARPs who claim to work in mobile population related services, do not have differences in their probabilities of accessing PrevenSida global or exclusive coverage, have a higher "PLACE high risk" rate (OR 1.4, $X^2$ 4.5) related to the fact that they report higher averages in the number of sexual partners (19.4 versus 16.9, $X^{2kw}$ 12.7, p=0.000) and new sexual partners in the past month (13.2 versus 6.6, $X^{2kw}$ 48.5, p=0.000), and exhibit a higher STI history rate (OR 1.44, $X^2$ 5.7). Viewed as a mesovariable, municipalities with a strong mobile population incidence have a higher probability of higher HIV test positivity rates (OR 1.4, $X^2$ 8.0), but show no differences in the probabilities of accessing PrevenSida coverage.

   Evidence shows that while visualization of MARP concentration venues is very relevant because they either work or find new "pickups" there, it is also necessary to visualize risks related to environmental structural elements conditioning personal interrelationships at "pickup" venues, either due to the incidence of tourism or high population mobility at borders or venues where there is a passenger or cargo flow. The relevance of this condition increases even more if we consider the changes Nicaragua is currently going through and the changes it will face in the near future with tourism development and a constant increase in people and cargo flow within Central America. Both situations will be compounded in the interoceanic canal construction scenario.

6. PrevenSida coverage has clear effects on consistent condom use. We consider that consistent condom use rate (39%) is relatively low, and critically lower in SW (26%), despite it is the group with the highest frequency use (77%) and availability (76%) rates, but less use condoms with their stable partners (31%). In the other two groups, the rate is almost half (44% and 45%). However:

- ❖ Both PrevenSida global coverage (OR 1.7) and exclusive coverage (OR 1.7) are associated with higher rates of consistent condom use, as compared to other MARPs.
- ❖ An association was also found between a higher rate of consistent condom use and PrevenSida coverage through specific preventive actions, as compared to the same activities offered by "other providers", such as promotional contacts (OR 1.6), training participation (OR 1.6), and VCT (OR 1.7). This association was not found in the case of peer socialization groups ($X^2$ 2.3), nor with an increase in the number of interpersonal contacts.
- ❖ The effect of PrevenSida exclusive coverage on consistent condom use is even higher in MARPs with a low schooling level, those who are heads of household, which are rated as "PLACE high risk," and those that participate in some organization.

7. MARP claim of an STI history is validated in this study as an adequate "proxy" outcome indicator, to the extent it is associated with higher municipal HIV test positivity rates (OR 1.7) and lower rates when condoms are consistently used (OR 0.68). In this context, it is remarkable that no association was found with PrevenSida project coverage (global: $X^2$ 1.2, exclusive: $X^2$ 0.3). Similarly, no association was found with specific preventive action coverage.
8. The number of contacts provided by PrevenSida in the same MARP does not have any effect on outcome indicators, i.e., increasing MARPs exposure to a larger number of per-capita contacts under current implementation conditions does not have any effect on protective behaviors or risk levels. Nevertheless, passing from one to two, and from two to three and more contacts does have a clear consequence of increasing coverage of other preventive activities offered by PrevenSida. In other words, contacts as an activity have a clear promotional and motivational purpose that translates into MARPs transitioning to new forms of relationship and exposure to preventive activities (training, VCT, peer groups), which are more likely to modify behavior and risk indicators by enabling dialogue and interaction conditions, as shown above.
9. As expected, exposure to PrevenSida coverage increases the rate of MARPs who are aware of unrealized rights related to stigma and discrimination *(58% versus 50%, OR 1.4, CI 95% 1.1-1.7, $X^2$ 8.1)*, as compared to MARPs unexposed to PrevenSida activities. The relevance of this association is that awareness of E&D-related HR is, in turn, associated with a significant increase in consistent condom use *(45% versus 32%, OR 1.7, CI 95% 1.4-2.2, $X^2$ 24.4)* and with a significant reduction in the number of sexual partners during the past month *(10.2 versus 19.0, $X^{2kw}$ 21.5, p=0.0000)*. The same effect was not found in the case of new sexual partners ($X^{2kw}$ 1.9, p=0.165).

## VI. RECOMMENDATIONS

The team considers that the main recommendation consists of using the evidence in this study as a tool for motivating reflection and dialogue at all levels in the USAID/HIV Program, and particularly in the PrevenSida Project. The team is convinced this exchange will ultimately achieve the best interpretation of said evidence and will translate it into decisions for change, in order to strengthen and expand obvious achievements, as well as to adjust elements that have been shown to weaken or hinder the achievement of PrevenSida goals.

We draw attention to the use of the annex that contains the specific analysis of each preventive activity. In addition to the four activities analyzed in the entire coverage (contacts, training, peer groups, and VCT), we also added an analysis of exposure to messages and condom accessibility. We believe this annex can be very useful in dialogues within implementing organization work teams and MARPs themselves.

In order to target elements where robust findings were made, we would like to suggest some broad courses of action:

1. A closer look should be taken at the possibility of including key PLACE methodological elements as axis that can articulate an overall adjustment to the project approach that can translate into planning and organization processes at the different levels:
   - ❖ Prioritization by territorial risk level should be included that translate not only into targeting decisions, but also in designing specific strategies for each location, taking into account the PLACE definition which states that a national epidemic is nothing more than an aggregation of various local epidemics. Monitoring and evaluation should include follow-up of the coverage shift towards the highest risk and an adjustment of work strategies to local characteristics.
   - ❖ "Mapping" development should continue in more depth as a local planning and organizational instrument, defining effective strategies to reach MARPs looking for "new pickups" in venues other than bars and discotheques, in order to transfer relevance to MARPs exposed to new infection risk on streets, commercial areas, markets, transport terminals, etc.
   - ❖ Consideration should be given to the possibility of including MARP rating criteria to individually identify riskier or less risky behaviors, and thus monitor changes and define adequate follow-up strategies. The combined prevention model cannot be viewed as an across-the-board quantitative standard for all MARPs. We believe that the number of partners and new partners, as well as consistent condom use, could be monitored more closely.

2. The two well-differentiated coverage segments in terms of access and outcomes, namely, MARP segments with PrevenSida exclusive coverage and mixed coverage, are large enough (30% of total MARPs) to warrant a more in-depth analysis and determine whether targeting strategies need to be further adjusted with other provider agents, in order to make them truly complementary and, if possible, synergistic in seeking the same results. Likewise, consideration should be given as to whether monitoring systems should include elements identified by covered MARPs, in order to establish evidence-based dialogues with other major players at the local level in seeking better results and optimizing scarce resources.

3. The series of coverage and outcome conditioning factors should be considered, particularly those that could become:
   - ❖ Collective, group, or individual risk trackers to develop guiding policies for targeting actions. All MARPs have a risk level, and while the highest risk should be prioritized, it cannot be done at the expense of a limited coverage of LOWER risk, especially in a population universe with a 78% HIGH RISK according to the PLACE indicator. As an example, PrevenSida HIV rapid test positivity rates or STI history are indicators relatively easy to gather and process, and can be monitored and inserted in periodic planning exercises.
   - ❖ Limited accessibility trackers are understood as access to the entire combination prevention model and not only to contacts. As noted in the analysis, priority targeting of risk is not enough, and therefore targeting should be accompanied with search, contact, and follow-up strategies. Such tools as "mapping," adjusting working hours to MARP life dynamics, and partnerships with relevant players (municipal tourism boards, transport companies, transport terminal authorities, etc.) can greatly contribute to a more effective coverage.
   - ❖ Special attention should be given to MARPs who claim that personal or family conditions limit their participation, such as being young, low schooling level, having children, not having autonomy at home,

history of violence and abuse (1st relationship, partner relationships), and self-awareness as a subject of rights. These factors result not only in attraction strategies, but also in dialogue modes and contents.

4. Findings that confirm, quantify, and highlight the incidence of structural factors in the economic environment, such as HIV risk related to tourism, mobile populations, or workers' concentration in enclaves, point to the need for analyzing the epidemic in the light of public policies and processes that are changing these scenarios, in order to identify territories and population groups currently exposed, or more exposed in the near future, and develop risk control strategies linked to the development of tourism projects, infrastructure (revamping of ports, roads, the Grand Canal), or others. Similarly, this visualization enables to more clearly identify public or private responsibilities in controlling the epidemic, which guides dialogue and joint actions agreed in local partnerships between public institutions (mayor's offices, INTUR, municipal tourism boards) and private companies (large, medium, and small) that can and should assume leadership roles in prevention.

5. The project should examine in more depth the role and purpose assigned to interpersonal contacts carried out in MARP life scenarios. Their clear effects on coverage of other activities strongly justify their implementation and the fact that they are the focus of operating planning. However, their limited effects on outcome indicators warrant a clearer inclusion of training events, peer groups and VCT in programming approaches to complete the combination prevention model.

6. The evidence contained in this report can be of great educational value in working with MARPs and implementing organization staff in the field if it is used in dialogues and educational materials. The idea is to promote evidence-based communication leading to immediate individual and collective self-reference concerning their own experiences, interpretations, and behaviors because it is immediately seen that it is not just about data, but data expressing the voice of peers who live in the same or similar places and who have equal or similar life dynamics. As a result, data has the power to encourage reflection and places the specific and local situation as a benchmark for a dialogue between various explanatory models seeking consensus on actions for change, generating collective dynamics that communications based on theoretical concepts fail to encourage.

7. Coverage and outcome achievements warrant further systematization in order to be improved and replicated, which should not only highlight work methodologies or modes more related to the actions carried out, but also be a clear reference to the various scenarios where actions take place, in order to adjust capacity-building training guides, methodologies and processes for implementing NGOs to recognize the uniqueness of each local epidemic.

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